ADVERSE LIFE EVENTS AND ADOLESCENTS' EMOTIONAL AND BEHAVIORAL PROBLEMS: COGNITIVE FACTORS AND PERSONALITY TRAITS AS MODERATORS

By

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Dr. Rubina Hanif
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Dedicated To
My Parents

ADVERSE LIFE EVENTS AND ADOLESCENTS' EMOTIONAL AND BEHAVIORAL PROBLEMS: COGNITIVE FACTORS AND PERSONALITY TRAITS AS MODERATORS

INTRODUCTION

Author's Declaration

I **Tasnim Rehna** hereby state that my PhD thesis titled **Adverse Life Events and Adolescents' Emotional and Behavioral Problems: Cognitive Factors and Personality Traits as Moderators** is my own work and has not been submitted previously by me for taking any degree from this University i.e. **Quaid-i-Azam University** or anywhere else in the country/world.

At any time if my statement is found to be incorrect even after my Graduate the university has the right to withdraw my PhD degree.

Name of Student: Tasnim Rehna

Date:

Certificate of Approval

This is to certify that the research work presented in this thesis, entitled "**Adverse Life Events and Adolescents' Emotional and Behavioral Problems: Cognitive Factors and Personality Traits as Moderators**" was conducted by **Ms. Tasnim Rehna** under the supervision of **Dr. Rubina Hanif**.

No part of this thesis has been submitted anywhere else for any other degree. This thesis is submitted to the **NIP** (Name of Department of the University)…**Quaid-i-Azam University** in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Field of **Psychology** (Subject Name) **Psychology.**

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ABSTRACT

The presents study purported to examine the impact of adverse life experiences on adolescents' emotional and behavioral problems. It further aimed to explore the moderating role of verbal (vocabulary, verbal reasoning, numerical ability, and general knowledge) and nonverbal cognitive abilities, self-debasing (catastrophizing, personalizing, selective abstraction, and over generalization) and self-serving (self-centeredness, blaming others, mislabeling, and assuming the worst) cognitive errors, and personality traits in relationship between experience of adverse life events and problem behaviors. A purposive convenient sample of 663 adolescents (aged 11 to 19 years) was administered with Adverse Life Event Scale (ALES; devised in the present study), School Children problem Scale (SCPS; Saleem & Mehmood, 2011), Sajjad Verbal Intelligence Test Urdu (SVITU; Hussain, 2000), Raven's Standard Progressive Matrices (RSPM; Raven, 2000), Children Negative Cognitive Errors Questionnaire (CNCEQ; Leitenberg, Yost, & Carroll-Wilson, 1986), How I Think Questionnaire (HIT-Q; Barriga, Gibbs, & Potter, 2001), and NEO-Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1992) to meet the objectives of the study. Comprising on three Phases, ALES was developed and HIT-Q was translated At Phase I. At Phase II pilot study (N = 303; Boys = 139, Girls = 164) was conducted to establish the psychometrics (reliability estimates, validity coefficients, internal consistencies etc.) of the scales and to explore the relationship between the study variables. Findings provided support for good validity and reliability coefficients for the study scales. Exploratory analyses at Phase II suggested family related adverse events as the most stressful events and showed that most of the problem behaviors, self-debasing cognitive errors, and neuroticism were higher among adolescents who had experienced family, personal, or school related adverse event. While the ratio of self-serving cognitive errors and other personality traits was higher among those with residence related or health related adverse experiences. Main study (N = 663; Boys = 428,

Girls = 235) was then conducted at Phase III for hypothesis testing. Results of the main study revealed that adverse life events, self-debasing cognitive errors, and neuroticism positively and significantly (p<.01, .05) predicted emotional and behavioral problems among adolescents whereas self-serving cognitive errors, verbal cognitive abilities, extraversion, agreeableness, openness, and conscientiousness were strong and significant (p<.01, .05) negative predictors of emotional and behavioral problems among adolescents. However, nonverbal cognitive ability remained a non-significant predictor. For moderation effect, self-debasing cognitive errors and neuroticism significantly boosted the effect of adverse life experiences (p<.01, .05) whereas verbal cognitive abilities, self-serving cognitive errors, extraversion, agreeableness, openness, and conscientiousness buffered the effect of adverse life experiences on emotional and behavioral problems of adolescents. One way multivariate analyses revealed significant (p<.01, .05) age differences suggesting that middle adolescence group had highest levels of emotional and behavioral problems and self-debasing cognitive errors whereas late adolescence group showed the highest levels of verbal cognitive abilities, self-serving cognitive errors (self-centeredness and blaming others), extraversion, and conscientiousness (p<.01, .05). For income wise comparison, middle income group showed the highest level (p<.01, .05) of problem behaviors and self-debasing cognitive errors whereas high income group showed highest levels of verbal cognitive abilities (vocabulary and numerical ability), extraversion, agreeableness, and conscientiousness. Neuroticism was highest among low income group. One way ANOVA revealed that the impact of adverse events was highest among middle age and low income groups whereas nonverbal cognitive ability was highest among late age and high income groups of adolescents. Significant group differences (p<.001, .01, .05) on family system and gender were also observed for the study variables. The study holds theoretical (contributing into the existing literature by developing

indigenous scale) as well as practical (by highlighting the need for appropriate prevention and interventions measures to deal with problem behaviors of troubled youth) implications.

Chapter I

Introduction

Youth, in general, can be termed as an age where individuals witness a cluster of upside down changes ranging from physical to emotional and social to spiritual growth (North Carolina Department of Public Instruction [NCDPI], 2004). Among various facets of youth, adolescence is more vulnerable to stressful extraneous factors like poverty, medical conditions and academic conflicts which resultantly lead to an array of internalizing as well as externalizing conduct patterns (McGee & Williams, 2000; Mohay & Forbes, 2009; Morgan & Todd, 2009; Schumacher & Kurz, 2000). During these growing years multiple developments occur simultaneously. These developments encompass their physical growth including puberty which is followed by a wide range of other psychosocial changes in terms of identity; exploring personal flairs, interests, and talents; developing peer and amorous relations; and getting more autonomous and crazy in making decisions regarding health, adventures, and future life (Steinberg, 2005). Though this stimulating epoch of growth is branded with acute sense of probe, exploration, and growing capacities, it carries along numerous factors which make adolescents even more vulnerable.

Numerous researches reveal that these pivotal changes in early grade adolescents, when combined with increased importance of peer relationships, intensify degree of self-consciousness and uncertainty that even enhance their vulnerability for socio-emotional sensitivity and problems in middle adolescence period (Blakemore, 2008). Furthermore, fluctuating nature and capricious timing of such transitions proliferate already existing insecurity and instability in adolescents and it gets further complicated if it is not synchronized with their peer groups (NCDPI, 2004). Interestingly, early adolescence

changes vary widely from set of physical, emotional and cognitive changes of first three natal years as these take place with a heightened degree of intrapersonal cognizance and uncomfortable comparison with peers and thus cause more stress (NCDPI, 2004).

Along with socioemotional insecurities, substantial biological changes also take place in brain during early adolescent years, triggering an elevated degree of emotional vulnerability (Steinberg, 2005). This emotional vulnerability governs thinking patterns of adolescents and they fall prey to emotional and dramatic responses to various stressful events of life. As middle grade apprentices mature in age and promote to secondary and higher secondary level epochs, their cortical region of brain also starts maturing and higher order cognitive control unit in the brain steer larger impact on their overall functioning (Steinberg, 2005). Furthermore, these executive functions are linked to an increasing capability of logically calculating pros and cons of a specified response, as well as ensuring precise projections concerning their prospective life. In addition, development of the cortical region of brain is directly proportional to a young person's propensity to dominate the primitive "fight or flight" responses to a situation and allow them to make more confident, vivid and refined response towards any threatening or frightening situations of life (Spenrath, Clarke, & Kutcher, 2011). However, during middle grade years, these changes are in emerging phase and are quite primitive on maturational ground, thus adolescents during this era show higher propensity to react emotionally towards life stressors than those in late adolescence period.

These middle grade adolescents, advertently or inadvertently, are gradually exposed to more advanced and adult life stressors (NCDPI, 2004). Such exposures may vary from mild (i.e., can be holding them responsible for their academic performances) to harsh (i.e., decisions regarding drug usage or antisocial conduct). Middle adolescents, before developing a routine acceptance to such behaviors like older adolescents or adults,

may go through a distorting phase. These experiences, before translating into accumulative values and perspectives for interpreting, assigning values or responding to a variety of life events, may be considered a nightmare in the early years of adolescence epoch. An ample of research has demonstrated the development of many psychopathologies i.e. anxiety, anger and even depression due to exposure to adverse events of life (Gault-Sherman, Silver, & Sigfusdottir, 2009; Johnson, Whisman, Corley, Hewitt, & Rhee, 2012) which subsequently can spoil their willingness to learn (de Anda et al., 2000; Franko et al., 2004; Oliva, Jiménez, & Parra, 2009).

Altogether, adolescence is a stressful epoch with multiple pressures making adolescents vulnerable for numerous emotional and conduct outcomes which are the focus of the present study. The present study centered upon the assumptions to find out either experience of adverse life events lead to emotional and behavioral problems and what role some other factors such as cognitive abilities, cognitive errors, personality traits and demographic variables play in this relationship. Empirical foundations to answer these questions were made on basis of previous researches and theoretical explanations for each of the study variables and have been discussed as under.

Adverse Life Events

Adverse events and subsequent stress resulting in psychopathology and even mortality has often been documented as a substantial public health concern (Brown, Harris, & Eales, 1993; Dohrenwend, 2006; Ford, Collishaw, Meltzer, & Goodman, 2007; Kessler, 1997; Tiet et al., 2001). Documented origin of the research on impact of stressful life events on the physical and mental health of an individual dates back to WW1 where shell stricken and battlefield-fatigued cases were reported (Schwarzer & Schulz, 2001). However, psychologists started documenting stressful life events' victims since late 1960 and amongst pioneers were Brown and Birley (1968) who discovered associations

between adverse life events and fits of schizophrenia and then acute schizophrenia (Birley & Brown, 1970). In their study they categorized "a list of events which on common sense grounds are likely to produce emotional disturbance in many people". Later research successfully established a vivid link between stressful life events and subsequent risk for psychopathology (Flouri & Panourgia, 2011; Hammen 2005; Hayat, 2013; Rutter, 2007). Researches enlisted a wide range of life stressors than focusing on any singular stressor for studying behavioral and emotional issues of adolescents (Flouri & Kallis 2007; Johnson 1986).

Holmes and Rahe (1967) termed an event as stressful event if its occurrences cause readjustments and changes in usual activity of individuals. Conceptual definition of a stressful event thus can be “the person experienced, witnessed, or was confronted with an event where there was the threat of or actual death or serious injury. The event may also have involved a threat to the person's physical or psychological well-being or the physical or psychological well-being of another person” (APA, 2013). Components of any stressful encounter thus can be the way various people absorb them cognitively as a threat, loss, harm or a challenge (Fatimi et al., 2007). However, assessment, result and coping of any such stressor are dependent upon its gravity, length, and ambiguity.

Schwarzer and Schulz (2001) coined normative and non-normative dimensions of these events. They termed those events as normative which happen naturally to people at a certain time and are well expected during normal course of time i.e. school changes, wedding, delivery, examinations, vocation, superannuation, deaths of various people around including parents (McKenry & Price, 2005). Contrarily, non-normative events include infrequent or unforeseen events, such as calamities, accidents, or ailments (Boss, 2001; McKenry & Price, 2005). However, even normative dimension of these events, despite the element of expectedness, carry an element of surprise in it and one can get

prepared in general for the expected harm but still one wonders when it will happen. However, regardless of the types, adolescents are affected by approximately all major and minor adverse events and study reveals that approximately 25% of adolescents witness a major stressor in the form of death of a dear one or some other traumatic episode while majority among the rest endure protracted stressors and diurnal hassles (Hyder & Razzaq, 2013). Frequent among these relate to academic institutes, and relational problems (Donaldson, Prinstein, Danovsky, Spirito, 2000; Williamson et al., 2003).

Theories of Adverse Life Events

Adverse life experiences, in most of the cases, do not require a pathological response as victim assimilates it with the help of his/her cognitive abilities. However, if assimilation fails various psychological disorders and other mental health ailments can follow such as withdrawal, physiological reactivity, and difficulties in readjustment. Several psychological and social theories have been put forward to explain traumatic stress and resultant consequences, and significant among those are as follows:

Janoff-Bulman's assumptive world theory. Janoff-Bulman's (1992) proposed a cognitive model named "assumptive world theory" for comprehending adverse influences of resulting from the experience of adverse life events. It holds the notion that un-traumatized people uphold positive view of themselves as well as others and view the outer world as objective, meaningful, and benevolent. One dark facet of adverse life experience is that it shatters these "fundamental assumptions" (Beck & Clark, 1988; Janoff-Bulman, 1989), and the ultimate recovery necessitates restoration of this fundamental belief about oneself and rest of the world.

Shattering of existing set of beliefs, loss of positive perception of the self, and disbelief in a compassionate meaningful world is a logical outcome of any trauma i.e. loss of someone, incest, sexual assault or other calamity (Janoff-Bulman, 1989; Schwartzberg

& Janoff-Bulman, 1991). Similarly war-related traumas and exposure to militancy have been observed to result in distorted self-control and believe in personal faculties (Solomon, Benbenishty, & Mikulincer, 1991). Congruent effects were found in the survivors of Holocaust who showed distrust and strongly negated an empathetic and benign world (Prager & Solomon, 1995). However, the more these beliefs and cognitions become closer and consistent to the reality, the more they help in interpreting prospective fears and threatened events in a rational and logical manner via positive cognitive appraisal which, in turn, result in the perception of a secure world (Wortman & Silver, 1987). Contrary to this, these shattered beliefs may ultimately result in psychological distress which is reportedly developed after experiencing any adverse life event (Nolen-Hoeksema & Morrow, 1991; Stewart & Salt, 1981). Research has manifested that exposure to acute and extremely adverse events i.e. death of a dear one, loss of job or serious health issue can result in clinical symptoms of depressive disorder or anxiousness within a duration of one year (Bifulco & Brown, 1996; Finlay-Jones & Brown, 1981), and these repercussions are mainly due to malfunctioned cognitions of individuals about themselves and world around (Beck & Clark, 1988).

Stress as a transaction. Lazarus, being a social-personality psychologist, showed interest in explicating the underlying mechanisms of traumatic and adverse life experiences. He proposed and verified a "transactional theory of stress and coping (TTSC)" (Lazarus, 1966; Lazarus & Folkman, 1984). He attached experiential value to the concept of stress but in and of itself it was not quantifiable as a lone factor. Lazarus (1966) argued that the event itself is void of stress or does not constitute the element of stress; rather it is the interaction between the individual and environmental factors that contribute to the development of stress. He labeled stress as a blend of "affective, cognitive, and coping components". He declared that the basic mediating factor of the interaction

between individual and his environment was cognitive interpretation which usually operates on three levels: primary appraisal, secondary appraisal, and reappraisal.

Primary appraisal deals with individual's perception and evaluation regarding what is destined for him in a particular event or situation. In particular, the individual evaluate the impact of estimated discrepancy between the desired and available resources on his psychological well-being. In case of greater discrepancy (i.e., the desired resources overweigh the available ones) the person may perceive the situation as alarming or harmful. However, this previewed threat, if not considered harmful, does not contain the element of stress appraisal. *Secondary appraisal*, triggered by threat perception, is the process that determines nature of coping options or actions available and their usefulness to counter a possible threat. These primary as well as secondary level appraisals may often coexist at the same time and may co-vary with each other, hence making assessment process difficult (Lazarus & Folkman, 1984).

Reappraisal is characterized by a continuous and on-going process of interpreting, changing, or reassigning the labels to initially existing primitive and secondary level appraisals along the changing circumstances. Initial perception of threat may get transformed into a challenge or something mild or irrelevant as reappraisal mostly ends up in cognitive elimination of alleged threat. Numerous circumstantial factors affect appraisals of threat. It includes quantitative strength and intricacy of threat; victims' set of values, commitments, and ambitions; resource availability; uniqueness of the environmental conditions; self-worth; societal support; environmental restraints; coping abilities; extent of insecurity and doubt; perceived control, as well as time span of the peril. Contextual occurrences during this appraisal processes then decide and regulate affective responses and coping mechanism to deal with these responses (Lazarus, 1966; Lazarus & Folkman, 1984).

Cognitive model of stress. Ehlers and Clark (2000) postulated that pathological responses to traumatic events result from an individual's information processing in manner that gives a perception of threat whether internal (towards one's own self or his future) or external (regarding safety of the environment). Negative evaluations of adverse events or the abnormality associated with the event as well as the nature of adverse event are two fundamental aspects that typically lead to these effects. Ehlers and Clark (2000) further theorized that the victims involve in an acute negative appraisals regarding external threat, perceiving the outer world as menacing; and about internal risk, perceiving self as incapacitated. This eventually leads to distorted evaluation of the environment (Mayou, Bryant, & Ehlers, 2001; Steil & Ehlers, 2000), thus ultimately result in the development and maintenance of mental health difficulties.

The aforesaid theories briefly explained mechanism and sequelae associated with the experiences of adverse life events. However, the trajectory of adverse life events to psychopathology has been best explained under "Cognitive Reworking Model" proposed by Horowitz's (1975) which is discussed as follows.

Horowitz's and silver's perspectives on cognitive reworking. Horowitz (1975, 1986) stands as a forerunner in PTSD field owing to contributions in processing of moods, thoughts, and images related to trauma and loss. His theory has footprints in psychodynamic notes of usual and unusual painful reactions, and in traditional concept of assumptive worlds of individuals owing to various reactions (Horowitz, 1975). Horowitz contends that people primarily respond in crying when they encounter any trauma while their secondary response is trying to assimilate traumatic information with that of their prior knowledge (Horowitz, 1986). In such situations, people are faced with a phase of information overload which makes it difficult for them to synchronize their thoughts and memories of pre and post traumatic phase. Psychological defense mechanisms are applied

in such situations to avoid memories of trauma and its recurring recalling. Victim of trauma may be in a state of denial about trauma, avoiding its reminder or feeling numb yet basic psychological need to synchronize pre and post trauma information means that traumatic memories are broken into consciousness in the shape of flashbacks, nightmares and intrusions. These willfully experienced traumatic memories offer victim an opportunity to attempt reconciliation with pre-trauma representations.

Interestingly, Horowitz puts forward two contrasting processes happening simultaneously: One by securing victim through suppression of traumatic information and second through controlled promotion of trauma information by fetching it to mind. Consequently, the victim vacillates between withdrawal intentions and ruminations of the traumatic event that in return enables him/her to work out on traumatic information and resultantly severity of every phase declines. In the process, enduring structures of memory, which are expressive of future goals and self, are attuned in a way to get consistent with latest data and thus trauma processing gets completed. Breakdown in re-channelization of traumatic information results in post trauma reactions because this information rests in working memory and keeps on intruding or is simply avoided.

Horowitz's scientific contribution holds a variety of significant explanations and has justly been regarded as influential. He is pioneer theorist in highlighting the impact of traumatic events on a broad set of beliefs regarding one's own self, outside world, and the future as well as he explained the mechanism of recovery involving extensive and comprehensive cognitive shift. Acknowledging this comprehensive study and its power to explicate the range of emotions and schemas faced by traumatized people, his theory was termed as 'social-cognitive theory' by Brewin, Dalgleish, and Joseph (1996). However his theory lacked in covering in depth areas involving distinction between normal recollections of stressful event and flashbacks, individual differences in reactions to

adversity, reaction during the occurrence of trauma, role played by contextual variable i.e., support and trauma cues (Brewin, 2001; Litz, 1992).

His theory suggests that most of the post traumatic complexities arise out of individual's inability to rework upsetting reflections of adverse life event into a tangible cognitive structure (Silver, Boon, & Stones, 1983; Tait & Silver, 1989). He argued that this 'cognitive reworking' is a result of repetitious progressions of trauma-related ruminations and denial (Horowitz, 1986; Tait & Silver, 1989), which gradually fix these impulsions into a permanent and sustainable mental structure. He further argues that this cognitive adaptation is closely attached with the mechanism of extracting meaning in catastrophe and handling with continuous social as well as personal consequences of trauma (Tait & Silver, 1989). During severely adverse experience cases, cognitive assimilation gets enormously difficult due to longstanding distress as a byproduct of avoidant and intrusive spells (Lepore, Silver, Wortman, & Wayment, 1996; Miller, Rodoletz, Schroeder, Mangan, & Sedlacek, 1996), and this in return gives birth to PTSD symptomatology (Horowitz, Wilner, & Alvarez, 1979).

Undeniably, intensity of distorted cognitions predicts severity of distress in a post trauma event (Creamer, Burgess, & Pattison, 1992). Silver et al. (1983) in their analysis of incest victims, discovered that many female survivors of catastrophe were unable to figure out the event, attach any meanings to it, or at all justify its happening but reported them as severe, disrupting, and distressing even decades of their happening. But those who got successfully coped with the trauma on cognitive level were found to be less troubled with its remembrance. Comparable findings were discovered in Tait and Silver's (1989) study of senior community fellows. Most of the older citizens of study divulged facing repetitive, acute and intrusive thoughts of their extreme negative experiences, which they

went through even decades ago and these ruminations resulted in dissatisfaction with life and failure to find meaning in the event (Holman & Silver, 1996).

Although plenty of data supports theoretical standpoint on cognitive reworking, there exists little indication that the demand to cognitively revisit a nerve-racking event is what results in rumination. Rumination, however, may not be the etiological factor that leads to negative appraisal and further in depression, rather it possibly may be the symptom of maladjustment which is more of an outcome. Further, numerous other studies advocate that reworking process results in lasting benefit than decline (Tedeschi & Calhoun, 1995). This perspective though aligned with Silver's notion that ruminations help finding meanings in distressing events, needs empirical settlement with those researches that manifest long-standing drawbacks of these ruminative procedures.

Nevertheless, it becomes vivid that unfavorable circumstances of life have long standing impact on individuals' thought process and related imagery of the event even when the event has faded in the time zone. These afflicting thoughts are continuing and severe, and a person's capability to successfully deal with succeeding adversities might be meaningfully reduced, placing him at risk for the negativity of potential stressors in future. Theoretically, existing models of developmental psychopathology identify the latent significance of this psychological anguish in the etiology and upholding of emotional and behavioral problems in young people. (Cicchetti & Toth, 1997; Haggerty, Garmezy, Sherrod, & Rutter, 1994). Both established and recent social adversities herald and surge the risk for behavioral and emotional psychopathology during school years. (Goodyer, Tamplin, Herbert, & Altham, 2000; Sandberg, Rutter, Pickles, McGuinness, & Angold, 2001).

Outcomes of Adverse Life Events

Stressful changes in the life of an individual, bringing strain and upsetting health, are called adverse life events. These occurrences are tagged as positive or negative, containable or uncontainable, or tagged owing to other scopes as chronic or connecting to specific domains including health, family, or society. Such adverse life events, of any of the aforesaid category, may potentially change lifestyle (Ferguson, Lawrence, & Matthews, 2000), and are connected to physical health consequences, e. g., breast cancer (Butow, et al., 2000) and development of HIV to AIDS (Leserman et al., 2000). It also carries backing of strong evidence concerning its linkage to mental health consequences, including depression commencement (Holahan, Moos, Holahan, Brennan, & Schutte, 2005) and anxiety disorders (Murphy, Moscicki, Vermund, & Muenz, 2000). For instance, cognitive model of Beck (1986) theorized that negative and distorted self-schemata interact with life stress to predict multitude of psychopathology among adults and adolescents.

Beyond doubt, plentiful common stressors of adolescence and other significant life events are related to mental health and behavioral difficulties including depression and anxiety as well as externalizing symptomatology or conduct problems i.e. anger, hostility and sociopath behaviors (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001). For instance, the manifestation, continuation, and ending of intimate relationships are linked to negative affects like sleeplessness and symptomatic depression through interpersonal conflicts, refusal, and other social stressors (Monoroe, Rohde, Sleeley, & Lewinsohn, 1999). Amorous relations may be major source of stress, when jealousy, aggression, infidelity and conflict occur (Gallaty & Zimmer-Gembeck, 2008). Breakups severely affect mental health and result in commencement of clinical depression in adolescents.

Few researches have directly assessed positive results of coping with stressful events manifesting that handling just manageable challenges are vital to the growth of a wide range of abilities and capacities. Researchers indicate that conflicts, obstacles, or failure are latent catalyst for exploration and learning for adolescents as they provide an opportunity to build resources for coping with forthcoming negative events (Aldwin, Levenson, & Spiro, 1994). Majority of researchers agree that results of stressful events of life and daily disturbances are evaluated whether positive or negative largely depends upon the way individuals perceive and react towards them. Dissimilar to children, adolescents confront with variety of novel, challenging and threatening experiences during social transition including leaving home, achieving satisfactory educational or career opportunities and establishing amorous relationships. These challenging situations may often put them at risk to form a wide array of psychological problems. Moreover these stressors have varying degree of effects on them where some take it as a catalyst for positivity, reevaluation of life priorities and develop strong family ties while few others get solitary, depressed, disorderly and increasingly vulnerable to any identical future event.

Clinical literature establishes that adverse life events serve as risk factors for the growth of anxiety, depression and extremity in PTSD or various other behavioral and emotional complications (as cited in Updegraff & Taylor, 2000). For instance, parental rejection and child abuse have been frequently observed to result in somatoform disorder and various emotional outbursts (Farooq & Yousaf, 2016; Naz & Kausar 2012). Extensively researched results of stressful life events comprise undesirable or maladaptive reactions like negative affect and behavioral outbursts (Flouri & Panourgia, 2011; Nolen-Hoeksema & Morrow, 1991; Stewart & Salt, 1981), and cognitive disturbances such as

ruminations and disturbing reflections that can hamper an individual's routine activities and healthy adjustment (Horowitz, 1975; Shaham, Singer, & Schaeffer, 1992).

Literature offers a broader and comprehensive view of research examining the relationship between experience of adverse events and adolescent psychopathology (Carter, Garber, Ciesla, & Cole, 2006; Chapman, Whitfield, & Felitti, 2004; Evans, 2003; Ford, Collishaw, Meltzer, & Goodman, 2007; Hammen 2005; Hayat, 2013; McCarty & McMahon, 2003; Rutter 2007; Sanders-Phillips, Settles-Reaves, Walker, & Brownlow, 2009; Sandberg et al., 2001; Tiet et al., 2001). Moreover, life stress reportedly draws a common instead of specific pattern of relationship with general psychiatric outcomes (Shanahan, Copeland, Jane Costello, & Angold, 2008). Although, the negative outcomes of adverse life events are many; but the present study engrossed emotional and behavioral problems because of their high prevalence rate. For instance Saleem and Mehmood (2011) reported that emotional and conduct problems are increasing among Pakistani school children and adolescents with an alarming rate; yet very few researches have been directed to study these problems with reference to various adverse experiences of adolescence time period. Thus the current study intended to focus on emotional and behavioral problems as outcomes of the experience of adverse life events among adolescents.

Emotional and behavioral problems. Adolescence is a transitional developmental phase which turns a child into an adult both physically as well as psychologically (Nelson & Israel, 2003). This transition accompanies physical growth, puberty, inclination to self-reliance, rising peer pressure, growing stress regarding body image and interpersonal relationships, as well as exposure to an array of stressors that expose adolescent to contemporaneous and later problems (Kazdin, 2000). Their self-doubts may make them feel less self-assured and more insecure concerning their worldly status and thus naturally they become self-conscious, aggressive or introvert (as cited in

Hiremath, Hunshal & Gaonkar, 2008). These risky or maladaptive conducts develop and at times reach their peak during the period of adolescence (Rönnlund & Karlsson, 2006; Walker, Nishioka, Zeller, Severson, & Feil, 2000).

Research studying emotional and behavioral disorders in conduct, mood, eating, anxiety, substance abuse, attention-deficit hyperactivity (ADHD), suicide, relational violence, and other problems in adolescents indicates that gender differences, expression, epidemiology, developmental pathways, comorbidities, causes and contexts of these disorders are different in adolescents than other age groups owing to the unique patters of growth and distinctive challenges (American Psychological Association, 2002; Cicchetti & Rogosch, 2002; Saleem & Mehmood, 2012). Previous researches have drawn a pivotal relationship between negative events of life and emotional anomalies in adolescents. Events of both minor and major magnitude have been found to be predictive of subsequent internalizing and externalizing problems in adolescents.

Studies have even shown that adverse events are predictive of increases in symptomatology after controlling for initial levels of maladjustment (Kraaij et al., 2003). The beginning of these affective and conduct difficulties during adolescence may be fast or slow in time span depending on type of social misfortunes. But the type and nature of these psychological effects and reasons behind their slow or fast emergence remain entirely unknown. A significant supposition denotes that events and problems carry a covert and unwanted psychological build that can be deduced from a thorough recollection of the social features of the occurrence. Developments in neurosciences have labeled these intermediate mental and neural processes liable of managing behavioral responses to various types of adversity (Wolfe & Mash, 2006). Adolescents confront score of adversities during this transitional phase and some of those, which have been explored after a thorough

investigation (Saleem & Mehmood, 2011) among Pakistani school children and adolescents, are discussed as follows:

Anxiety. "Anxiety is invoked as an explanatory device in a wide variety of historical and sociological writing. The general form of such accounts is that the occurrence and timing of some social phenomena is explained by reference to the presence of some elevated state of anxiety which elicits social or political responses by an identifiable group of social agents. Anxiety is a psychic condition of heightened sensitivity to some perceived threat, risk, peril or danger. A distinction between anxiety and fear seems both possible and attractive, but is not ultimately sustainable. One possibility is to define fear as a realistic anxiety, an immediate response to risk or danger, and anxiety as a generalized non-immediate apprehension" (Hunt, 1999).

Anxiousness is a pervasive phenomenon employed in explaining typical as well as anomalous behavior. The contemporary time period is regarded as an era of anxiety owing to the increasingly changing societal values, growing environmental pressures, and adjustment difficulties as a result. Anxiousness can be defined as agonizing obnoxious feeling marked with prospective fear rather than guilty or regret feelings associated with some past event. Characterized with various expressions, it ranges from eustress (beneficial stress) to distress (which is pathological and clinical in nature).

Globally, anxiousness is the chief problem amongst the most widely recognized mental health issues in school going children and young adolescents (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003). The prevailing rates of anxiety problems extend from 4% to 29%, where an average ratio has been seen of 8% (Bernstein & Borchardt, 1991; Boyd, Gullone, Kostanski, Ollendick, & Shek, 2000; Kessler et al., 2005). In line with these studies, Saleem and Mehmood (2013) studied prevalence rates for emotional and behavioral problems among adolescents following a sample of 5053 school children.

Among all, the most frequently reported problem was anxiousness with a ratio of 16%. However these statistics may not be heavily relied upon because a lion's share of the young adolescents does not even reach the diagnosis stage owing to the internalizing nature of the problem; hence remained unreported (Tomb & Hunter, 2004).

An inverse relationship has been identified between anxiety and socio-emotional performance of children (Levitt, 1967). Although a certain amount of anxiety is essential for optimum level growth and performance but, at the same time, it may be extremely hard to detect the threshold where this desirable anxiety turns to be neurotic. It may be a matter of individual differences where each individual operates on his own bearable level of anxiety and regulates his routine activities accordingly. However, a pathological anxiety can be identified when an individual fails to cope with daily stressors and seeks clinical or psychological help. Such reactions to daily life hassles are largely shaped by psychological and biological dispositions of one's personality.

However, all important is that anxiety has been linked with significant deleterious impacts on adolescents' psychosocial and academic achievement (Essau, Conradt, & Petermann, 2000). Particularly damaging their interpersonal abilities (Albano, Chorpita, & Barlow, 2003; Weeks, Coplan, & Kingsbury, 2009) and leading them towards social isolation, negative self-evaluation, perceived social disapproval, and trouble building new relationships (Bokhorst, Goossens, & De Ruyter, 2001; Weeks et al., 2009). Moreover, school refusal, diminished critical thinking and management abilities, and lower scholastic accomplishment have additionally been noted as results (Donovan & Spence, 2000; McLoone, Hudson, & Rapee, 2006; Rapee, Kennedy, Ingram, Edwards, & Sweeney, 2005).

Although conceived as a global and universal phenomenon, childhood anxiety has emic and cultural manifestations as its unique circumstances and indications are affected by

sociocultural convictions and practices (Good & Kleinman, 1985; Guarnaccia, 1997). In India, the fundamental reported reason for adolescent anxiety is parental pressure and expectations for high scholastic and academic accomplishment (Deb, 2001). Similar is the case in Pakistan where the problem is more evident in secondary school level when adolescents have to appear in Class X examination, known as the Secondary Board Examination. Results of this exam are of fundamental significance as they determine the probability of further admission in their basic arear of interest with a competitive scope in the market. Medicine, Engineering and Management are the most favored disciplines because of the higher probability of prospective job insurance. In case of failure, a vast majority of students commit suicide each year (Planning Commission India, 2013) which underlines and explicates the gravity of the problem and the cost community has to abide.

Despite academic catastrophe, failure to adapt to the uncommon stress and strains in life may cause an agitation and psychological unrest inside the person. It is, in fact, the activation of behavior in the form of energy utilization during a nervous shift from parasympathetic to sympathetic control. This behavior or action then consumes the extra energy which is available and not being devoured. However, this consumption holds various expressions as some people have better problem solving abilities and handle such situations more insightfully than others. While others may come up with flight tendencies and look for escape from the acrimonious realities and seek asylum in self-inflicting behaviors i.e. smoking etc.

Thus, environmental pressures and adversities are vital to understand the trajectory of childhood and adolescent anxiety. Seiffge-Krenke (2000) established a link between significant life experiences, social support, peers and family connections, and psychological maladjustments including anxiety problems. Furthermore, twin studies have reported that adverse life events, after controlling for genetic factors, showed strong

associations with the onset and manifestation of anxiety symptoms (Eley & Stevenson, 2000); children faced more threatening events exhibited higher level of anxiety indicators than those exposed to less threatening events, illustrating that negative experiences/ events are significant indicator of youth anxiety. A well-established link has also been reported between stressful life events (i.e., socioeconomic adversity and chronic life adversity) and adolescent psychopathology (Copeland & Hess, 1995; Kim, Conger, Elder, & Lorenz, 2003; Neal & Brown, 1994; Weist, Freedman, Paskewitz, Proescher, & Flaherty, 1995).

Earlier studies have also postulated that a large number of unavoidable stressful events show a predictive link with youth anxiety, particularly in adolescent girls (Deković, Koning, Jan Stams, & Buist, 2008; Dornbusch, Mont-Reynaud, Ritter, Chen, & Steinberg, 1991; Kim et al., 2003; Swearingen & Cohen, 1985). For instance, Swearingen and Cohen (1985), following a cross-sectional design, concluded that secondary school children with greater number of adverse life experiences displayed more intense symptoms of negative affect and anxiety. Clinicians have also linked youth anxiety with parental psychopathology and emotional instability (Burstein, Ginsburg, & Tein, 2010; Strober & Carlson, 1982) along with other stressors of life.

Social withdrawal. Characteristically, adolescent psychopathology constitutes two broader types of impulse control; first is under-control in which individuals have poor or little control over their negative emotions and behaviors (e. g., aggression) and over-control which holds overly inhibited emotions and impulses such as social alienation (Mash & Barkley 2006). The later has been relatively less researched area in the course of developmental psychopathology hence needs theoretical as well as empirical consideration.

Social withdrawal can be defined in terms of continuous expression of a variety of solitary behaviors across social situations where they have to interact with peers that may be familiar or unfamiliar to the children (Rubin & Asendorpf, 2014; Rubin & Coplan,

2004). Some of the young adolescents may experience intense and acute feelings of estrangement and isolation during their efforts for autonomy and withdrawing from parental influence. They struggle to develop deep and closer relations with their peers and gradually move away from the protective and warm environment of home and family. If a child fails to form closer and healthy relationships with their peers for any of the reason, he is most likely to experience loneliness, being dejected, and withdrawal. However, being narcissist like all other children, he may deny accepting his failure and may increasingly become more withdrawn.

Characteristically, withdrawn children and adolescents mostly spend their time alone and not mix up with other children while playing. Even if they are in a social situation, they try to be in a corner or on the periphery because of their shyness, poor self-confidence, or social anxiety (Bowker & Raja, 2011; Katz, Conway, Hammen, Brenman, & Najman, 2011; Rubin, Bukowski, & Bowker, 2015). Notably, social alienation has expressed a stable pattern during childhood and often increases during adolescence (Hymel, Wagner, & Butler, 1990; Javed, Kundi, & Khan, 1992; Oh, et al., 2008; Rubin, Coplan, & Bowker, 2009).

In literature, social withdrawal has been referred to the extinction or loss of social ties with peers, friends, and different ecological systems. Socially alienated individuals have poor interpersonal networks and are less likely to participate in social gatherings. Studies have linked this pattern of behavior with a number of environmental factors e.g. continuous and prolonged maltreatment of children which in turn result in peer rejection (Bolger & Patterson, 2001) in school and other social settings. In another study (Shields, Ryan, & Cicchetti, 2001), researchers, using a sample of maltreated children, found a mediated link of parental maltreatment with children's negative and deleterious schemas of parents which, in turn, link to negative emotional regulation and likely social rejection.

Concisely, this study illustrates that children with adverse experiences i.e. emotional or physical maltreatment consistently show difficulty and inhibition in developing social and interpersonal abilities. For instance, they may react aggressively or misconstrue the behaviors of other children based upon their distorted cognitive frameworks. Irrespective of the trajectory of this psychopathology, these children are overly inhibited in developing and maintaining their relations in a healthy manner.

Researchers unanimously agree that the underlying factors behind social alienation are multiple extending from a lack of interest to involve with peers and other social relations to an apprehensive escape of social contact (Coplan, Gavinski-Molina, Lagace-Seguin, & Wichmann, 2001). A plenty of research demonstrates that early alienation from peers may result in socio-emotional consequences. It has also reported links with peer victimization (Dill et al., 2004; Estell et al., 2009) and aloneness (Cacioppo, Hughes, Waite, Hawkley, & Thisted, 2006; Hymel, Rubin, Rowden, & LeMare, 1990; Mahon, Yarcheski, Yarcheski, Cannella, & Hanks, 2006; Rubin et al., 2009), and has reciprocal relationship with peer approval and peer liking (Hart et al., 2000; Nelson, Rubin, & Fox, 2005).

Along with peer rejection, withdrawn adolescents also show perceived incompetence in a multitude of functioning areas (Hymel et al., 1990) such as prolonged strain in interpersonal relationships and peer-related adverse life experiences (Caldwell, Rudolph, Troop□Gordon, & Kim, 2004). However it does not necessarily mean that withdrawn children are socially aloof; in fact they might have leastwise one close friend which is usually maintained up to one academic year (Rubin, Wojslawowicz, Rose-Krasnor, Booth-LaForce, & Burgess, 2006). But, such friendships may possibly not be that much warm and cherishing as those of sociable children because withdrawn children lack self-disclosure and are, as rated by their peers, comparatively less fun loving and less

cooperative (Rubin et al., 2006). Summing up, withdrawn children and adolescents show interpersonal disengagements, social disapproval, peer victimization, low self-concept and poor quality relationships.

Somatic complaints. As previously discussed, adolescence, being a critical and transitional period (Nelson & Israel, 2003) is commemorated by multiple sources of life stress including school underperformance, family conflicts and dysfunction, fiscal hardships, and authoritarian communal norms etc. Exposure to these stressors, if not handled rightly, can have a negative impact on adolescents' health and may jeopardize them for frequent physical and psychological symptoms (Naz & Kausar, 2012; Kazdin, 2000; Murberg & Bru, 2007; Torsheim & Wold, 2001). In fact, frequent and repeated exposure to stress may direct towards manifestation of psychosomatic symptoms (Rehna, Hanif, Laila, & Ali, 2016) such as headache (Aaseth et al., 2011; Cathcart, Winefield, Lushington, & Rolan, 2010), gastrointestinal complaints (Konturek, Brzozowski, & Konturek, 2011; Surdea-Blaga, Baban, & Dumitrascu, 2012), palpitation (Humaida, 2012) and other bodily pains particularly in children and adolescents (Greene & Walker, 1997). But these symptoms are seldom linked with organic disorders rather an expression of the incapability to discern and regulate one's own emotions (Gross, 1998). However these symptoms, at the same time, are crucial clinical warnings, which may sustain into adulthood, herald subsequent mental illness (Dhossche, Ferdinand, van der Ende, & Verhulst, 2001), and result into blind consultation of health care services. Research has also shown a greater tendency of experiencing stress and subsequent somatic complaints for females as compared to males (Ihlebaek, Eriksen, & Ursin, 2002; Kroenke & Spitzer, 1998).

Feelings of rejection. Perceived or actual social rejection can be defined as a dyadic interaction between the recipient and the perpetrator (McDougall, Hymel,

Vaillancourt & Mercer, 2001) where the recipient perceives disliking and hatred by others (Dodge et al., 2003). With the increasing emphasis of literature on interpersonal relationship, the phenomenon of social approval has become more significant in the context of psychological and social wellbeing (McDougall et al., 2001). Researchers have unanimously agreed that perceived disapproval or feelings of being rejected by other may be linked with an array of conduct and emotional disruptions (McDougall et. al., 2001). For example children with perceived social rejection may have high probability of comorbid problems i.e. aggression, social alienation, and a wide variety of academic difficulties (Osterman, 2000).

Furthermore, literature has also established a link between experience of multiple life adversities and perceived social rejection i.e. peer victimization and self-respect in a social scenario (Hawker & Boulton, 2000). Researchers have observed a strong association between peer victimization, negative evaluations of others' intentions and perception of being rejected during the course of societal interactions (Bond, Carlin, Thomas, Rubin, & Patton, 2001; Hodges, Boivin, Vitaro, F., & Bukowski, 1999; Rudolph, Troop-Gordon, & Flynn, 2009). A cohort study has also endorsed these findings by predicting feelings of social rejection among school children who experienced peer victimization two year earlier (Hanish & Guerra, 2002; Javed et al., 1992). These studies provide empirical base for hypothesizing that experience of adverse life events may lead adolescents to develop feelings of social rejection as a consequence.

Aggression. Various perspectives have defined aggression as a multi-faceted phenomenon (Farmer, 2007) with a specific focus on clinical expression of the behavior (Morphet et al., 2014). This behavior is of particular importance in the field of forensic psychology which deals with the manifestation of serious or vicious crimes and violation of social norms (Dahlen, Martin, Ragan, & Kuhlman, 2004; Jacob & Holmes 2011; Ryan &

Peterson, 2004). More particularly of adolescence time period, aggressive behaviors have grabbed a central attention of psychiatrists because this emotionally charged and loaded population seriously lack the ability to regulate and control their hostile instincts (Cunningham, Johnson, Gatenby, Gore, & Banaji, 2003). Aggression among adolescents or school aged children has become a global concern because of its vile and destructive nature which poses serious threats to the adolescents themselves and the society as well (Hassan, Osman, & Azarian, 2009; Mercy, Krug, Dahlberg, & Zwi, 2003; Powel et al., 2011; Wang, Iannotti, & Nansel, 2009).

'Aggression' is an umbrella term which bears all the harmful acts such as interpersonal conflicts, physical or verbal damages to other people, destruction of property, and non-compliant behaviors (Elinoff, Chafouleas & Sassu, 2004). Furthermore, it carries the elements of inflicting pain or harm to others which may have cognitive as well as behavioral manifestations (Fishbein & Ajzen, 2010; Lyznicki, McCaffree & Rabinowitz, 2004). Typology of aggressive behaviors has a multi-dimensional dichotomies described in the traditional literature of aggressive behaviors. The most common are direct (which is committed while the target is present in the situation) vs. indirect (this type of aggression is committed in the absence of the victim i.e., passing sarcastic remarks about him, mislabeling, and ascribing fake stories about him to destroy his social standard), affective (it includes the hostile intentions, negative emotions, feelings of hatred, and impulses raised by anger with an intention to harm the target person) vs. instrumental (the perpetrator holds some interest-based provocations against the target instead of inflicting harm), verbal (a hostile tendency to attack and damage the self-concept of others through communication) vs. physical (constitutes of physical attacks and harmful threats towards others through overt actions e.g., hitting, kicking, biting, using weapons, and breaking toys or other possessions), and proactive (it is based upon a planned behavior to attain some

goal without being hostile or violent), vs. reactive aggression (this act of aggression is manifested in response to provocation or an alleged or actual peril); which have repeatedly been discussed in the literature (Anderson & Huesmann, 2003; Fernández, Rodríguez, & Gibbs, 2013; Koolen, Poorthuis, & van Aken, 2012).

Adolescents' aggressive behavior, in any of the aforementioned expression, results from a complex interplay between individual forces, environmental units such as family or school, as well as culture on a broader level. However, the exact identification of the objectives and intentions behind such hostile acts is a difficult and challenging task. There may be many including social imitation or social interaction (Shaver & Mikulincer, 2011) maladaptive peer relation (Malti, 2006; Shujja & Atta, 2011), as well as experiences of frustrating or adverse life events (Haller, Harold, Sandi, & Neumann, 2014; Liu, Raine, Venables, & Mednick, 2004; Liu & Wuerker, 2005; Shaver & Mikulincer, 2011). Longitudinal studies have also displayed a predictive link between adverse life experiences and aggressive and delinquent behaviors later in life (Allwood, Baetz, DeMarco, & Bell, 2012; Flouri & Kallis, 2011; Lee, Storr, Ialongo, & Martins, 2012; levers-Landis, Greenley, Burant, & Borawski, 2006; Lloyd & Turner, 2008; Overbeek, Vollebergh, Engels, & Meeus, 2005).

Moderating Role of Cognitive Factors and Personality Traits

Studies have also explored a wide variety of the responses that young people elicit when experiencing traumatic events of same nature, same magnitude, and the same intensity of the stress associated with the events (Rutter 1993, 2006, 2007) depending upon their mental and cognitive abilities, thought patterns, and personality factors. A few researches have particularly focused the factors that can cushion the negative impact of environmental risks on children's mental health. One such protective factor or adaptive

resource is cognitive abilities (Maddi 2005; Masten, 2001) i.e., verbal and nonverbal intellectual abilities.

Cognitive abilities. The terms "cognitive ability" and "intelligence" have been very frequently used as interchangeably in the literature of cognitive psychology (Singh-Manoux, Ferrie, Lynch, & Marmot, 2005). A group of 52 experts defined it as "a very general cognitive capability that, among other things, involves the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly, and learn from experience" (Gottfredson, 1997). Literature examining the association between cognitive ability and mental health has persistently focused the role of general intelligence (Deary, Whiteman, Starr, Whalley, & Fox, 2004; Gottfredson, 2004; Gottfredson & Deary, 2004; Whalley & Deary, 2001) and has been referred it to as the ability to deal with cognitive complexity (Gottfredson, 1998). Keeping in view these studies, the present study used the term verbal intelligence as verbal cognitive ability.

The construct of cognitive ability has a complex nature as various researchers have postulated various models to explain the phenomenon. These theories describe specific intellectual abilities (Sternberg, 2003) under the umbrella term of 'cognitive ability/ intelligence' in terms of crystallized ("individual's ability to reason, form concepts, and solve problems using unfamiliar information or novel procedures") and fluid intelligence ("include an individual's acquired knowledge, the ability to communicate one's knowledge, and the ability to reason using previously learned experiences or procedures"; Horn & Cattell, 1966) or verbal and nonverbal abilities. Broadly speaking, the term cognition refers to the ability of an individual to successfully perceive and respond beck to his environment. Cognitive abilities can be defined as the brain-based abilities that any individual applies to accomplish any task ranging from simplest to the most complex. They further involve the mechanisms of attention, learning, memory, problem-solving, and decision making (Deary,

2012). These cognitive abilities have been identified to draw specific linkages with the academic performance (Bratko, Chamorro-Premuzic, & Saks, 2006; Chamorro-Premuzic, & Furnham, 2008; Di Fabio & Palazzeschi, 2009; Laidra, Pullmann, & Allik, 2007; Smrtnik Vitulić, & Zupančič, 2011) and future progress (Furnham & Chamorro-Premuzic, 2004) among school aged children. These cognitive abilities within school population can be understood and captured with the help of verbal and nonverbal intelligence tests which allow us to assess these abilities in a more accurate and standardized manner across educational as well as clinical settings.

Verbal cognitive abilities. The capacity to utilize dialect to carry out specific tasks is called verbal cognitive ability (Cianciolo & Sternberg, 2004). Otherwise stated verbal cognitive ability is the capacity to interpret information and solving problems by the application of linguistic abilities (Logsdon, 2010). Verbal intelligence constitutes of the ideas that may be concrete as well as abstract based upon linguistic knowledge i.e. vocabulary, verbal reasoning, or Information (Ambreen, 2011; Hussain, 2000; Logsdon, 2010) etc. However, verbal knowledge may likewise be characterized as interpersonal and communicative skill of knowing the dialectic code, as well as the understanding about the appropriate settings in which any idea can be expressed in the most appropriate manner and to the most relevant person.

Nonverbal cognitive abilities. Nonverbal intelligence comprises of a wider collection of reasoning capabilities involving spatial abilities, and artistic abilities such as painting, sketching, diagrammatical reasoning as well as ability of abstract level reasoning. It further contains the higher order mental abilities such as making choices for decisions and inferences depending upon the available pieces of information either factual or fictional. Extending further, making comparison and contrast of diagrams such as identifying similarities and differences, identifying a missing pattern in a sequence or

completing the diagrams with the most suitable shape are some of the activity based exercises which are frequently used to assess nonverbal intellectual abilities. Some mathematical expressions and aural exercises involving matching and differentiating non-phonetic sounds and certain type of deductive reasoning may also be regarded part of nonverbal intelligence or cognitive abilities.

The term nonverbal cognitive ability, at times, is also coined with the concept of fluid intelligence which is an explicit cognitive mechanism and occurs in a more systematic and controlled manner (Logsdon, 2010). It applies cautious and defined modes for solving problems and making inferences beyond the usage of language. Similarly, in daily life activities, even though verbal expression is the ultimate mode of communication and nonverbal cues seem to be of little significance; people have prompt and bombarded expressions of nonverbal sources including emblems, gestures, postures, facial expression, eye contact and gaze which facilitate as well as compliment the verbal message. In fact, nonverbal intelligence is much more frequently and more readily used than that of verbal intelligence.

Cognitive literature clearly indicates that intelligence quotient (IQ) is a standardized tool of assessing intelligence which covers a wide variety of cognitive abilities (McCall, 1977). Across the whole span of life, IQ is commonly regarded as consistent and stable with high predictive validity; that is to say that one time-point scores of IQ anticipate education and career success in later years of life (McCall, 1977). Simultaneously, researches have tried to know any unexpected variations in the course of IQ stability with respect to brain development. Ramsden et al. (2011) identified strong association with the longitudinal fluctuation of verbal as well as nonverbal cognitive abilities with the prospective changes, maturation and growth of brain structure. In an amalgamation of structural and functional tomography of brain, they revealed that verbal and nonverbal

intelligence drew distinctive association with the grey matter area in the brain which showed different type of activity while performing verbal tasks i.e. speech and nonverbal tasks i.e. finger movements etc. Shunning many of the individual variation in brain functioning which might confound the findings as reported by numerous cross-sectional studies; Ramsden et al. (2011) followed a longitudinal design which helped them in dissociating specific verbal and nonverbal neural connections.

The neuropsychological operations, associated with intellectual development (particularly related to verbal intelligence) and growth, emerge at the early age in childhood and continue to become specialized and mature with the acquisition of new experiences, interpersonal communication and interactions, and school learning (Finkbeiner & Coltheart, 2009). The interplay between these psychosocial forces makes the whole process multifarious and complex one. However, written abilities are acquired relatively in later childhood period and remain a continuous growth process during adolescence and adulthood as the new knowledge and abilities are assimilated. The development of overall intellectual abilities is furthered or hampered by a variety of contextual factors i.e. physical and psychological health, family relations, socioeconomic resources, academic status and circumstances, stimulation in the environment and language development as well (Ambreen, 2014; Marturano, 2006; Noble, Farah, & McCandliss, 2006).

Cognitive or intellectual abilities have been theorized and explicated under various perspectives; however little attention has been paid to understand their function in adolescent psychopathology or adverse life experiences. At the same time, the literature of developmental psychopathology has always put a question mark on the variability of reactions to traumatic events that why some children are more resilient, better withstand to life adversities, and turn into more healthy and adjusted people than those who become

emotionally disturbed (Luthar & Zigler 1991; Masten, 2001). Answering this question, researchers have identified some of the factors that may serve a positive function in the face of adverse life experiences which may be intrapersonal qualities, family characteristics, as well as ecological factors (Garmezy & Rutter, 1983; Greenberg, 2006; Luthar, Cicchetti, & Becker, 2000; Luthar & Zigler, 1991; Maddi, 2005; Masten, 2001; Werner, 2000). At the intrapersonal level, intellectual competence such as verbal and nonverbal cognitive abilities serve a key role in cushioning the negative impact of adverse life experiences and subsequent psychopathology in children and adolescents (Pineand & Freedman, 2009).

Particularly, literature has identified the protective role of nonverbal cognitive ability; suggesting that moderate to high level of this skill plays a vital role in minifying the adverse impact of life events on mental health of adolescents (Grant et al., 2006; Masten, 2007). This association may be rooted in cognitive reserve hypothesis which assumes that "high premorbid intelligence, education, an active, stimulating lifestyle, or a physically larger brain provide reserve capacity which protects the individual from the negative effects of aging and disease on brain function." In line with this postulation, empirical evidence proclaims that cognitive abilities (using reserved capacity of brain) not only prevent mental illness or psychopathology (Koenen et al., 2009; Pine & Freedman, 2009; Stern, 2002) but also promote a solution focused approach whenever an adverse situation or stressor is heightened (Fergusson & Lynskey, 1996; Masten et al., 1999). Another study (Flouri, Mavroveli, & Tzavidis, 2011) has tried to explain the mechanism or pathway through which cognitive ability draws its links with stress and developmental psychopathology. Based upon top-down processing theory of emotional regulation or dualism perspective, Flouri et al. (2011) drew a notion that executive level cognitive functioning in humans govern and regulate their lower-order behaviors and emotional

responses. The cognitive ability, thus, exerts its effects via emotional regulation to palliate the asperity of traumatic events on mental health or developmental psychopathology.

In a wider perspective, researches have attempted to the pattern of association between stressful life experiences and resultant psychopathology in intellectually disabled children (Hastings, Hatton, Taylor, & Maddison, 2004; Martorell et al., 2009; Tsakanikos, Bouras, Costello, & Holt, 2007). Findings of these studies that experiences of traumatic life events multiplies the odds of psychopathology manifold; such as victimization of cyber-bullying was observed to be related with abbreviated self-esteem as well as a greater level of depressive symptoms (Didden et al., 2009). Using general populations, some studies (i.e., Cooper, Smiley, Morrison, Williamson & Allan, 2007; MacHale & Carey, 2002) observed this possibility that individuals with poor cognitive abilities have higher probability of experiencing more negative events e.g. sexual abuse and resultantly suffer from more psychological illness than those with better cognitive abilities.

Regarding overall cognitive abilities, a strong moderating effect has been observed in the association between contextual risk i.e. adverse life events or familial adversities and subsequent emotional and conduct outbursts (Breslau, Lucia, & Alvarado, 2006; Fergusson & Lynskey, 1996). For instance, Masten et al. (1999) found in their study that general cognitive ability significantly dampened the effect of traumatic stress on sociopathic behavior. More recently, nonverbal cognitive skill has been reported as a key intrapersonal source that serves as a cushion for emotional and behavioral difficulties in face of heightened stress (Flouri & Panourgia, 2011; Flouri & Panourgia, 2012). Nonverbal cognitive abilities have been referred to as reasoning abilities that involve the processes of thinking, planning, ability to make appropriate decision choices, cognitive appraisal, ability to synthesize, perceptual and visuospatial abilities, and problem solving approach which, at one point or other, are the prerequisites to successfully cope with

routine life hassles or more stressful or adverse experiences of life (Eysenck & Keane, 2005; Medin, Ross, & Markman, 2001; Plomin & Kovas, 2005).

However, not only the poor cognitive abilities but other cognitive deficits such as maladaptive cognitions or thought pattern may also play a vital role in explaining the variation of reactions to adverse life experiences. Therefore the present study also endeavored to further knowledge on life stress and psychopathology with reference to these thinking distortions as well.

Cognitive errors. Each individual makes evaluations and interpretations (not necessarily by a decision maker) regarding the contextual meanings of experiences and perceived events in his environment, set goals of life, and ascribes meanings to his own and others' actions. Such interpretations and act of attribution have a complex interplay such as judgments regarding the social world activate the formation of cognitive beliefs (relatively enduring in nature) as well as values, which subsequently prospective social evaluation about those beliefs, values and conduct as well. Behavior is then acquired through the assimilated knowledge based upon the beliefs about social world and the motivating values behind those beliefs. However, when these beliefs or values become biased or illogical somehow, they result into biased and irrational behaviors and this can result in irrational and imprudent justifications of one's actions as well (Ward, Gannon, & Keown, 2005). These irrational beliefs and justifications have been referred to as cognitive distortions or errors in the literature of psychopathology. An abundant of research has studied cognitive distortions from various theoretical explanations with respect to internalizing/ externalizing or emotional/ behavioral difficulties. Literature has characterized these errors into two broader classifications; self-debasing cognitive errors and self-serving cognitive errors which are

Self-Debasing cognitive errors. As the name implies, these thinking errors are self-degrading or self-negating in nature. Such cognitive distortions usually appear as a result of individual's faulty and ineffective information processing owing to their erroneous and inconsistent pattern of thinking which makes their judgments negatively biased towards their own selves. Beck (1967) postulated a theoretical model regarding maladaptive reflexive thoughts which explicate the fundamental falsified and 'depressogenic' cognitive pattern about one's own self, the external world, and the future. Instead of being ego and self-protecting against one's misdeeds, these cognitive errors erroneously degrade the self directly or indirectly which ultimately lead to self-harm.

Beck proposed taxonomy of cognitive variables and characterized cognitive elements into three major domains: "dysfunctional schemas, cognitive distortions/ errors and automatic negative thoughts." The dysfunctional schemas are basically the fundamental beliefs which are strongly embedded in individual's mind and serve as the basement for distorted evaluations of the external environment and events. Cognitive errors can then be described as those actual procedures or mechanisms through which these biased judgments are made while negative automatic thoughts refer to the outputs of cognitive errors in misinterpretations of the world. Collectively this cognitive triad leads to many kinds of emotional as well as behavioral manifestations in children and adolescents.

These self-degrading thinking distortions have also been described as erroneous or unrealistic beliefs in rational-emotive therapy proposed by Ellis (1977) and as an inclination to ascribe negative experiences or events to more global, internal and consistent factors in learned helplessness theory (Abramson, Seligman, & Teasdale, 1978). Other studies have postulated a strong link between self-debasing thinking distortions and emotional/ internalizing symptomatology (e.g., anxiousness or negative affectivity) among children and adolescents (Quiggle, Garber, Panak, & Dodge, 1992).

Literature shows that emerging researches are increasingly focusing on the examination of cognitive vulnerability in the development and manifestation of childhood and adolescent psychopathology; particularly with reference to maladaptive cognitive distortions (Ara, 2016; Leung & Poon, 2001; Pereira, Barros & Mendonça, 2012; Rehna & Hanif, 2012; Rehna, Hanif, & Tariq, 2012; Weems, Berman, Silverman, & Saavedra, 2001; Weems et al., 2007). As self-debasing cognitive errors erroneously degrade the self hence leading to internalizing suffocation and emotional outburst. Beck (2001) proposed a wide range of maladaptive thoughts; four of which (selective abstraction, overgeneralization, Catastrophizing, and personalization), have been studied extensively in the literature in hand (Leung & Poon, 2001; Leung & Wong, 1998).

Selective abstraction (stimulus focused). This type of cognitive errors stems from attentional limitation beyond the conscious awareness of the individual with a particular focus on negative stimuli. This form of biased thinking more readily attends towards threat and negativity to escape undesirable outcome. More comprehensively, an individual with selective abstraction sort of thinking has an inclination to draw conclusions about some specific event or stimulus or behavior just on the basis of a single minute detail and disregarding all other contrary information which has more evident and salient features of the situation (Beck, 2011). It just focuses on the disappointing aspects of any situation i.e. "I ruined the whole recital because of that one mistake."

Overgeneralization (response focused). This is a response based thinking pattern which has a tendency to extract a thought or conclusion on the basis of one single or specific experience and apply that rule to all other similar or dissimilar events in quite an irrational and indefensible fashion (Maric, Heyne, van Widenfelt, & Westenberg, 2011). In other words, a unique negative experience is regarded as the archetype of every prospective event i.e. "one bad day at school means school will always be awful."

Catastrophizing. This type of thinking error holds the characteristic of being overly possessed with the worst possible outcome in any hypothetical situation. The individual picks one event he is concerned about and amplify it to the extent that he becomes anxious or phobic. He expects that the prospective situation is going to be adversely dangerous, such as "if it rains there will be a flood Thus" or "I know when I meet the regional manager; I'm going to say something stupid that will jeopardize my job."

Personalization. Personalization is a strong propensity to take the responsibility of any negative event in the environment which may or may not be related to the individual and making it so meaningful for one's self. Being negatively biased towards one's self, this thinking distortion is characterized with the process of ascribing control of negative outcome to more internal and stable cause (Beck, 2011) e.g., "It always rains when I am about to go for a picnic" or "my team lost the game because of me."

Ascription of personalization may well be learned as it gives an illusionary control over arbitrary menacing events. This state of illusion may possibly carry a sense of power to control a chance-determined negative situation and gives the person a belief that he has controlled the environment. This perceived control may lead to a perception that the person can prevent any damage to such threatening events in the prospect (Langer, 1975). Self-blame also contributes to self-satisfaction that the person has avoided attacking on others hence others will also avoid the same (Gilbert, 1998).

As reported earlier, maladaptive cognitive errors are the core component of Beck's (1967) cognitive vulnerability hypothesis. This model (Abramson et al. 1989; Beck 1967; Beck, 2011) postulates that cognitive content i.e. thinking distortions are likely to place a person at higher risk for developing emotional reactions, such as anxiety and depression, particularly, when an environmental stressor is salient. These cognitive errors are characterized by a negative bias in the interpretations of events which are not based on

reality. Even in those cases where there is a more realistic basis for these interpretations, the repetitive nature and the self-deprecating and extremely negative content, causes them to have a significant negative impact on the thoughts, emotions and behavior of individuals, affecting their well-being and adaptive functioning. According to Beck's cognitive model, these cognitive errors are the result of relatively stable negative cognitive schemas, formed during childhood, which guide how information and events are interpreted.

Intellectual papers of Beck and his colleagues suggested that there are people having a strong propensity to amplify the importance of adverse life events by self-blaming and taking the responsibility of that events with an over application of that event and assuming a worst case scenario as an outcome (Beck, Rush, Shaw, & Emery, 1979). These interpretations or malfunctioning thinking errors are regarded subjective and biased in a sense they are irrational and unrealistic conclusions which magnify the negative aspects at the cost of positive or obscure information. A wide range of literature has established strong associations between maladaptive cognitive distortions and internalizing problems such as anxiety, depression, somatic complaints or withdrawal tendencies in children and adolescents (Bridwell, Steele, Maurer, Kiehl, & Calhoun, 2015; Kingery, Ginsburg, & Burstein, 2009; Maric et al., 2011; Rehna et al., 2012; Schwartz & Maric, 2015; Stevanovic et al., 2016; Weems & Watts, 2005).

This model also proposes that the content of these cognitive schemas is different in depressed individuals as compared to anxious individuals. More specifically, depressed individuals selectively attend and process negative information and minimize positive information, while anxious individuals selectively attend and process information related to threat and personal vulnerability. Emerging studies have shifted their attention from depression to anxiety by examining biases in different stages of information processing –

attention, interpretation and memory – and how these different biases interact to maintain high anxiety among children and adolescents (Daleiden & Vasey, 1997; Muris & Field, 2008; Watts & Weems, 2006). Relatedly, Kendall's (1985) cognitive theory proposes that pathological anxiety results from the chronic hyper-activation of schemes related to personal vulnerability and danger. This hyper-activation would lead individuals, when faced with some kind of threat, novelty or ambiguity, to direct their attentional and processing resources to the information relevant to the threat, resulting in different cognitive distortions. These cognitive distortions would in turn lead to maladaptive thoughts and behaviors.

Contrarily, up till now, only two researches using community samples of adolescents have identified a link between these cognitive errors and adolescents' externalizing symptomatology. Based on self-report measures on general population Leung and Wong (1998) revealed that the level of negative cognitive distortions was comparatively high among adolescents with internalizing symptoms and comorbid problems than those of having externalizing problems or those in control groups. These findings were later replicated by Epkins (2000) with the same results. Though both of the studies have established a distinction between internalizing and externalizing symptoms with respect to cognitive errors but each study has followed community sample from general population which is commonly perceived to have minimum risk of psychopathology. None of the studies have yet focused at risk community samples for establishing these distinctions.

Self-serving cognitive errors. "Self-serving cognitive distortions are inaccurate or rationalizing attitudes, thoughts, or beliefs concerning one's own or other's social behavior and inaccurate ways of attending to or conferring meaning on experience" (Barriga, Landau, Stinson, Liau, & Gibbs, 2000). The role of maladaptive cognitive errors in the

formation and expression of developmental psychopathology has been widely researched with specific linkages to both emotional as well as behavioral outcomes. Barriga, Gibbs, Potter, and Liau (2001) were the pioneers who coined the term "self-serving cognitive errors" to explain the manifestation of externalizing psychopathology among children as well as adolescents. Relevance of these distortions to externalizing problems or sociopathic behaviors has been explained through numerous theoretical standpoints; most important of those is social information processing model (Crick & Dodge, 1994) which assumes that self-serving cognitive biases result from the biased processing of the incoming information in the mind which distorts the reality and lead to rationalizing behaviors. Gibbs, Barriga, and Potter (2001) devised How I Think Questionnaire (HIT-Q) in order to assess self-serving cognitive errors on the basis of four-category taxonomy given by Gibbs and Potter (1992).

Self-centeredness. Self-centeredness is a distorted thought pattern in which the person centers upon his own opinion, motives, desires, moods, and beliefs to the extent that he hardly regards the perspectives and feelings of others. In other words, to fulfill his own wishes and satisfy his own needs, the person scarcely respects the rights and emotions of others.

Blaming Others. Blaming other is the second important thinking distortion which is characterized with a strong propensity of ascribing blames for one's misdeeds and hurtful acts to the external sources particularly to other individuals, a group of people, or a temporary anomaly (such as being in a bad mood). It may also be defined as attributing one's own biased or misattributing blame for one's exploitation and victimization to fate or other innocent people (i.e. external locus of control).

Minimizing/Mislabeling. Minimizing is a tendency to rationalize one's misconduct as obligatory to attain specific target while mislabeling is dehumanizing others by passing

sarcastic remarks. Characteristically this thinking distortion portrays or depicts an illegal or sociopath action as justified, socially acceptable, and even commendable. Moreover an individual holding this thinking pattern gets evil satisfaction by belittling and humiliating other people.

Assuming the Worst. This is an erroneous inclination to superfluously ascribing hostile objectives and intentions to other people by assuming the vilest outcome about any environmental context declaring it inevitable, or believing that there is no probability for improvement in his own or other's social behavior.

These four categories of thinking distortions are further classified into two broader domains named as primary distortions and secondary distortions. Self-centeredness is the primary cognitive distortion characterized by ego centric schemas, beliefs, and attitudes (Gibbs, Potter, Barriga, & Liau, 1996). The rest three (blaming others, mislabeling, and assuming the worst) are secondary cognitive errors. Stemming from the egocentric biasness, self-centeredness is, however, present to a certain degree in all individuals including the responsible adult ones. This might be because of more direct experiences of our own thinking and ideas whereas; we process others' perspectives and opinions in a more indirect manner (Flavell, Miller, Miller, 1993). Nevertheless, this ego centric distortion usually tends to wane with the growing age. Primary thinking errors, originating from egocentrism, are more frequently prevalent in children and young adolescents which is a stage of pre-conventional and immature moral development (Barriga et al., 2001). Once a child or an adolescent is indulged in some sort of transgression, he is more likely to experience psychological distress associated with the feelings of guilt and a negative self-image. Thus, the secondary type of thinking errors (blaming others, assuming the worst, and minimizing) start emerge which help the child to diffuse the ladened guilt and negative feelings; justify the act of transgression, and reinforce him to keep that act continue.

Importantly, these secondary errors may be pre-transgression as well as post-transgression justifications to knock off the self-reproaching thoughts after committing an offense (Barriga & Gibbs, 1996; Barriga et al., 2000; Gibbs, Potter, & Goldstein, 1995; Liau, Barriga, & Gibbs, 1998; Palmer, 2003).

The trajectory of thinking errors depicts that being engaged in any evildoing or aggressive behavior may lead a person to become abashed or remorseful of his misconduct, which directly distorts his belief of being a civilized and good person by nature. This state of conflict raises a sort of cognitive dissonance within the individual which pushes him to apply secondary level cognitive errors to alleviate this frustration or discomfort. As these maladaptive cognitions curtail or completely erase the feelings of self-blame thus guard him against this emotional load. More importantly, where this cognitive pattern guards the person against a negative self-interpretation, it, at the same time, also permit rather elevate aggressive behavior and develop a sense of contentment instead of shame, sorrow, or empathy with the victim (Barriga et al., 2000). As self-debasing thinking errors show closer association with emotional problems; self-serving cognitive errors draw associative pattern with externalizing or behavioral symptomatology (Barriga et al., 2000) such as delinquent or sociopathic conducts (Andreu, Peña, & Loza, 2013; Barriga & Gibbs, 1996; Barriga et al., 2000; Barriga, Sullivan-Cosetti, & Gibbs, 2009; Capuano, 2011; Plante et al., 2012; Van der Velden, Brugman, Boom, & Koops, 2010). Koolen et al .(2012) further extended these findings and postulated that cognitive distortions do not necessarily work in isolation but they also interact with the relatively permanent and enduring personality traits of individuals and jointly explain psychopathology among adolescents. To understand this complex mechanism, the present study further planned to explore the role of big five personality traits in studying the effects of adverse life experiences and adolescent psychopathology.

Personality Traits. Personality traits are considered as endogenic temperamental characteristics which are biologically determined and remain relatively permanent and stable over time. It was assumed for long that personality is shaped during early years of life and is completely developed by no more than 30 years of age (McCrae & Costa, 1994). Contrarily, later researches argued that average level of changes in personality development is still possible during midlife or elderly period of one's life. The last few decades have tremendously further our knowledge regarding personality traits and have been defined from a multidimensional angle i.e. involving cognitive patterns, affective elements and conduct styles (John, Naumann, & Soto, 2008). Scholars have unanimously agreed to three central points i.e. personality structure (the way particular conduct styles are grouped and organized under umbrella traits), personality development (the way personality characteristics may shape and change in the span of time), and the way personality dimensions impact various important arenas of one's life (Caspi, Roberts, & Shiner, 2005). A major part of this personality literature has primarily focused adult age reflecting personality as more grown up psychological aspect (Caspi, et al., 2005). However, emerging literature has started putting emphasis on personality development in children and adolescents as well. These studies have tried to applied the structure of adult personality to youth theorizing that personality traits of children and adolescents are structured in an orderly manner (Soto & John, 2014; Tackett, Krueger, Iacono, & McGue, 2008; Tackett et al., 2012) similar to that of adults (Soto, John, Gosling, & Potter, 2008; Tackett et al., 2012). Despite a variety of labels assigned for personality traits, a large body of literature provides support for 'Big-five' model of personality propose by McCrae and Costa (1987) discussed as under.

Neuroticism. Neuroticism can be best described as the propensity to attend negative feelings and low affectivity more readily such as annoyance, anxiousness, melancholy and

susceptibility (Jeronimus, Riese, Sanderman, & Ormel, 2014). Neuroticism additionally indicates to the level of 'emotional stability' and controlling basic impulses and is usually defined as being on low pole of both traits thus named as emotional instability. An emotionally stable personality carries higher need of consistent and positive emotional expression whereas an emotionally instable hold lower level of this need being nervous, insecure, and volatile in nature (Toegel & Barsoux, 2012). They react sincerely to occasions that would not influence a great many people, and their responses have a tendency to be more extreme than ordinary. They will probably translate normal circumstances as debilitating, and minor dissatisfactions as miserably troublesome. Their negative affective responses tend to persevere for abnormally drawn out stretches of time, which implies they commonly hold this terrible temperament (Norris, Larsen, & Cacioppo, 2007). These issues in emotional appraisal can reduce a neurotic capacity to think positively, being decisiveness, and to deal with stress or aversive stimuli efficiently (Norris et al., 2007).

Moreover, individuals with high scores on neuroticism more frequently experience dissatisfaction with their lives and have an inability to deal with this discontentment which likely produces the symptoms clinical depression (Caspi, Roberts, & Shiner, 2005). Similarly they show higher tendencies of experiencing stressful situations which further aggravate their level of neuroticism (Jeronimus, Ormel, Aleman, Penninx, & Riese, 2013; Jeronimus, Riese, Sanderman, & Ormel, 2014) and resultantly they have been observed to develop different types of internalizing (i.e., anxiousness, social withdrawal, or negative affect) and externalizing behavioral problems (Ehrler, Evans, & McGhee, 1999; Muris, Meesters, & Blijlevens, 2007; Van Leeuwen, Mervielde, Clercq, & De Fruyt, 2007). On the other side, individuals with lower degree of neuroticism are less likely to get disturbed and

emotionally reactive and tend to experience more positive emotions which are characteristics of extravert people.

Extraversion. Extraversion can be referred to individual's marked involvement with the outer world and characterized by brim of energy, sociability, enthusiasm, excitement for new opportunities, and frequent experience of positive feelings (Laney, 2002; Toegel & Barsoux, 2012). In gatherings they jump at the chance to talk and being influential they remain the focus of attention (Olakitan, 2011). However, an exaggerated degree of extraversion is associated with an inflated need of attention and authoritarianism (Toegel & Barsoux, 2012). On the other continuum of extraversion, stands a personality (referred to as introvert) which has an intelligent, self-restrained, withdrawn, and at times apprehended identity. Introverts are deficient in the level of enthusiasm, vitality, and activity than those of extraverts. They typically propend to be quiescent, subdued, cautious, and detached from the outer world. However, these traits do not necessarily mean that they are shy, under-confident, or depressed; they just have a minimum need of stimulation, they like to be alone contrary to extraverts and are more autonomous and self-regulated than extraverts (Rothmann & Coetzer, 2003).

By and large, there are at least three fundamental attributes of extraversion that make it imperative to research on. In the first place, extraversion has egressed as one of the key attributes of personality (Costa & McCrae, 1992; Goldberg, 1990). Intrinsically, extraversion can potentially explicate the variation of a broader range of behaviors and conducts which is the core concern of personality psychology (Funder, 2001). Next, extraversion trait is a strong predictor of well-being, healthy adjustment, and efficient work execution across a wide array of functioning spheres (Ozer & Benet-Martinez, 2006) ranging from cognitive execution (Matthews, 1992) and social strives (Eaton & Funder, 2003) to socio-economic standards (Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007).

Thirdly, extraversion is also linked with menace as well as resilience against a variety of psychopathologies (Widiger, 2005).

Defining on three fundamental psychological domains, researchers suggest that extravert people have persistently been observed to experience more positive moods (Affective domain; Costa & McCrae, 1980; Lucas & Baird, 2004) with an average correlation of r = .40 (Lucas & Baird, 2004), have a relatively brighter and positive perspective about the environment assigning positive valence and positive interpretation to the neutral situations (Cognitive domain; Uziel, 2006), and thus are more sociable, more talkative, and more energetic than those with lower level of this trait (Behavioral domain; Mehl, Gosling, & Pennebaker, 2006). Furthermore, lower level of extraversion is discovered to be associated with different forms of psychopathology i.e., personality disorder (Widiger, 2005), anxiety, depression (Jylha & Isometsa, 2006), and many other disorders (Costa & Widiger, 2002; Markon, Krueger, & Watson, 2005).

Agreeableness. Agreeableness is a propensity to be empathetic and accommodative instead of being distrustful and hostile towards others. It is likewise the degree of one's confiding and accommodating nature, and the extent to which the individual is typically well-groomed. Being conventional, reliable, adaptable, generous, and trusting, agreeable people value social harmony and collaboration, perceive others as honest, and innocent, and readily compromise their interests to please others (Matsumoto & Juang, 2012; Rothmann & Coetzer, 2003; Thompson, 2008). Being higher on agreeableness dimension of personality is generally perceived as ingenuous and submissive whereas low level of agreeableness is considered a trait of belligerent, competitor, rigid, intriguing, and suspicious personality (Bartneck, Van Der Hoek, Mubin, & Al Mahmud, 2007; Toegel & Barsoux, 2012).

Research is now increasing focusing childhood and adolescence time period to understand various dimensions of personality and its correlates (Ghaderi & Ghasemi, 2012; Jensen-Campbell et al., 2002; Koolen et al., 2012; Rothbart, Ahadi, & Evans, 2000) in a way which may link these conceptual and empirical findings in order to predict adult personality in later life. Particularly talking about agreeableness domain, children with higher level of this trait have little threats of peer rejection because of their sensitivity and concern for others' needs and opinions. Rather being less problematic, less hostile, and more flexible have greater chances to get acknowledgment by their peers (Bierman, 2003).

Another study revealed that agreeable youth is emotionally more responsive and is better able to control negative affect in a controversial situation than their counterparts by applying conflict-avoidant measures (Jensen-Campbell, & Graziano, 2001; Tobin, Graziano, Vanman, & Tassinary, 2000). They readily withdraw in favors of their adversary and are less likely to argue with low agreeable children as well as they also try to avoid argumentation with their congenial relationships to the maximum (Graziano, Habashi, Sheese, & Tobin, 2007). Another study theorized that high degree of agreeableness and friendly compliance during the period of adolescence strongly predicted high academic achievement, social competence, and cultured behaviors later in life (Shiner, 2000). In short, agreeableness is an interpersonal attribute which is linked with psychological well-being, positive mental health, positive moods, healthy interpersonal relationships and tenderness (Laursen, Pulkkinen, & Adams, 2002).

Conscientiousness. Characteristically, conscientiousness is a propensity to be structured, controlled, reliable, disciplined, dutiful, achievement-oriented and well planned instead of being abrupt or impulsive (Costa, & McCrae, 1992). Exaggerated level of conscientiousness is conceived as obstinate, workaholic, and obsessed with perfectionism (Carter et al., 2015) whereas the lower extreme is marked by being spontaneous, messy,

unreliable, and also criminogenic (Ozer & Benet-Martinez, 2006; Toegel & Barsoux, 2012). Conscientiousness functions on the mechanisms through which individuals control, manage, and coordinate their motivations and impulses and it is articulated in their overt actions i.e. being cautious, thoughtful, deliberate, tidy and organized (Thompson, 2008). By and large, conscientiousness draws a positive association with eudemonia, especially contentment with life, thus highly conscientiousness individuals have a tendency to be more satisfied with their lives than the individuals lower level of this trait (Steel, Schmidt, & Shultz, 2008).

Literature shows a gradual change and maturity in the development of conscientiousness trait (Roberts, Walton, & Viechtbauer, 2006; Srivastava, John, Gosling, & Potter, 2003) which is linked with the transitional roles from childhood to adulthood (Bleidorn, Klimstra, Denissen, Rentfrow, & Potter, 2013; Roberts & Wood, 2006). Recent studies have speculated that this personality dimension can unequivocally be found in children and adolescents as it is manifested in adulthood (Soto & John, 2014; Tackett, et al., 2008). However this manifestation can be best described in a u-shaped developmental curve as Denissen, van Aken, Penke, and Wood (2013) found in their meta-analysis that the average degree of conscientiousness trait decreased in early to middle adolescence and then started increasing again from late adolescence period.

At the same time, studies have documented cross-sectional as well as predictive relationship of conscientiousness with higher academic achievement (Duckworth & Seligman, 2005; Jackson, et al., 2010), self-discipline (Duckworth & Seligman, 2005), positive physical health (Hampson, Goldberg, Vogt, & Dubanoski, 2006; Takahashi, Edmonds, Jackson, & Roberts, 2013), healthy interpersonal relations (Wood, Larson, &, Brown, 2009), and fewer emotional and behavioral difficulties (De Bolle, Beyers, De Clerg, & De Fruyt, 2012).

Openness to Experience. Openness is typically characterized by discernment for artwork, sensitivity to feelings and beauty, venture, novel themes, intellectual inquisitiveness, fantasies, and assortment of experience (Thompson, 2008). In comparison with others, they are more inventive, cognizant of their sentiments and feelings, and tend to have unorthodox beliefs. However, an individual high on openness is quite likely be curious and novelty seeking but not necessarily hold interest in artworks or poesy (Toegel & Barsoux, 2012). Openness to experiences has been reported to account moderate or average degree of relationship with various accepts of personal wellbeing (Steel et al., 2008). Furthermore, religious fundamentalism as well as traditional religious beliefs has been documented to draw negative associative patterns with openness trait whereas spirituality lined positive connection with high openness (Saroglou, 2002). Nevertheless, no consistent findings have been document regarding associations between openness trait and developmental psychopathology (Klimstra, Hale III, Raaijmakers, Branje, & Meeus, 2009).

The relationship between adolescent personality and problem behavior has been well documented (Cooper, Agocha, & Sheldon, 2000; Hoyle, Fejfar, & Miller, 2000; Loukas, Krull, Chassin, & Carle, 2000). In a recent review and theoretical analysis, Shiner and Caspi (2003) described several processes that could be involved in the connection between Big Five personality traits and psychopathology and emphasized that the (social) environment plays a role in all these processes. Finch and Graziano (2001) and Finch, Okun, Pool, and Ruehlman (1999) found empirical support for an indirect effect of adolescent personality on problem behavior through social relations. Adolescents' Agreeableness and Neuroticism exerted an effect on depression through two qualities of social relations (social support and negative social exchange), while adolescents' Extraversion exerted an effect on depression through one of these qualities of social

relations (social support). Neuroticism also exerted a direct effect on depression. Only in the study of Finch et al. (1999) Extraversion also contributed directly to depression.

Generally speaking of personality traits, literature provides sound support for the interactive effects of adverse life events and personality traits on emotional and behavioral problems. Because severely stressful events are rare, most studies are limited to assessing personality in the aftermath of traumatic events. These studies suggest that individuals suffering from emotional problems have a distinct personality profile characterized by high neuroticism (Chung, Berger, & Rudd, 2007; Chung, Dennis, Easthope, Werrett, & Farmer, 2005), low extraversion (Chung et al., 2005), and low agreeableness (Chung et al., 2007; Talbert, Braswell, Albrecht, Hyer, & Boudewyns, 1993). The few studies that measured aspects of personality traits before a traumatic event found that participants who show high baseline levels of neuroticism (Bramsen, Dirkzwager, & Van Der Ploeg, 2000) and possibly openness (Knezevic, Opacic, Savic, & Priebe, 2005) are more likely to show symptoms of posttraumatic stress. Moreover, those with higher neuroticism scores immediately after a traumatic experience are more likely to develop symptoms of posttraumatic stress later on (Fauerbach, Lawrence, Schmidt, Munster, & Costa, 2000).

These studies show that neuroticism is a major risk factor for the development of depression and anxiety. Neuroticism is one of the major temperamental basic personality traits, which appears to be stable over time during adulthood and to a large extent genetically determined (Watson, Gamez, & Simms, 2005). High levels of neuroticism are associated with increased risk for major depression and other affective disorders (Clark et al., 1994). Two models have been proposed on the relation between neuroticism and adverse life events. In the first model, adversity and neuroticism contribute independently to the vulnerability of depressive disorders, whereas in the second model it is assumed that besides increasing the overall risk of illness, higher levels of neuroticism also increase the

impact of adversities (Kendler, Kuhn, & Prescott, 2004). Moreover, neuroticism may also be associated with a greater likelihood of exposure to adverse life events (e. g., Magnus, Diener, Fujita, & Pavot, 1993), while negative life events may also have a moderate effect on neuroticism (Middeldorp, Cath, Beem, Willemsen, & Boomsma, 2008).

Role of Demographic Variables

Studies have highlighted that other than psychological factors, there are a number of demographic variables that significantly contribute to the manifestation and maintenance of adolescent psychopathology. These demographic variables may include gender, age, family system and socioeconomic status of children or adolescents.

Gender. Literature provides empirical evidence for the significant role of gender in the development of emotional and behavioral psychopathology and suggested an earlier onset and higher rates of emotional symptoms among girls and vice versa for conduct problems (Bongers, Kout, vander Ende, & Verhulst, 2004; Li & Prevatt, 2008). Other studies have reported higher levels of internalizing outcomes (i.e., anxiety, withdrawal, depression and somatic complaints) for female adolescents while externalizing symptoms have been observed with greater ratios among male adolescents (Angold, Erkanli, Silberg, Eaves, & Costello, 2002; Carter, Jaccard, Silverman, & Pina, 2009; Garnefski, Kraaij, & van Etten, 2005; Kingery, Ginsburg, & Alfano, 2007; Shaw, Dallos, & Shoebridge, 2009; ZahnWaxler, Shirtcliff, & Marceau, 2008). Similarly Bruno (2010) found that girls commit greater number of self-debasing cognitive errors which are more closely associated with internalizing symptomatology while boys show more frequent numbers of self-serving thinking errors (commonly present with externalizing psychopathology) in making interpretations and judgements. Significant gender differences have also been observed for other personal factors e.g. personality traits where girls have been shown with higher level of neuroticism and agreeableness whereas boys

have been seen with more prominent features of extraversion, openness and conscientiousness (Chapman, Duberstein, Sörensen, & Lyness, 2007; Costa, Terracciano, McCrae, 2001; Schmitt, Realo, Voracek, & Allik, 2008).

Age. Studies, while making age wise comparisons, have stated inconsistent findings for intensity, magnitude and frequency of emotional and behavioral difficulties among adolescents. For example, some studies (i.e., Liu et al., 2000; Yang, Li, Zhang, Tein, & Liu, 2008) report that problem behaviors occur more frequently and with greater intensity in younger adolescents while other studies (Bilancia & Rescorla, 2010; Cederblad, Pruksachatkunakorn, Boripunkul, Intraprasert, & Hook, 2001; Montague, Cavendish, Enders, & Dietz, 2010) have reported the same for older adolescents. Similar kind of inconsistent findings have been reported for cognitive distortions e.g. Bruno (2010) found that greater number of self-debasing and self-serving cognitive errors were committed middle adolescents rather than younger or older adolescents group. However previous studies (Barriga et al., 2000; Frey & Epkins, 2002) have stated non-significant age differences on both types of errors. For personality traits, studies have shown a gradual stability and maturity from early childhood to adolescence and to adulthood period i.e. as people age they become more agreeable, more conscientious and less neurotic (Roberts, et al., 2006). However again, some studies (i.e., Soto & Tacket, 2015) have argued that developmental transitions cause irregular and momentary swims in the developmental and maturational patterns of personality traits during the course of adolescence.

Family system. Family system has also been considered a strong correlate of adolescents' emotional and conduct problems in the studies of mental health. For instance, researchers have postulated that children with smaller family size or nuclear family structure experience only a handful of problem behaviors than those living with larger

families in joint family structures (Luoma et al., 1999). The rudimentary factors in joint or larger family system that accompanied internalizing or externalizing psychopathologies may involve poor affective involvement, communication gaps, lack of warmth in family interactions, and poor quality time to assess and meet the psychological needs of children (e.g. Crawford & Manassis, 2010; Henderson, Dakof, Schwartz, & Liddle, 2006; Kapi, Veltsista, Kavadias, Lekea, & Bakoula, 2007). Similar patterns have also been observed by Rehna and Hanif (2012) for self-debasing cognitive errors. In their study with depressed adolescents, they found that adolescents from joint family system were more likely to commit cognitive distortions while making judgements in comparison to those from nuclear families. The reasons behind may be the same as those of emotional and behavioral problems with an addition that parents in joint families usually give their children little autonomy for independent decision making which hamper their self-confidence and may distort their cognitive processing while making interpretations of the environment.

Socioeconomic status. Another salient demographic factor that has a strong impact in the development and manifestation of psychopathology is socioeconomic standing of the targeted population (Amone-P'Olak et al., 2009; Guerrero, Hishinuma, Andrade, Nishimura, & Cunanan, 2006; Lorant et al., 2003; Slobodskaya & Akhmetova, 2010). Across cultures, an ample of empirical data has supported the assumption that children and adolescents from poor socioeconomic structures tend to be at greater risk for developing psychopathology e.g. emotional and behavioral outbursts than those from middle or upper economic status (Costello, Keeler, & Angold, 2001; van Oort, van der Ende, Wadsworth, Verhulst, & Achenbach, 2011; Wadsworth & Achenbach, 2005). Similar findings have been reported for self-debasing cognitive errors (Karakaya et al.,

2007; Rehna & Hanif, 2012) as well. However, no research has highlighted the role of family system or socioeconomic status in eliciting self-serving thinking distortions.

Summing up the debate, the problem of child and adolescents psychopathology is even awful and worth indeed to explore in Pakistan which has been riddled with multiple stressors such as poor socioeconomic conditions, maltreatment, extremism, terrorism, and ill facilities of health for the last many years. This unfortunate and adverse scenario is imperiling its youth towards hazardous physical and mental health outcomes. The problem is, in fact, shrouded in the negligence and irresponsibility of the policy makers, health care institutions and researchers as well; as the more sensitive is the subject the less research has been focused on it. Therefore the role of these demographics in the context of adverse life experiences and adolescent psychopathology is aimed to explore in the main study while pilot study is aimed at establishing the psychometrics and the relationship between the study variables.

Rationale of the Study

The relationship between adverse life events and the subsequent emotional and behavioral problems has extensively been studied (Flouri & Panourgia, 2011; Leadbeater, Blatt, & Quinlan, 1995; Rutter 2007). These researches argue that adverse life events increase the vulnerability for emotional problems of adolescents for example anxiety, depression, and conduct problems or antisocial behavior (Gore, Aseltine, & Colten, 1992; Leadbeater et al., 1995; Stouthamer-Loeber, Loeber, Homish, & Wei, 2001; Thornberry, Ireland, & Smith, 2001). At the same time, studies demonstrate that cumulative life stress instead of a single stressor manifold the risk for psychopathology (Aneshensel, 1992; Jackson & Warren, 2000; Kessler, Davis, & Kendler, 1997). These researches, however, also suggest that individual/social conditions influence the variability in how different individuals react to the same level of stress (Conger, 1995). For example, thinking patterns (particularly cognitive errors) are the ones, which have been documented as risk factor (Flouri & Panourgia, 2011) exacerbating the effect of adverse life events on adolescents psychopathology.

But only few of the studies modeling contextual risk effects on children's emotional and behavioral problems have examined factors that 'buffer' these effects. One such protective factor or adaptive resource is intellectual competence (Masten, 2001; Masten, et al., 2004) such as verbal and nonverbal cognitive abilities. Only one study (Flouri & Panourgia, 2011) has so far highlighted the role of nonverbal cognitive ability in studying the relation between life stress and adolescent psychopathology. But verbal cognitive abilities have not been studied in this context yet. Whereas cognitive abilities (verbal and nonverbal) may play a crucial role in buffering the effect of life stress as these are the abilities to process information and solving problem. These abilities are directly linked to how a threat is assessed and processed, resources are accessed or healthier environments or

relationships are sought (Masten et al., 1999) to minimize the probability of a negative outcome. Despite being that important, cognitive abilities have continuously been ignored in the research of life stress and resultant psychopathology among children and adolescents. Similar effects were shown with personality traits. Although, studies have demonstrated their predictive link with psychopathology (Löckenhoff, Terracciano, Patriciu, Eaton, & Costa, 2009) but how these traits function when a stressor is heightened is yet to explore.

Based on the gaps in the literature given above, the present study is an effort to provide an understanding of the concepts and the underlying mechanism of emotional and behavioral problems. Moreover the study is aimed to further knowledge on how verbal and nonverbal cognitive abilities, cognitive errors and personality traits interactively play a moderating role in effects of adverse life events on emotional and behavioral problems of adolescents. Investigating the adverse life events and emotional and behavioral problems among Pakistani adolescents is important for many reasons. First and foremost, without this knowledge, it would be difficult to determine prevention, intervention and research needs of any society. Especially in Pakistan which already has persistently been riddled by poor socio-economic conditions, low literacy rate, political instability, and meager healthcare profile (Gadit & Khalid, 2002; Mirza & Jenkins, 2004), this is very much required for many specific reasons including the need of creating awareness about the gravity of the problem, its high cost and serious consequences. Unfortunately, there are not any or very few reliable and valid data available in Pakistan regarding adolescents' behavioral problems and the underlying mechanisms. Though, a number of researches have already been conducted on adult issues, only a few studies deal with adolescents' problems (i.e., Hussein, 2008; Loona, 2012; Shamama-tus-Sabah, Gilani, & Wachs, 2011; Syed & Hussein, 2009). But these studies have highlighted the role of social factors in relation to

life stress or psychopathology e.g. family and work environment, parenting styles, parental acceptance-rejection, and type of schools etc. Studies exploring the role of personal factors i.e. personality characteristics or cognitive processing such as thinking styles and intellectual competence in the presence of life adversities and psychopathology are scarce. That is why the present study was designed to explore these important aspects of adolescent psychopathology so that these dimensions can be incorporated in the assessment, prevention and intervention processes appropriately.

Conceptual Model of the Study

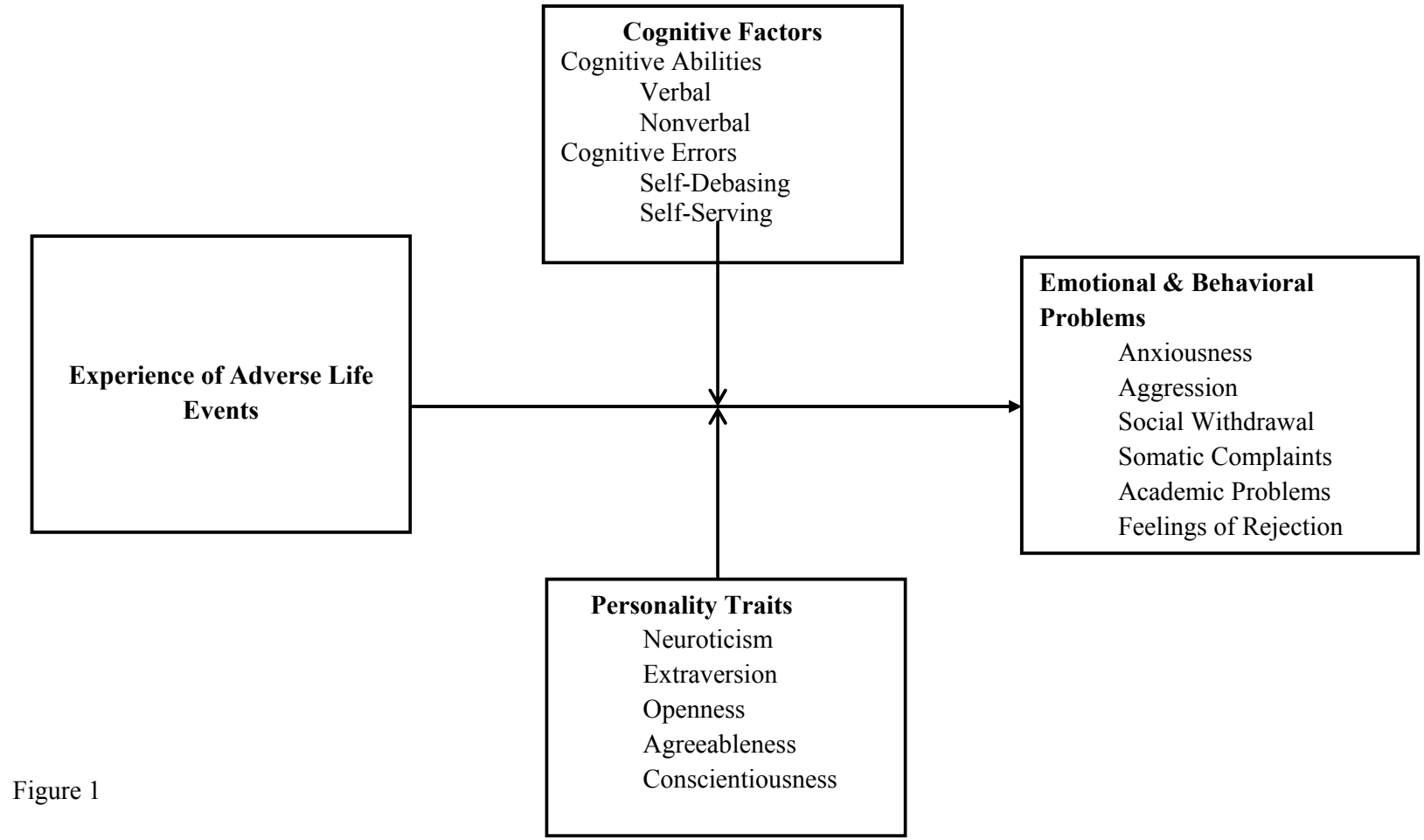

Figure 1

METHOD AND RESEARCH DESIGN

Chapter II

Method

Objectives

The broader objectives of present research are:

- To explore the experiences of adverse life events among adolescents
- To explore the association of adverse life events with adolescents' emotional and behavioral problems
- To explore the role of personal factors (i.e., Cognitive Abilities, Cognitive Errors, and Personality Traits) in association between experiences of adverse life events and adolescents' emotional and behavioral problems

Research Design

The present study was purported to examine the impact of the experience of adverse life events on adolescents' emotional and behavioral problems and to study the moderating role of cognitive factors and personality traits. To measure adverse life events, Adverse Life Events Scale was developed in present study. For rest of the variables, existing scales were selected with the consents of the experts' team. These scales were already used on Pakistani population. Urdu versions of these scales were used in the current study. In order to meet these objectives, the present study was conducted in three phases:

Phase-I: Development and translation of scales. First phase of the study was aimed at developing Adverse Life Event Scale (ALES) to assess the experiences of adverse life events of adolescents and translating How I Think Questionnaire (HIT-Q) to measure self-serving cognitive errors committed by adolescents. Other study scales were already developed, translated, and validated in the indigenous perspective of Pakistan.

Phase -II: Pilot study. The second Phase in the present research was Pilot Study which was carried out to validate ALES, Children Negative Cognitive Errors Questionnaire

(CNCEQ) and HIT-Q, to develop other psychometric properties (reliability coefficients and item-total correlations) of the study Scales and examine the relationship between the study variables.

Phase -III: Main study. In Phase-III, Main Study was conducted which was primarily aimed at testing the hypotheses of the study.

CHAPTER III

Phase-I: Development and Translation of the Scales

This phase was further carried out in two steps:

1. The development Adverse Life Event Scale (ALES)
2. Translation of How I Think Questionnaire (HIT-Q)

Step-1: Development of the Adverse Life Event Scale (ALES)

At the first step of this phase a scale was developed to explore adverse life events among adolescents if they had experience any during the past 12 months. Although a number of scales (Adverse Life Events Scale: Tiet et al. 1998; Life Events Checklist: Johnson & McCutheon, 1980; Life Event Questionnaire: Norbeck, 1984; The Life Events Checklist: Stack, Haldipur, & Thompson, 1987) have been establish in the Western cultures to assess adverse life events; but these measures have targeted adult population in general and no specific items related to adolescents' experiences have been added in these measures. Moreover some particular adversities were missing in these measures which are unfortunately very common in Pakistan; i.e. sectarian conflicts/ riots, extremism and terrorism etc. Owing to these limitations, the present study needed to develop a scale to bridge these gaps and particularly target the adolescent population. According items were devised with respect to the nature of the event and the level of stress that event had on the adolescents. The scale was developed into the following stages:

Stage -I: Literature review. At the first stage of the study literature was thoroughly reviewed regarding adverse life events e.g. what type of events the literature categorizes as adverse events and also to identify the nature, magnitude, and severity of the stress associated with those events. Moreover some questionnaire/scales devised to assess adverse life events i.e. Life Event Questionnaire (LEQ; Norbeck, 1984), Adverse Life Events Scale (ALES; Tiet et al. 1998), The Life Events Checklist (LEC; Stack et al, 1987)

and Life Events Checklist (LEC; Johnson & McCutheon, 1980) were also consulted for the development of the Scale.

Stage -II: Focus groups discussions (FGDs). At the second stage of the study, six Focus Group Discussions (FGDs) were held with adolescents, parents and teachers to gather the public perspective on adverse life events. Two FGDs were conducted with adolescents (N = 20; 5 boys and 5 girls in each focus group) with an age ranged from 12 to 18 years. Two FGDs were held with parents (N = 19) with an age ranged from 32 to 51 years. One focus group was conducted with mothers (N = 11) while the second was held with fathers (N = 8). Two FGDs [one with female teachers (N = 10); one with male teachers (N = 8)] were carried out with secondary school teachers having age ranged from 26 to 48 years. The purpose of these FGDs was to explore the cultural diversities regarding adverse events e.g. an event may be considered as "adverse" in West but that event may not be considered adverse in Pakistani context. Moreover, it also purported to explore the adverse events with a particular focus on adolescent age range as none of the measures, in hand, deals with adolescents' adverse life experiences but focuses on the adult population. A focus group guide was prepared consisting of five questions (See *Appendix B*) and questions were asked in an orderly manner. In each FGD, participants were first briefed about the nature and objectives of the study and each FGD approximately took 40 to 50 minutes to complete the discussion. After completing each FGD, data, gathered, was transcribed and items were extracted for the scale.

Stage -III: Generation of item pool. After gathering data through a thorough literature review and exhaustive FGDs, the next phase was consisting of item writing. At this stage 72 items were generated under the categories e.g. 'Health related events', 'School related events', ' Residence related events', 'Personal and Social Events', Family and Friends related Events', and 'Natural Disasters'. These categories were derived on the basis

of reviewing the categories reported in a previously established scale (LEQ; Norbeck, 1984) of adverse life experiences. However, on the basis of FGDs, a new category of 'Any Other Event' was added to identify if the subject had experienced any event other than 72 items/events which the scale was comprised of. The scale was developed in such a format that subjects first had to indicate whether they had experienced the event or not (as Yes or No) and then to rate the impact of the event on a 4-point rating scale (i.e., not at all = 1, slightly = 2, to a greater level = 3, very much = 4). Total score of ALES is calculated by summing up the impact rating of all the items of the scale.

Stage-IV: Subject matter experts' review. After writing the items, a committee approach of the four subject matter experts was conducted to review the scale critically. The committee of experts comprised of two Ph.D. faculty members of Psychology and two Ph.D. scholars having excellent knowledge of psychometrics (development, adminintration and standardization of psychological tests) as well as expertise in the field of adolescent development. Experts were instructed to review the content in terms of language, clearity of the contents, appropriateness of items as well as format and the face validity of each of the items in the scale. After their joint consensus following two items were removed from the scale as they were not considered as adverse events by any of the reviewers.

1. نادناخ ںیم یسک ےئن درف اک ہفاضا وہ (یسک نہب یئاھب یک شئادیپ ای ےڑب یئاھب□نہب یک یداش ہریغو)
2. نا ھڑپ تخسروا جازم ںاماب پ

14 items were suggested as double barreled so they were suggested to restate as separate items. One item was added by the experts as a male specific item equivalent with the menarche (first menstrual period) for females. Few items were suggested to rephrase appropriately and rest of the items were considered as having good face validity.

Stage-V: Finalization of items pool. After taking the subject matter experts' review and opinion a scale with 85 items/events was finalized under the same categories for using in the present study.

Stage-IV: Pre-testing of the questionnaire. The final stage of step-1 was pre-testing of the scale in the pilot study. This pretesting was done with a sample of 303 adolescents who had experienced any adverse life event during the past one month. The purpose of the pre-testing was to establish the psychometric properties of the scale (See *Appendix C*).

Step-2: Translation of How I Think Questionnaire (HIT-Q). The second step of this phase comprised of the translation of "How I Think Questionnaire (HIT-Q)." HIT-Q measures self-serving cognitive errors and was originally developed by Gibbs et al. (2001) HIT-Q has been used by various investigators to measure self-serving cognitive errors of children and adolescents (Andreu & Peña, 2013; Barriga, et al., 2009; Capuano, 2011; Plante et al., 2012). For using in the present study, HIT-Q was translated through a back translation method in order to check the semantic equivalence of the translated version. Translation was done in the following stages:

Stage-I: English to Urdu translation. At the first stage of this phase the scale was translated from English to Urdu language. For this purpose five Ph.D. scholars, having excellent bilingual understanding, were approached to translate originally developed English item into Urdu language. These scholars were (1) having the clarity and understanding of the original language (English) with a high probability of finding a readily available target language equivalent, and (2) were able to produce targeted language items readily understandable by the eventual set of respondents. The experts were briefed about the purpose and nature of the study.

Stage-II: Committee approach. After completing the initial translation, all the translations were reviewed from three experts (having good bilingual understanding) by applying "Committee Approach". Experts comprised one Ph.D. Faculty member and two Ph.D. sholar from National Institute of Psychology, Quaid-i-Azam University, Islamabad.

The experts were instructed to scrutinize the translated items carefully, and select the items conveying the best context, grammar and wording; and were also apprised to verify the "cultural and semantic equivalence" of the items.

Stage-III: Back translation. After the final selection of the Urdu translated items of How I Think Questionnaire (HIT-Q), those items were again translated back into English. Again a group of five bilingual experts (Ph.D. sholar from National Institute of Psychology, Quaid-i-Azam University, Islamabad) were contacted to translate the Urdu translated items into English. The purpose of the back translation was to check the accuracy of the Urdu translations.

Stage-IV: Committee approach. After completing back translation, the final committee approach was conducted for the selection of back translated items. This committee also comprised of three experts (one Ph.D. faculty member and two Ph.D. sholars from National Institute of Psychology, Quaid-i-Azam University, Islamabad) who were instructed to scrutinize and match the best back translated items with the original scale's items to verify the contextual and semantic equivalence of both (original English, See *Appendix H*; translated English, See *Appendix J*) versions.

Stage-V: Finalization of hit-q for pilot study. After the committee approach of the back translation the items of Urdu translation were finalized for the scale (See *Appendix I*) to administer in the pilot study.

Besides the development of ALES and translation of HIT-Q the other scales used in the present research were, School children Problem Scale (Saleem & Mehmood, 2011), Children Negative Cognitive Errors Questionnaire (Leteinberg et al., 1986), translated into Urdu by Rehna and Hanif (2012), Sajjad Verbal Intelligence Test Urdu (Hussain, 2001), Raven's Standard Progressive Metrices (Raven, 2000), and NEO-FFI (MaCrae & Costa, 1992), translated into Urdu by Chishti (2000), were used in the present study.

PILOT STUDY

Chapter IV

Phase-II: Pilot Study

Objectives

Pilot study was carried out with the following objectives:

- To validate Adverse Life Event Scale (ALES) developed in Phase-I of the present study
- To determine the construct validity of HIT-Q and Children Negative Cognitive Errors Questionnaires (CNCEQ)
- To determine the psychometric characteristics of all the study scales
- To explore the trends of relationship between study variables
- To explore the patterns of emotional and behavioral problems, cognitive errors, and personality traits with respect to different adverse life experiences of adolescents

Sample

Sample of pilot study comprised of 303 adolescents (boys = 139, Girls = 164) with an age ranged from 10 to 19 years (M = 14.83*,* SD = 1.16). This age range for adolescence period has been given by World Health Organization (WHO, 2014). Sample was collected from different Government schools of Islamabad through a purposive convenient sampling method and 57% of the sample belonged to joint family system. Researcher approached each participant individually and provided them a brief introduction about nature and objectives of the study. First the adolescents were screened out on the basis of administering Adverse Life Events Scale (ALES) as we only needed those adolescents who had experienced any adverse event during the last one year. The inclusion criterion of 'the last one year' was determined because the stress associated with the adverse event may ward off after one year usually (Flouri & Panourgia, 2011) whereas the present study was interested in the adverse events which were stressful for the adolescents as well. After

screening them, a booklet consisting on the study scales was administered. Initially 340 (boys = 161, Girls = 179) adolescents were approached with an attrition rate of 11% as 37 participants withdrawn from the research after completing half or less questionnaires. Data of these 37 participants was discarded and a final sample of 303 adolescents was used to meet the objectives of the pilot study. Following (Table 1) are given the frequencies and percentages of demographic specifications of the final sample.

Table 1

Frequencies and Percentages of Demographic Characteristics of the Sample (N = 303)

Variables	*f*	*%*
Gender		
Boys	435	66
Girls	228	34
Missing	0	0
Age		
Early Adolescents	40	13
Middle Adolescents	138	46
Late Adolescents	92	30
Missing	33	11
Family System		
Nuclear	130	43
Joint	173	57
Missing	0	0
Income Group		
Lower (≤ 24000)	91	30
Middle (42100-40000)	134	44
High (≥ 40100)	64	21
Missing	14	5

Instruments

Following instruments were used in the pilot study:

1. **Adverse life events scale (ALES).** Adverse Life Events Scale was developed in the first phase of this study. ALES (See *Appendix C*) consists of 85 items under six theoretically derived categories 'Health related events', 'School related events', 'Residence related events', 'Personal & Social events', Family & Friends related events', and 'Natural Disasters'. ALES is a checklist-cum-rating scale on which adolescents first indicate whether they have experienced the event or not (with a dichotomous response i.e., Yes/No) and then they rate the level of the stress they experienced because of that event on a 4-point rating scale (i.e., not at all = 1, slightly = 2, to a greater level = 3, very much = 4). Total score of ALES is calculated by summing up the impact rating of all the items of the scale.

2. **School children's problems scale (SCPS).** School Children's Problems Scale (SCPS; See *Appendix D*) was used in the present study to measure emotional and behavioral problems of adolescents. The scale was developed by Saleem and Mehmood in 2011. The scale comprises of 44 items on a Likert type 6-point rating scale ranging from 0 = not at all to 5 = extremely common. SCPS consists of six subscales namely Anxiousness, Academic Problems, Aggression, Social Withdrawal, Feeling of Rejection and Psychosomatic Complaints. High scores on each subscale predict that the adolescent has the high level of that problem. SCPS was found to be a reliable (test-retest reliability = 0.79 and split half reliability = 0.89) and a valid scale with acceptable psychometric properties (Saleem & mehmood, 2011).

3. **Sajjad verbal intelligence test Urdu (SVITU).** Sajjad Verbal Intelligence Test Urdu (SVITU; See *Appendix E*) was used to measure the verbal cognitive ability of adolescents. The test was developed, validated and standardized by Hussain (2001). The test comprises 128 multiple choice items with four subscales (vocabulary = 42 items,

numerical reasoning = 36 items, verbal reasoning = 20 items, and information = 30 items). True answer is given 1 score and false answer is given 0 score. Total scores range between 0-128. Higher score on any domain shows the higher level of that ability. Hussain (2001) has reported good concurrent and construct validities and highly acceptable reliabilities i. e. KR-20, test-retest, and split-half (.92*, .86* and .86* respectively) reliabilities.

4. **Raven standard progressive matrices (RSPM).** Nonverbal Cognitive Ability of adolescents was measured with Raven's Standard Progressive Matrices (RSPM; Raven 1938). The RSPM (See *Appendix F*) measures ability to form perceptual relations and to reason by analogy independent of language and formal schooling and has been used to assess non-verabl cognitive ability of adolescents in the previous studies (Ali, Suliman, Kareem & Iqbal, 2009; Flouri & Panourgia, 2011; Flouri & Panourgia, 2011; Flouri, Hickey, Mavroveli, & Hurry, 2011; Flouri, Mavroveli, & Tzavidis, 2012). The RSPM presents participants with 60 items (visual puzzles) in five sets (A, B, C, D, & E) with 12 items on each set. Each puzzle is made up of a matrix (usually 2×2 or 3×3) showing change along both x and y axes. From each item one piece is missing and must be identified by multiple choice from six options (sets A and B) or eight options (sets C–E). Difficulty increases progressively within each set, and from one set to the next. Higher score on the total scale shows high nonverbal ability of the child/ adolescent. The RSPM has good test-retest reliability over periods of up to an year across a range of cultures and very good concurrent and construct validity (Raven, 2000). Raw scores onb RSPM are typically converted into percentile but raw scores may also be used for research purpose (i.e., Chen, Ho, Chen, Hsu, & Ryu, 2009; Flouri & Panourgia, 2011; Flouri & Panourgia, 2011; Flouri, Hickey, Mavroveli, & Hurry, 2011; Flouri, Mavroveli, & Tzavidis, 2012)

5. **Children's Negative Cognitive Errors Questionnaire (CNCEQ).** Children's Negative Cognitive Errors Questionnaire Urdu (CNCEQ; See *Appendix G*) was used in the

present study to measure self-debasing cognitive errors among adolescents. The questionnaire was originally developed by Leitenberg, et al., (1986) and translated into Urdu by Rehna and Hanif (2012). CNCEQ is a Likert-type 5-point rating scale with the score range of 1-5. CNCEQ assesses four principal cognitive errors (i.e., Catastrophizing, Overgeneralization, Personalizing, and Selective Abstraction) with six items on each domain. Scores on the upper continuum on any subscale depicts that the child/ adolescent commits greater level of that cognitive errors. CNCEQ has shown good alpha reliabilities ranging from .85 to .92 (Rehna et al., 2012).

6. **How I Think Questionnaire (HIT-Q).** Urdu version of How I Think Questionnaire was used to assess self-serving cognitive errors of adolescents (HIT-Q; See *Appendix I*). The HIT-Q was originally developed by Gibbs et al., (2001) and was translated in Urdu in the first phase of the current study. HIT-Q is a 54-item instrument designed to measure four categories of self-serving cognitive errors: self-centered, blaming others, minimizing/mislabeling, and assuming the worst and four behavioral referents: physical aggression, oppositional-defiance, lying, and stealing. The present study focused on the four cognitive distortions and not on the behavioral referents. The HIT-Q also includes an eight-item anomalous responding (AR) scale designed to screen for disingenuous, incompetent, or otherwise suspect responding. A high score on any domain depicts a high degree of committing that cognitive distortion and vice versa. Internal consistency reliabilities, as measured by Cronbach's coefficients alpha, were 0.89 for the overall HIT-Q (Barriga et al., 2001).

7. **NEO Five-Factor Inventory (NEO-FFI).** Urdu version (Chishti, 2002) of the NEO-FFI (See *Appendix K*) was used to assess personality traits of the subjects. NEO-FFI assesses big five personality traits (i.e., Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness) and comprises of 60 items (12 item on each factor).

Responses were reported on a five point rating scale ranging from 1-5. Items 1, 3, 8, 9, 12, 14, 15, 16, 18, 23, 27, 29, 30 ,31, 33, 38, 39, 42, 44, 45, 46, 48, 54, 55, 57, 59 are reversed scored. Maximum and minimum score on each factor is 60 and 12 respectively. High score on each factor depicts that the subject is high on that trait and vice versa. Alpha reliabilities for NEO-FFI have been reported from .83 to .90 (Soto, John, Gosling, & Potter, 2011).

Consent form and demographic sheet. A consent form along with appropriate demographic sheet (See *Appendix A*) was also attached with instruments to obtain willingness of the subjects and necessary demographic information of the participants. This information included age, gender, family structure, and monthly income etc.

Procedure

Sample was approached with an official approval of Directorate of Education and with the permission of concerned authorities of the schools. These authorities were first briefed about the nature and the objectives of the research and about the estimated period of the data collection. After obtaining the informed consent of the Directorate of Education and the concerned authorities of the school an informed consent (along with demographic detail) was also signed out by the adolescents. Other research ethics were also taken into account i.e., participants were given the full right to quit their participation at any stage and withdraw from research. Participants were assured of their right of privacy and confidentiality and were assured that their information will be kept quite confidential and will be used for particularly this research only. Researcher approached each participant individually and provided them a brief introduction about nature and objectives of the study. First the adolescents were screened out on the basis of administering Adverse Life Events Scale (ALES) as we only needed those adolescents who had experienced any adverse event during the last one year. After screening them, a booklet consisting on rest of the questionnaires [i.e. School Children Problem Scale (SCPS), Children Negative

Cognitive Errors Questionnaire (CNCEQ), How I Think Questionnaire (HIT-Q), Sajjad Verbal Intelligence Test Urdu (SVITU), Raven's Standard Progressive Matrices (RSPM), and NEO-Five Factor Inventory (NEO-FFI)] was handed over to the participants to fill up. Instruments were administered individually in two consequetive days because of the large number and length of the instruments. Each individual took almost 50 minutes to complete the questionnaire on each day of the data collection. Each participant was provided refreshment on both days of data collection. Funding was provided by Higher Education Commission of Pakistan to meet the expenses of this study. After taking the data necessary statistical analyses were computed for the results.

Results

This section of the study holds results of the pilot study including validation of ALES (concurrent and content validity), HIT-Q, CNCEQ (CFA, convergent and discriminant validity), other psychometrics (reliability estimates and item-total correlations), and inter-correlations for all the study variables.

Table 2

Reliability Estimates and Descriptive Statistics of the Study Scales (N=303)

Subscales	No. of Items	α	*M*	*SD*	Skewness	Kurtosis
ESLE	87	.81	35.32	12.91	.59	-.34
ANX	12	.92	30.41	10.07	-.024	-1.26
AGG	8	.92	20.75	6.46	-.12	-1.03
SW	7	.82	18.17	5.09	-.019	-1.03
SC	4	.76	9.57	3.15	-.06	-.93
AP	8	.74	22.96	7.0	.03	1.68
FR	5	.91	12.60	4.88	-.12	-1.26
TP	44	.90	119.15	24.99	-.37	-1.05
CATA	6	.90	17.98	6.70	.13	-.89
PERS	6	.94	19.46	8.44	-.19	-1.30
SA	6	.90	15.77	6.02	.05	-.94
OG	6	.93	18.17	7.68	.07	-1.32
CET	24	.94	71.38	26.47	-.05	-1.30
SC	9	.88	25.87	13.25	.51	-.96
BO	10	.89	24.55	10.61	.32	-.71
ML	9	.88	27.86	13.82	.66	-.43
AW	11	.89	30.27	14.15	.51	-.70
AR	8	.87	25.58	8.74	.26	-.64
PF	7	.86	35.47	6.49	-1.8	1.7
CET	54	.92	169.61	54.63	.51	-.94
NEU	12	.88	44.95	12.25	-.58	-.79
EXT	12	.85	34.42	10.51	-.003	-1.12
OPEN	12	.74	33.69	8.53	.08	-.82
AGRE	12	.78	37.08	8.68	-.30	-.63
CONS	12	.80	37.28	8.96	-.05	-.86

Note: ESLE=Experience of Stressful Life Events, ANX=Anxiousness, AGG=Aggression, SW=Social Withdrawal, SC=Somatic Complaints, AP=Academic Problems, FR=Feelings of Rejection, TP=Total Problems, CATA=Catastrophizing, PERS=Personalizing, SA=Selective Abstraction, OG=Over Generalization, CET=Cognitive Errors Total, SC=Self-Centeredness, BO=Blaming Others, ML=Mislabeling, AW=Assuming the Worst, AR=Anomalous Response, PF=Positive Filters, CET= Cognitive Errors Total, NEU=Neuroticism, EXT=Extraversion, OPEN=Openness, AGRE=Agreeableness, CONS=Conscientiousness

Table 2 shows alpha coefficients, means, standard deviations, skewness and kurtosis for Adverse Life Events Scale, School Children Problem Scale, Children Negative Cognitive Errors Questionnaire, How I Think Questionnaire, their subscales and the subscales of NEO-FFI. Findings indicate that all the study scales and their subscales have high alpha coefficients and scores on all the scale and their subscales are normally distributed.

Table 3

Reliability Estimates and Descriptive Statistics of Sajjad Verbal Intelligence Test Urdu and Its Subscales and Raven's Standard Progressive Matrices (N=303)

Scales	No. of Items	*KR-20*	*M*	*SD*	Skewness	Kurtosis
VOC	42	.89	22.52	9.003	.04	-1.4
VR	20	.74	10.29	4.11	-.06	-.89
NA	36	.85	21.58	7.01	.13	-1.44
INFO	30	.76	17.56	5.17	-.05	-1.05
Total VA	128	.95	71.95	23.50	.15	-1.49
RSPM	60	.78	29.17	6.16	-.45	-.36

Note: VOC=Vocabulary, VR=Verbal Reasoning, NA=Numerical Reasoning, INFO=Information, SVITU-T= Sajjad Verbal Intelligence Test Urdu Total, RSPM=Raven's Standard Progressive Matrices

Table 3 shows KR-20 reliabilities, means, standard deviations, skewness and kurtosis for Sajjad Verbal Intelligence Test Urdu along with its subscales and Raven's Standard Progressive Matrices. Values indicate that KR-20 reliabilities are high for all the subscales and total scales. Values of skewness and kurtosis show that scores on all the subscale and total scales are normally distributed.

Validation of ALES

The current study did not test the factor structure of ALES because of the nature (i.e., checklist) of the scale. The scale comprised of a list of adverse events and all of the events

might not be experienced by all of the subjects and the data showed many of the events which were not experienced by any of the subject. Owing to the reason 'not experienced' events could not accout variance in the total scale which limited the excecution of factor analysis. To validate ALES, the current study, therefore, established content and concurrent validity for ALES to examine the psychometric strength of the scale.

Content validity of ALES

Content validity refers to the degree the items of a test represent the construct understudy or the intended construct (Beck & Gable, 2001; Mastaglia, Toye, & Kristjanson, 2003). This type of validity is ensured by relying on the opinion of acknowledged experts of the particular subject matter on different criterion i.e. relevance, clarity, comprehension, and/ or whether the item is essential or not.

The content validity of ALES was established through the ratings of experts for each item. Items were reviewed by nine experts have a strong background of psychology, psychological testing, and adolescent development. Among nine experts, four were Doctors of psychology while 5 were Ph.D. scholars (in the last year of the Ph.D. degree) at National Institute of Psychology, Quaid-i-Azam University, Islamabad. They were instructed to rate each item against different criteria including "essential or not", "appropriate or not", "relevant or not", and "sufficient or not" to be retained in the scale. Based on the ratings provided, the items endorsed by at least one third of the experts were retained in the final scale. At this stage none of the item (Events) was discarded as each item fulfilled the minimum criterion set for retention as suggested by the experts.

Concurrent Validity of ALES

Concurrent validity is an important way of collecting evidence for a measure to be valid. It can be defined as the extent to which the scores on one measure correspond to the

results on another test which needs to be reliable, valid and standard (McIntire, & Miller, 2007). Weir (2005) documented the significance of establishing concurrent validity as:

> The more fully we are able to describe the construct we are attempting to measure at concurrent level, the more meaningful might be the statistical procedures contributing to construct validation that can subsequently be applied to the results of the test (p. 18).

The validity is ensures by administering both measures at the same point in time and the findings are correlated with each other. In the present study, concurrent validity of Adverse Life Event Scale was confirmed with School Children Problem Scale as shown in Table 4**.**

Table 4

Relationship of Adverse Life Events Scale with School Children Problem Scale (N=303)

	Adverse Life Events Scale
Anxiousness	.64**
Aggression	.56**
Social Withdrawal	.63**
Somatic Complaints	.71**
Academic Problems	.71**
Feelings of Rejection	.53**
Total	.79**

**$p<.001$

Table 4 shows the results of bivariate correlations between ALES and SCPS and its six dimensions. Values indicate significant (**$p<.001$) positive correlation between Adverse Life Events Scale and each dimension of school children problem scale which provides a strong support for good concurrent validity of ALES.

Factor Structure of CNCEQ and HIT-Q

Confirmatory Factor Analysis (CFA) was conducted to verify the factor structures of CNCEQ and HIT-Q on a sample of 303 adolescents. The objective of assessing these

measurement models was to examine the extent to which these models get in line with the literature in hand. This objective was accomplished by using AMOS-18 proposed by Arbuckle and Wothke (1999). A broad range of Fit-indices are used to test the goodness/fitness of a model. Fit indices used in the present study to judge the goodness of fit included Chi-Square statistics, Comparative Fit Index (CFI), Normed Fit Index (NFI), and Root Mean Square Error of Approximation (RMSEA). Values of CFI and NFI range from 0 to 1 where a value of .90 or above indicates an acceptable fit for the model (Hu & Bentler, 1999). The value of RMSEA and SRMR is restricted by 0 to .08 where a value less than .08 lies in an acceptable for fitting a model (Browne & Cudeck 1993). Findings of CFA for CNCEQ and HIT-Q are reported in the following Table.

Table 5

Goodness-of-Fit Indicators for Four-Factor Model of Children Negative Cognitive Errors Questionnaire and Six-Factor Model of How I Think Questionnaire (N=303)

Model	χ^2	*Df*	χ^2/df	CFI	NFI	RMSEA
CNCEQ	1180.9	216	5.46	.87	.85	.11
HIT-Q	4422.54	1294	4.87	.85	.73	.096

Note: CNCEQ = Children Negative Cognitive Errors Questionnaire; HIT-Q = How I Think Questionnaire

Table 5 shows the goodness of fit indices for the four-factor model of CNCEQ and six-factor model of HIT-Q. Values of both models show a poor fit as the values of RMSEA (.11 and .096) are greater than .08 which are undesirable. The values of CFI and NFI are less than .90 and do not lie in the acceptable range. Overall values do not indicate a good fit for the four-factor model of CNCEQ and the six-factor model of HIT-Q.

Table 6

Factor Loadings and Standard Errors for Four-Factor Model of Children Negative Cognitive Errors Questionnaire (N=303)

Items	Standardized Factor Loadings	SE	Items	Standardized Factor Loadings	SE
	CATA			SA	
1	.82	.07	3	.80	.06
9	.79	.07	10	.78	.07
11	.75	.07	12	.72	.07
18	.83	.08	13	.87	.07
20	.79	.08	15	.79	.07
22	.71	.07	23	.74	.07
	PERS			OG	
2	.84	.09	5	.76	.08
4	.89	.08	8	.86	.08
6	.80	.09	14	.88	.08
7	.84	.08	17	.84	.08
16	.85	.09	19	.86	.08
21	.86	.09	24	.81	.08

Note: CATA=Catastrophizing, PERS=Personalization, SA=Selective Abstraction, OG=Over Generalization

Table 6 shows factor loadings of each item along with their residuals. Findings indicate that all the items show strong loadings with their corresponding factors. Although findings in Table 4 did not support the good fit for four-factor model of CNCEQ but strong factor loadings of the items against their respective subscales in the above table endorsed us to reexamine the factor structure of CNCEQ again in the main study with a larger sample.

Table 7

Factor Loadings and Standard Errors for Six-Factor Model of How I Think Questionnaire (N=303)

Items	Standardized Factor Loadings	SE	Items	Standardized Factor Loadings	SE	Items	Standardized Factor Loadings	SE
	AW		52	.52	.07	33	.86	.08
2	.69	.07	54	.79	.07	40	.75	.08
8	.69	.07		**BO**		47	.72	.07
15	.76	.08	6	.80	.08		**AR**	
18	.78	.07	11	.69	.08	4	.50	.06
23	.73	.07	21	.73	.09	13	.65	.07
29	.85	.07	25	.75	.08	20	.67	.08
32	.78	.07	26	.70	.08	27	.59	.07
35	.69	.07	36	.80	.08	31	.73	.08
43	.80	.04	39	.71	.08	38	.85	.09
49	.81	.07	44	.81	.08	45	.83	.09
53	.76	.06	46	.84	.08	51	.68	.08
	SC		50	.71	.08		**PF**	
3	.67	.06		**ML**		1	.56	.09
7	.68	.06	5	.60	.07	9	.48	.11
10	.77	.07	12	.65	.08	16	.73	.09
22	.85	.06	14	.74	.08	24	.83	.10
28	.86	.06	17	.77	.06	34	.65	.09
37	.83	.06	19	.76	.08	41	.83	.11
42	.79	.06	30	.82	.08	48	.66	.09

Note: AW=Assuming the Worst, BO=Blaming Others, SC=Self-Centeredness, ML=Mislabeling, AR=Anomalous Response, PF=Positive Filters

Table 7 shows factor loadings of each item along with their residuals. Findings indicate that all the items show strong loadings with their corresponding factors. Although findings in Table 4 did not support the good fit for six-factor model of HIT-Q but strong factor loadings of the items against their respective subscales in the above table endorsed us to reexamine the factor structure of HIT-Q again in the main study with a larger sample.

Convergent and Discriminant Validity of CNCEQ and HIT-Q

To determine the convergent validity of Children Negative Cognitive Errors Questionnaire (CNCEQ) Pearson Product Moment Correlation was computed between CNCEQ, its subscales and the Anxiousness domain of School Children Problem Scale (SCPS). Previous researches (Weems et al., 2007) also provide support for a positive correlation between self-debasing cognitive errors and anxiety among youth.

To determine the convergent validity of How I Think Questionnaire (HIT-Q); HIT-Q and its subscales were correlated with the Aggression subscale of SCPS. Fernández, et al. (2013) also established a strong convergent vaidity of HIT-Q by correlating it with Reactive-Proactive Aggression Questionnaire (Raine et al., 2006) because of similar constructs in nature. Whereas to establish the Discriminant validities of CNCEQ and HIT-Q; both scales were correlated with each other. As supported by literature self-serving cognitive errors are more commonly observed in conduct and antisocial behaviors (Barriga, Hawkins, & Camelia 2008) whereas self-debasing cognitive errors are specifically related to internalizing problems i.e., anxiety and depression (Epkins, 2000). These researches provided a base and sound rationale to determine the Discriminant validity of both scales by correlating them with each other. Results of the convergent and Discriminant validities for both Scales (CNCEQ & HIT-Q) are presented in tables 8 to 10.

Table 8

Relationship of Children Negative Cognitive Errors Questionnaire and its Subscales with Anxiousness Scale (N=303)

CNCEQ Scales	Anxiousness
CATA	.64**
PERS	.66**
SA	.52**
OG	.70**
CNCEQ Total	.70**

**$p<.001$

Note: CATA=Catastrophizing, PERS=Personalization, SA=Selective Abstraction, OG=Overgeneralization, CNCEQ = Children Negative Cognitive Errors Questionnaire

Values of correlation coefficients in Table 8 indicate significant positive correlations ($p<.001$) of the subscales and total the scores of CNCEQ with Anxiousness scale (a subscale of SCPS). These findings indicate that CNCEQ has a good convergent validity and psychometrically sound measure to assess self-debasing cognitive errors.

Table 9

Relationship of How I Think Questionnaire and its Subscales with Aggression Scale (N=303)

HIT-Q Scales	Aggression
Self-Centered	.66**
Blaming Others	.61**
Mislabeling	.62**
Assuming the Worst	.70**
Anomalous Response	.46**
Positive Filters	-.15
HIT-Q Total	.67**

**$p<.001$
Note: SC=Self-Centeredness, BO=Blaming Others, ML=Mislabeling, AW=Assuming the Worst, AR=Anomalous Response, PF=Positive Filters, HIT-Q=How I Think Questionnaire

Results in table 9 indicate that all the subscales of HIT-Q have significant positive correlations ($p<.001$) with Aggression (a subscale of SCPS) except Positive Filters subscale which has a negative and non-significant correlation with aggression. Total scores on HIT-Q were also significantly and positively correlated ($p<.001$) with Aggression which indicate a good convergent validity of HIT-Q.

Table 10

Correlation between Children Negative Cognitive Errors Questionnaire (CNCEQ) and How I Think Questionnaire (HIT-Q) and their Subscales (N=303)

	AW	SC	BO	ML	AR	PF	HITT
CATA	-.42**	-.50**	-.45**	-.51**	-.22**	.22**	-.46**
PERS	-.64**	-.65**	-.62**	-.66**	-.40**	.27**	-.65**
SA	-.46**	-.48**	-.48**	-.43**	-.35**	.20**	-.47**
OG	-.58**	-.63**	-.60**	-.69**	-.30**	.20**	-.60**
CET	-.58**	-.63**	-.59**	-.62**	-.35**	.25**	-.60**

**p<.001
Note: AW=Assuming the Worst, SC=Self-Centeredness, BO=Blaming Others, ML=Mislabeling, AR=Anomalous Response, PF=Positive Filters, HITT=How I Think Total Scores, CATA=Catastrophizing, PERS=Personalizing, SA=Selective Abstraction, OG=Over Generalization, CET= Cognitive Errors Total

Table 10 shows correlations between the total and subscales of CNCEQ and HIT-Q. Results show that all the subscales and total scores on CNCEQ are significantly negatively correlated (p<.001) with each of the subscale and total scores of HIT-Q. These findings indicate that both scales CNCEQ and HIT-Q have good Discriminant validities

Item-total Correlations for the Study Scales

To examine the internal consistency of all the study scales, item-total correlations were computed for each of the scales and its subscale and the findings revealed that item-total correlation for SCPS (See *Appendix-L*) and its subsacles ranged fro .31** (p<.01) to .87** (p < .001). For SVITU (See *Appendix-M*) item-total correlation for subscales as well as with total scales ranged from .21* (p<.05) to .64** (p < .001). For CNCEQ (See *Appendix-N*) item-total correlation for subscales along with total scale ranged from .75** (p<.001) to .79** (p < .001). For HIT-Q, (See *Appendix-O*) item-total correlation for subscales along with total scale ranged from .63** (p<.001) to .87** (p < .001). In the last,

item-total correlation were computed for NEO-FFI (See *Appendix-P*) which ranged from .30** (p<.01) to .79** (p < .001).

Following Table 11 presents inter-scale correlations of the study variables. Findings show that the experience of adverse life events had significant positive correlations with emotional and behavioral problems of adolescents. Self-debasing cognitive errors also showed significant positive relationship with emotional and behavioral problems except aggression. Aggression had significant negative relationship with self-debasing cognitive errors while a significant positive correlation with self-serving cognitive errors. These self-serving cognitive errors showed a significant negative relationship with emotional problems (i.e. anxiousness, social withdrawal, somatic complaints, and feelings of rejection). Neuroticism demonstrated a significant negative correlation with all types of emotional and behavioral problems while extraversion, openness, agreeableness, conscientiousness, verbal, and nonverbal cognitive abilities exhibited significant negative relationship with these problems.

These findings give a direction of the relationship between the study variables as well as provide a baseline to test objectives and hypotheses of the main study. A positive relationship between the adverse experiences and adolecents' problem behaviors provide an empirical ground to examine a predictive effect of adverse life experiences on adolescent's emotional and behavioral problems. Similarly, positive association of cognitive errors and nuroticism with adverse experiences serves as baseline to test the moderating role of these factors in relationship between adverse life experiences on adolescent's emotional and behavioral problems. Moreover, a strong negative association of cognitive abilities, extraversion, openness, agreeableness, and conscientiousness with adverse experinecs empirically directs that these factors may also have a moderating effects on emotional and behavioral problems of adolescents.

e 11

scale Correlations of the Study Variables (N=303)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
E	-	.64**	.56**	.63**	.71**	.71**	.53**	.80**	.52**	.48**	.49**	.56**	.51**	.23**	.29**
X	-	-	-.89**	.81**	.67**	.58**	.34**	.61**	.73**	.78**	.76**	.81**	.69**	-.52**	-.56**
G	-	-	-	-.76**	-.60**	-.47**	.22**	-.49**	-.75**	-.77**	-.77**	-.79**	-.66**	.54**	.55**
	-	-	-	-	.65**	.52**	.27**	.58**	.77**	.80**	.78**	.81**	.75**	-.52**	-.55**
	-	-	-	-	-	.62**	.53**	.81**	.57**	.58**	.53**	.61**	.62**	-.35**	-.42**
	-	-	-	-	-	-	.63**	.85**	.41**	.39**	.41**	.48**	.46**	.18**	.25**
	-	-	-	-	-	-	-	.75**	.41**	.38*	.41**	.48**	.45**	.25**	.23**
	-	-	-	-	-	-	-	-	.42**	.39**	.39**	.46**	.51**	.18*	.24**
TA	-	-	-	-	-	-	-	-	-	.89**	.84**	.86**	.76**	-.58**	-.63**
RS	-	-	-	-	-	-	-	-	-	-	.89**	.91**	.79**	-.70**	-.71**
	-	-	-	-	-	-	-	-	-	-	-	.89**	.76**	-.63**	-.66**
G	-	-	-	-	-	-	-	-	-	-	-	-	.72**	-.61**	-.64**
ET	-	-	-	-	-	-	-	-	-	-	-	-	-	-.50**	-.62**
W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.82**
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Continued

	17	18	19	20	21	22	23	24	25	26	27	28	29	30
E	.26**	.21**	.14*	.20**	.59**	-.59**	-.51**	-.58**	-.54**	-.49**	-.59**	-.69**	-.71**	-.65**
X	-.53**	-.05	-.04	-.52**	.92**	-.89**	-.76**	-.86**	-.85**	-.47**	-.52**	-.65**	-.54**	-.59**
G	.52**	.01	-.03	.53**	.87**	-.83**	-.73**	-.80**	-.81**	-.47**	-.50**	-.59**	-.49**	-.55**
	-.52**	.03	.03	-.52**	.82**	-.76**	-.65**	-.69**	-.67**	-.42**	-.52**	-.65**	-.58**	-.57**
	-.39**	.18**	-.03	-.34**	.64**	-.63**	-.52**	-.59**	-.57**	-.59**	-.60**	-.66**	-.65**	-.67**
	.23**	.36**	-.18**	-.15*	.57**	-.51**	-.46**	-.53**	-.50**	-.58**	-.62**	-.68**	-.73**	-.70**
	.18**	.35**	-.17**	.22**	.29**	-.28**	-.27**	-.26**	-.28**	-.58**	-.54**	-.50**	-.55**	-.58**
	.19**	.36**	-.14*	.13*	.58**	-.54**	-.48**	-.53**	-.51**	-.70**	-.74**	-.76**	-.78**	-.80**
TA	-.59**	-.08	.09	-.61**	.76**	-.68**	-.56**	-.63**	-.64**	-.33**	-.45**	-.54**	-.42**	-.46**
RS	-.69**	-.19**	.10	-.73**	.76**	-.73**	-.57**	-.66**	-.66**	-.28**	-.38**	-.50**	-.38**	-.41**
A	-.64**	-.13*	.03	-.67**	.75**	-.68**	-.56**	-.65**	-.65**	-.40**	-.46**	-.59**	-.53**	-.52**
G	-.62**	-06	.04	-.63**	.79**	-.72**	-.60**	-.69**	-.69**	-.33**	-.46**	-.58**	-.51**	-.49**
ET	-.63**	-.09	.11*	-.63**	.70**	-.67**	-.54**	-.62**	-.58**	-.40**	-.42**	-.50**	-.47**	-.48**
W	.74**	.47**	-.12*	.93**	-.52**	.50**	.29**	.45**	.47**	-.11	-.03	-.02	-.05	-.05
E	.79**	.37**	-.12*	.90**	-.56**	.52**	.34**	.78**	.48**	-.10	-.03	-.02	-.06	-.05
O	.73**	.36**	-.15	.82**	-.46**	.42**	.41**	.25**	.33**	.37**	-.24*	-.26**	-.21*	-.26**

Conti

	17	18	19	20	21	22	23	24	25	26	27	28	29	30
L	-	.38**	-.02	.88**	-.54**	.51**	.31**	.42**	.46**	-.13	-.04	-.02	-.04	-.06
R	-	-	-.02	.57**	.08	-.08	-.16**	-.07	-.01	-.30**	-.28**	-.32**	-.36**	-.34**
	-	-	-	-.11	.05	-.06	.01	-.004	.08	.36**	.44**	.35**	.43**	.42**
TT	-	-	-	-	-.52**	.49**	.28**	.43**	.46**	-.17	-.11	-.07	-.14	-.14
EU	-	-	-	-	-	-.88**	-.76**	-.85**	-.82**	-.52**	-.55**	-.66**	-.53**	-.61**
TR	-	-	-	-	-	-	.78**	.85**	.83**	.49**	.50**	.61**	.46**	.56**
EN	-	-	-	-	-	-	-	.76**	.79**	.53**	.44**	.52**	.42**	.53**
RE	-	-	-	-	-	-	-	-	.84**	.50**	.50**	.61**	.51**	.57**
NS	-	-	-	-	-	-	-	-	-	.51**	.50**	.56**	.43**	.54**
OC	-	-	-	-	-	-	-	-	-	-	.89**	.82**	.72**	.94**
R	-	-	-	-	-	-	-	-	-	-	-	.86**	.80**	.94**
A	-	-	-	-	-	-	-	-	-	-	-	-	.81**	.94**
FO	-	-	-	-	-	-	-	-	-	-	-	-	-	.88**
AT	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VA	-	-	-	-	-	-	-	-	-	-	-	-	-	-

001, **$p < .01$, *$p < .05$

ALE=Adverse Life Events, ANX=Anxiety, AGG=Aggression, SW=Social Withdrawal, SC=Somatic Complaints, FR=Feeling of Rejection, AP
ms, TP=Total Problems, CATA=Catastrophizing, PERS=Personalization, SA=Selective Abstraction, OG=Over Generalization, CET=Cognitive Er
ssuming the Worst, BO=Blaming Others, SC=Self-Centeredness, ML=Mislabeling, AR=Anomalous Response, PF=Positive Filters, HITT=How I T
Neuroticism, EXTR=Extraversion, OPEN=Openness, AGRE= Agreeableness, CONS=Conscientiousness, VOC= Vocabulary, VR=Verbal
umerical Reasoning, INFO=Information, VAT=Verbal Ability Total, NVA Nonverbal Ability

Exploratory Analyses for Experiences of Adverse Life Events

The following sections contains some exploratory analyses to find out the ratio of the events that were experienced or not by the subjects, level of stress associated with the events, and manifestation of emotional and behavioral problems, cognitive errors and personality traits regarding each category of adverse life events. None of the subject of the pilot study sample experienced any event related to natural disasters category. Findings are illustrated trough graphs (Figure 2 to 22).

Figure 2 shows the percentage of each type of adverse events whether those were experienced or not by adolescents. Bar chart illustrates that most frequently experienced events were family related (91.70%) or personal/social (88.80%) types of adverse events.

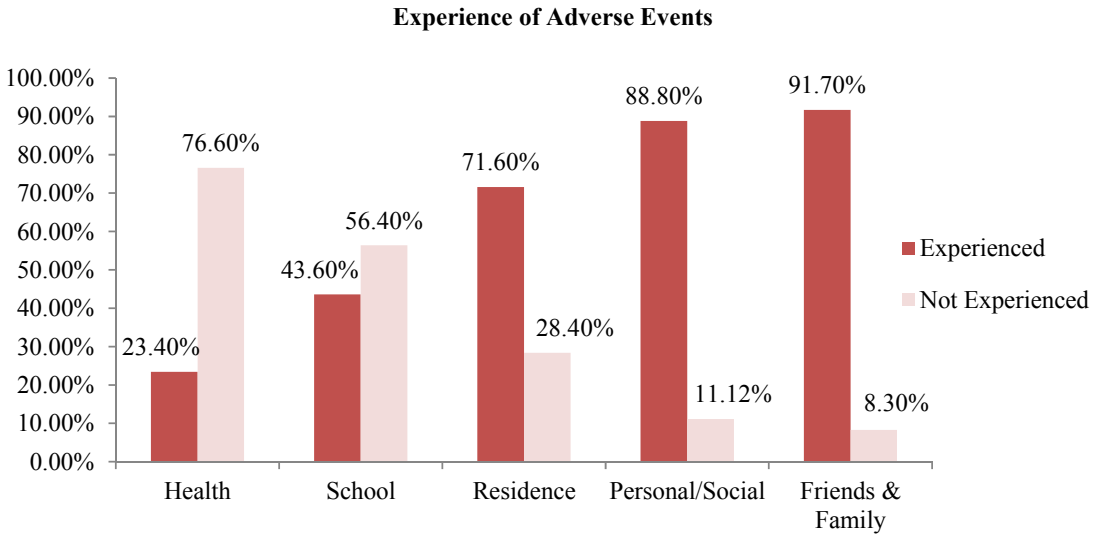

Figure 2. Percentage of adolescents with and without experience of different types of adverse life events

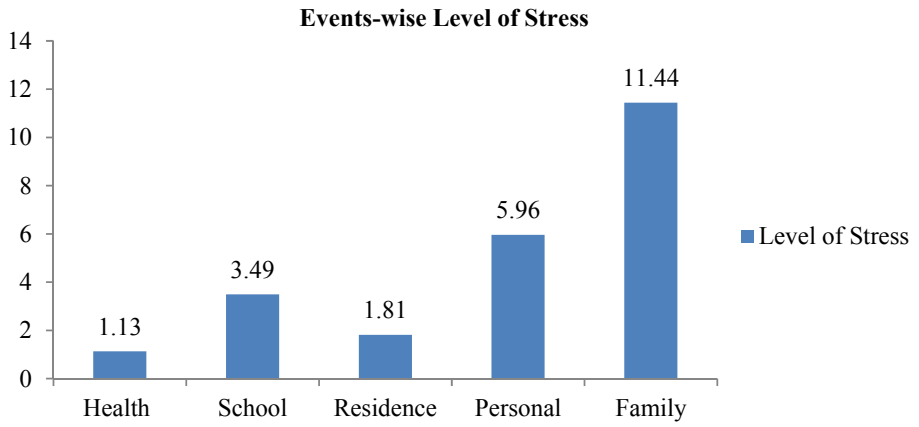

Figure 3. Level of stress associated with different types of adverse life events experienced by adolescents

Figure 3 depicts the level of stress associate with each type of adverse life events. Values indicate that family related adverse events were the most stressful (*M = 11.44*) as considered by the adolescents whereas health related events were percieved as the least stressful (*N = 1.13*) evens by the subjects.

Level of Emotional and Behavioral Problems (Figure 4-9)

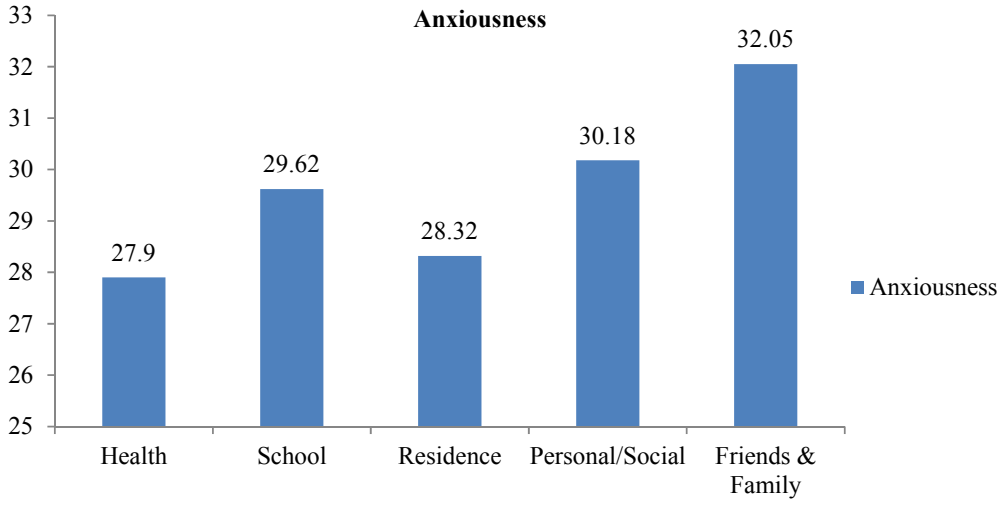

Figure 4. Level of anxiousness associated with different types of adverse life events experienced by adolescents

Figure 4 highlights the level of anxious among the adolescents who experienced differ adverse life events. Values of the Bar chart indicate that adolescents who mostly experienced friends and family related adverse events had the highest level of anxious (*M* = 32.05) whereas adolescents with health related experiences showed the minimum level of anxiousness (*M* = 27.9).

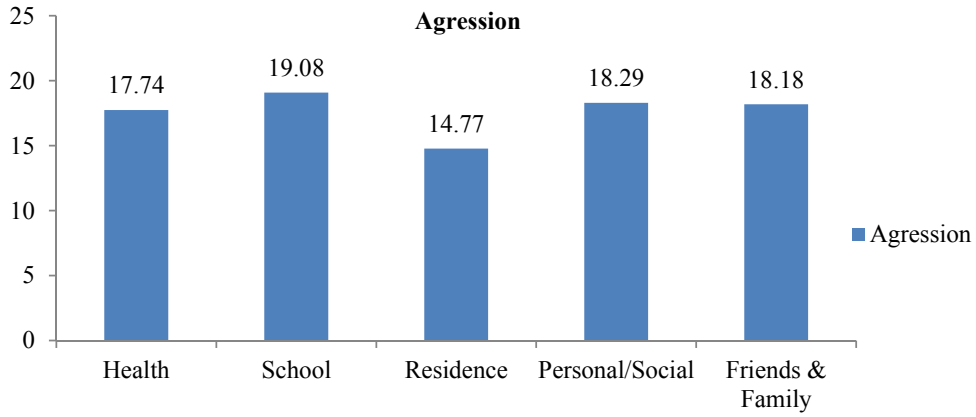

Figure 5. Level of aggression associated with different types of adverse life events experienced by adolescents

Figure 5 demonstrates the level of aggression with respect to each category of adverse events. Values of the bars show that the level of aggression was maximum in the adolescents experienced school related events more frequently (*M* = 10.08) while the adolescents with residence related negative experiences had the minimum level of aggression. (*M* = 14.7).

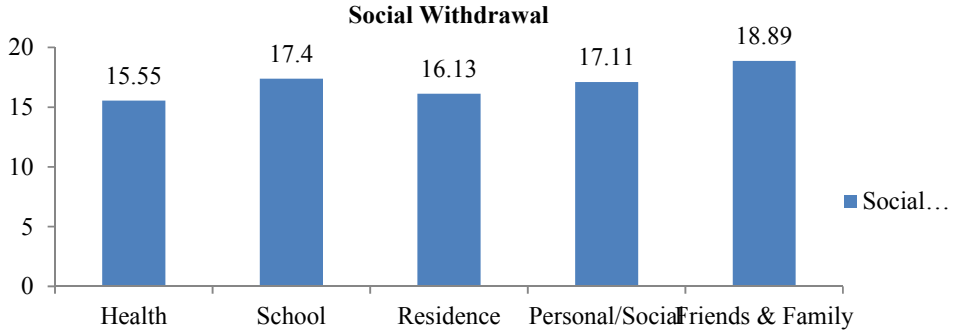

Figure 6. Level of social withdrawal associated with different types of adverse life events experienced by adolescents

Figure 6 illustrates the level of social withdrawal in each type of adverse life events. Data labels show that adolescents with mostly family related adverse experiences had the maximum level of social withdrawal (M = 18.89).

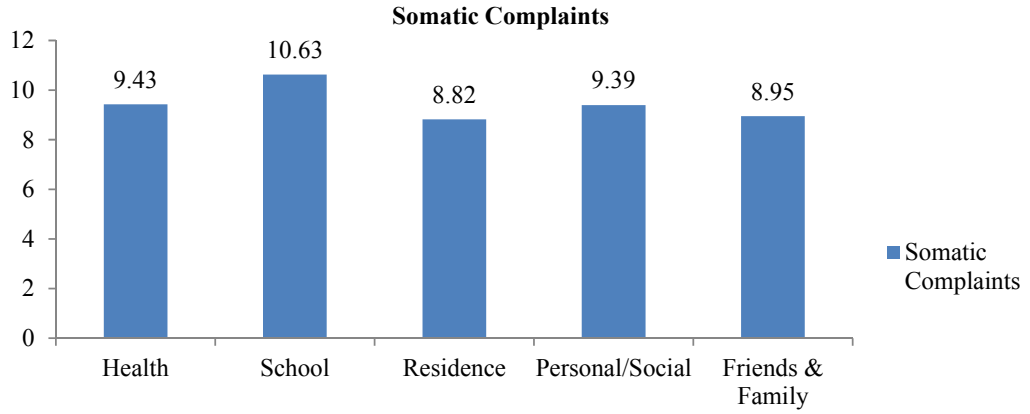

Figure 7. Level of somatic complaints associated with different types of adverse life events experienced by adolescents

Figure 7 illustrates the degree of somatic complaints with each category of adverse life events. Values of the chart reveal that highest level of somatic complaints occurred in the adolescents with school related adverse experiences (M = 10.63).

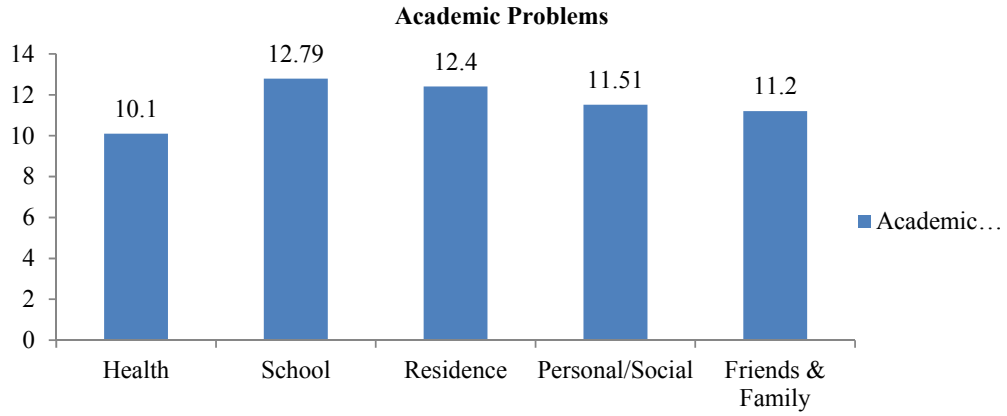

Figure 8. Level of academic problems associated with different types of adverse life events experienced by adolescents

Figure 8 describes the magnitude of academic problems with respect to each type of adverse life events. Data labels indicate that the maximum level of academic problems

was found in adolescents with experiences of school related adverse experiences (*M* = 12.79).

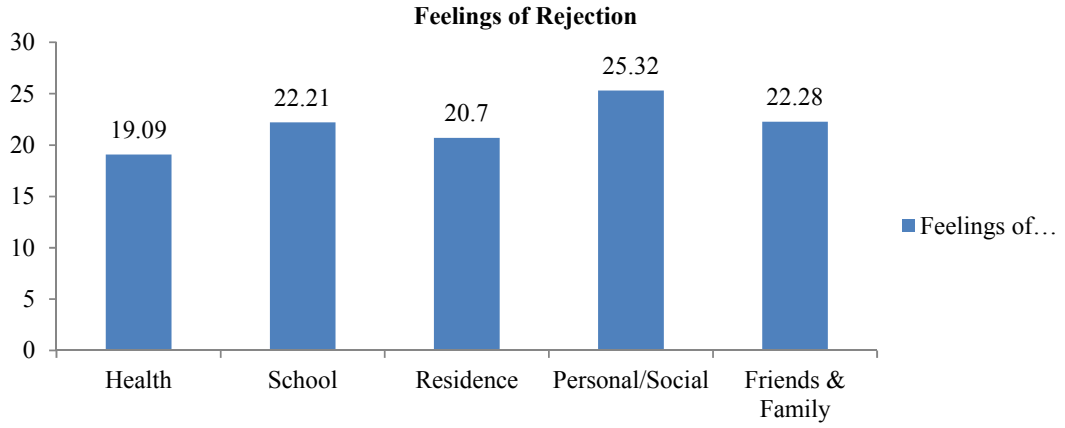

Figure 9. Level of Feelings of rejection associated with different types of adverse life events experienced by adolescents

Figure 9 displays the manifestation of the feelings of rejection with refernce to each type of adverse life events. Values of the graph indicate that the maximum level off rejection feelings occurred among adolescents with experiences of personal/social adverse events (*M* = 25.32).

Level of Self-debasing Cognitive Errors (Figure 10-13)

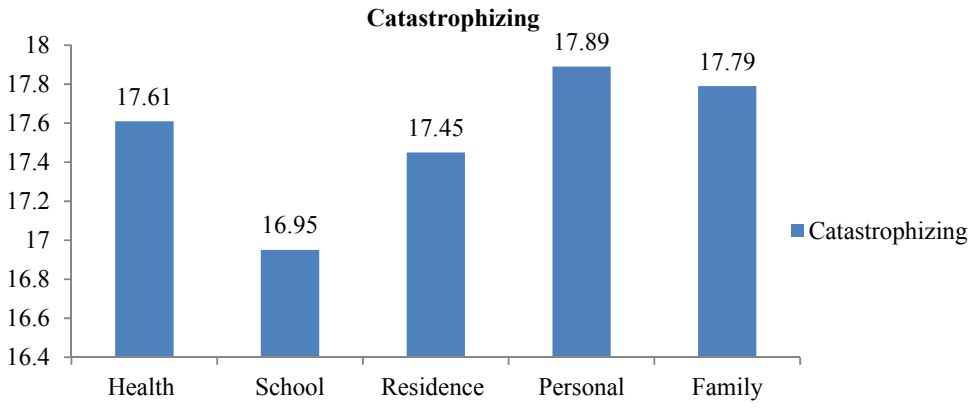

Figure 10. Level of catastrophizing error associated with different types of adverse life events experienced by adolescents

Figure 10 demonstrates the expression of catastrophizing in different categories of adverse life events. Values of the bar chart show that adolescents with personal (*M* = 17.89) and family (*M* = 17.79) related events commited the maximum level of catastrophizing. The level of this cognitive error was also high with health related adverse experiences (*M* = 17.61).

Figure 11 below depicts the manifestations of personalizing among adolescents with adverse life experiences. Values of the graph indicate that the highest level of personalizing was committed by adolescents having personal type of adverse events (*M* = 20.45).

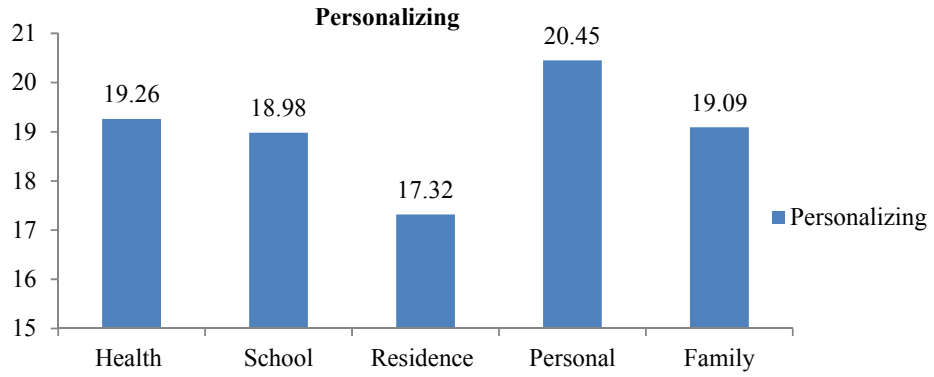

Figure 11. Level of personalizing error associated with different types of adverse life events experienced by adolescents

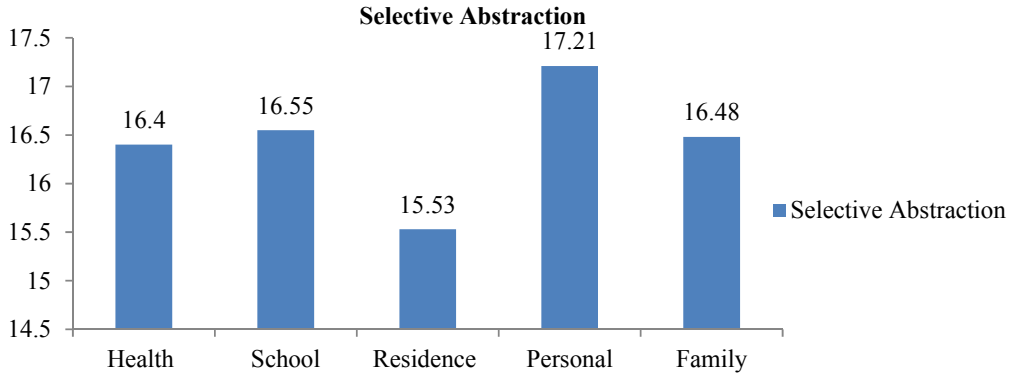

Figure 12. Level of selective abstraction error associated with different types of adverse life events experienced by adolescents

Figure 12 highlights the magnitude of selective abstraction with respect to different types of adverse life experiences. The values of the graph reveal that adolescents with personal type of adverse experiences showed the highest level of selective abstraction (*M* = 17.21).

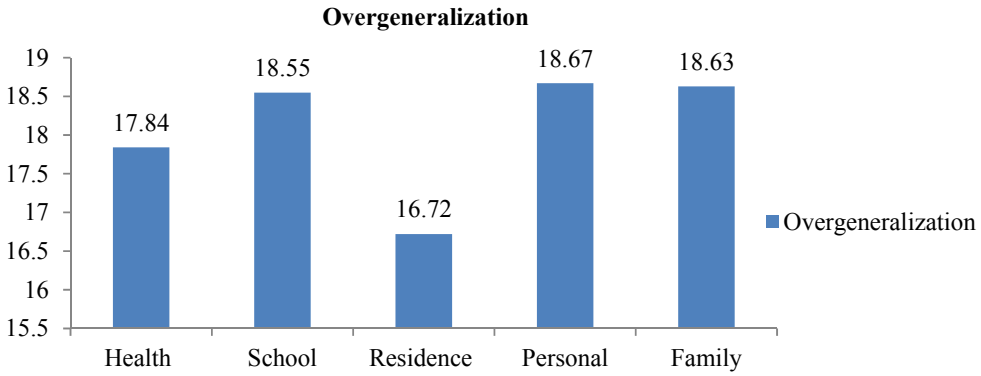

Figure 13. Level of over generalization error associated with different types of adverse life events experienced by adolescents

Figure 13 displays the magnitude of overgeneralization cognitive errors with respect to each category of adverse life events experienced by the adolescents. Data labels indicate that overgeneralization was almost equally high in personal (*M* = 18.67), family (*M* = 18.63), and school (*M* = 18.55) related adverse experiences.

Level of self-serving Cognitive Errors (Figure 14-17)

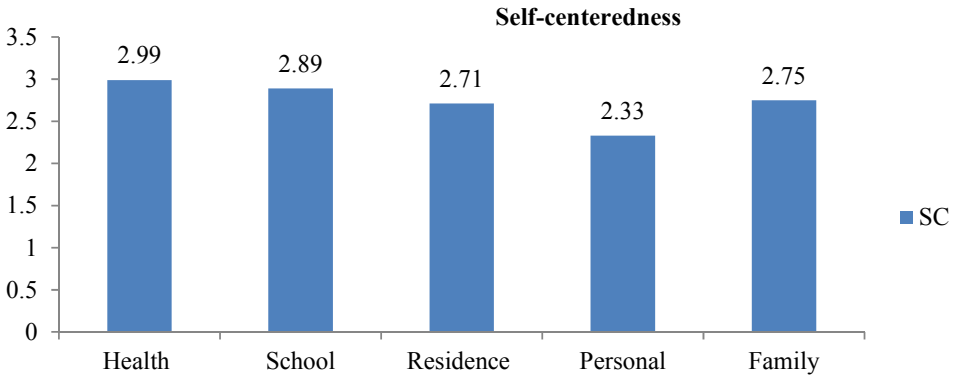

Figure 14. Level of self-centeredness error associated with different types of adverse life events experienced by adolescents

Figure 14 highlights the level of self-centeredness among adolescents having different types of adverse life events. Values of the graph depict that adolescents with health related experiences showed the maximum level of self-centeredness (M = 2.99).

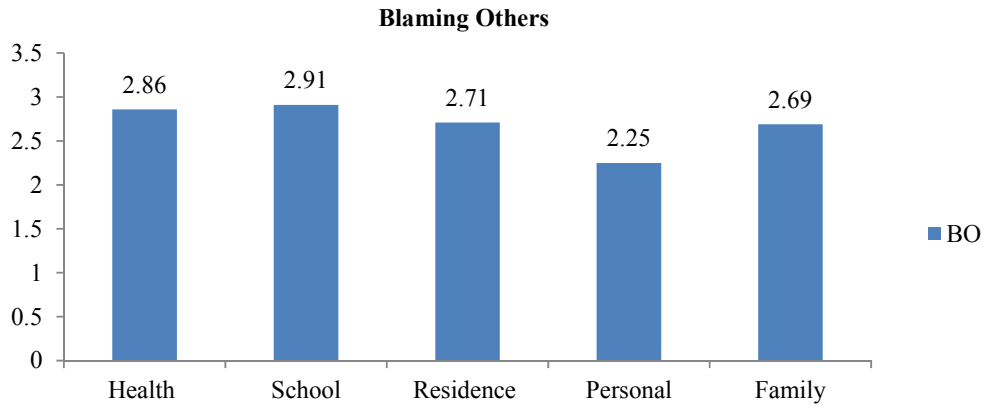

Figure 15. Level of blaming others error associated with different types of adverse life events experienced by adolescents

Figure 15 demonstrates the magnitude of blaming others with respect to different types of adverse life events experienced by adolescents. Values of the chart reveal that blaming others had the maximum level among adolescents with health (M = 2.86) and school related (M = 2.91) negative experiences.

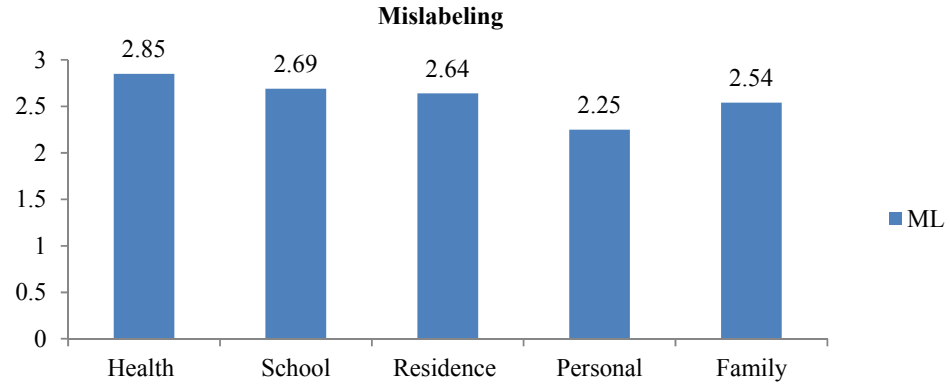

Figure 16. Level of mislabeling error associated with different types of adverse life events experienced by adolescents.

Figure 16 displays the level of mislabeling among adolescents with different adverse life experiences. Data labels indicate that the maximum level of mislabeling was shown by adolescents who had experienced health related adverse events (*M* = 2.85).

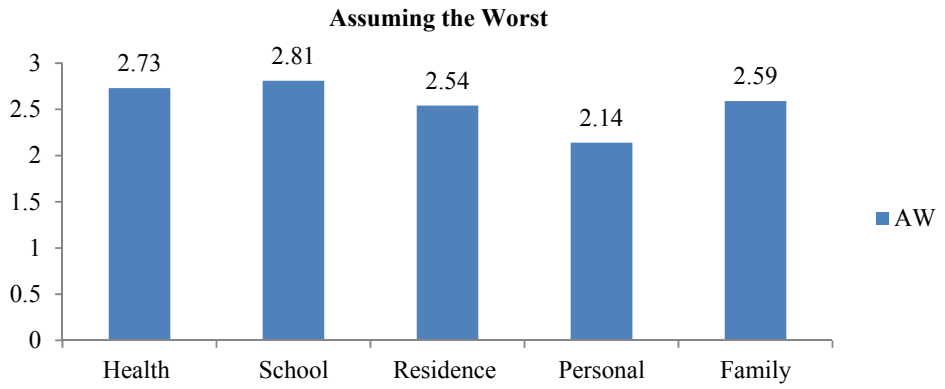

Figure 17. Level of assuming the worst error associated with different types of adverse life events experienced by adolescents

Figure 17 illustrates the level of assuming the worst with respect to different kinds of adverse life experiences of adolescents. Graphical values depict that the level of this cognitive error was highest among adolescents who had experienced health related events more frequently (M = 2.81).

Level of Personality Traits (Figure 18-22)

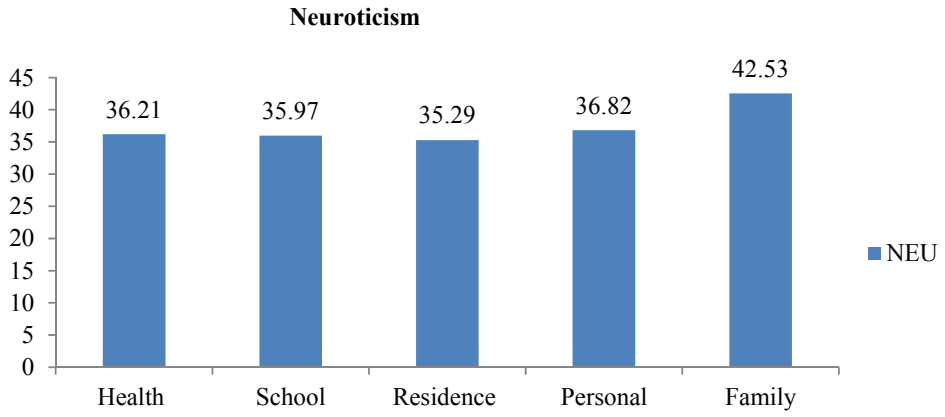

Figure 18. Level of neuroticism trait associated with different types of adverse life events experienced by adolescents.

Figure 18 demonstrates the level of neuroticism among adolescents with various kinds of adverse life experiences. Values in the graph reveal that adolescents who had experienced family related adverse life events expressed the highest level (M = 42.53) of neurotic symptoms than adolescents with other types of adverse experiences.

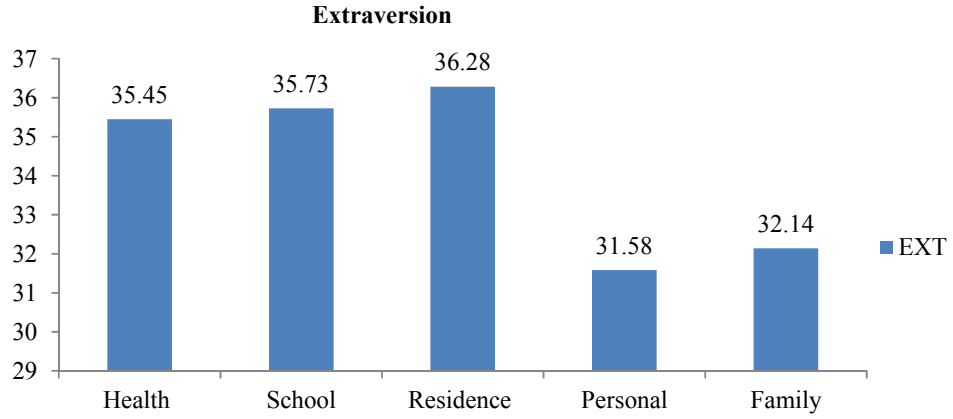

Figure 19. Level of extraversion trait associated with different types of adverse life events experienced by adolescents

Figure 19 highlights the level of extraversion with respect to different adverse life events experienced by the adolescents. Values of the bar chart indicate that the level of extraversion was at maximum among adolescents having residence related negative experiences (M = 36.28).

Figure 20 illustrates adolescents' level of openness with respect to various adverse life experiences. Values reveal the highest level of openness among adolescents with residence related negative experiences (M = 36.78).

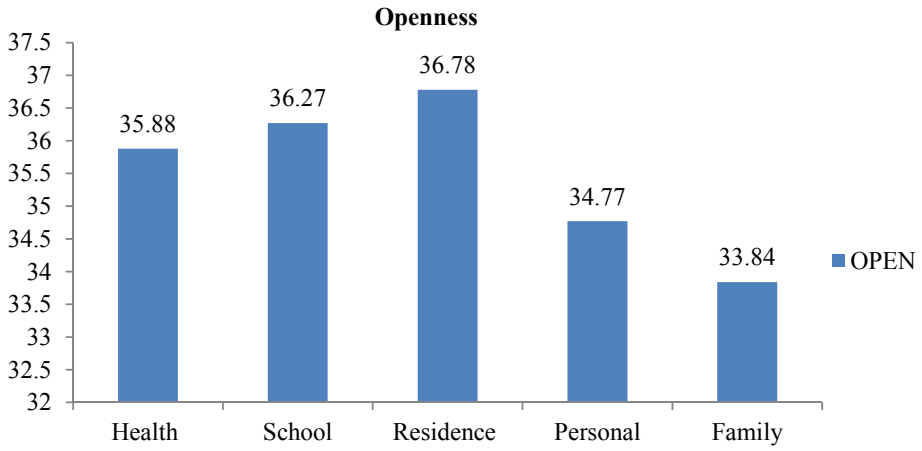

Figure 20. Level of openness trait associated with different types of adverse life events experienced by adolescents

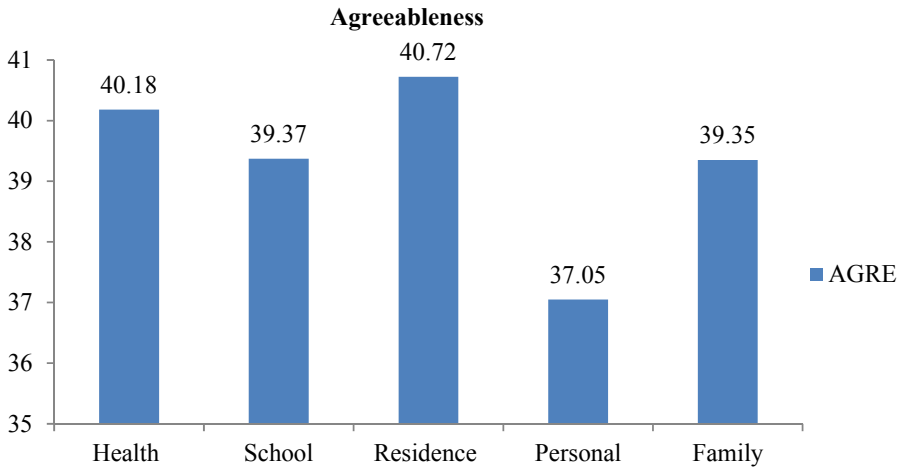

Figure 21. Level of agreeableness trait associated with different types of adverse life events experienced by adolescents

Figure 21 show the graphical presentation of the level of agreeableness among adolescents having different adverse life experiences. Chart values depict that adolescents who had experiences residence related adverse experiences showed the highest level of agreeableness (M = 40.72).

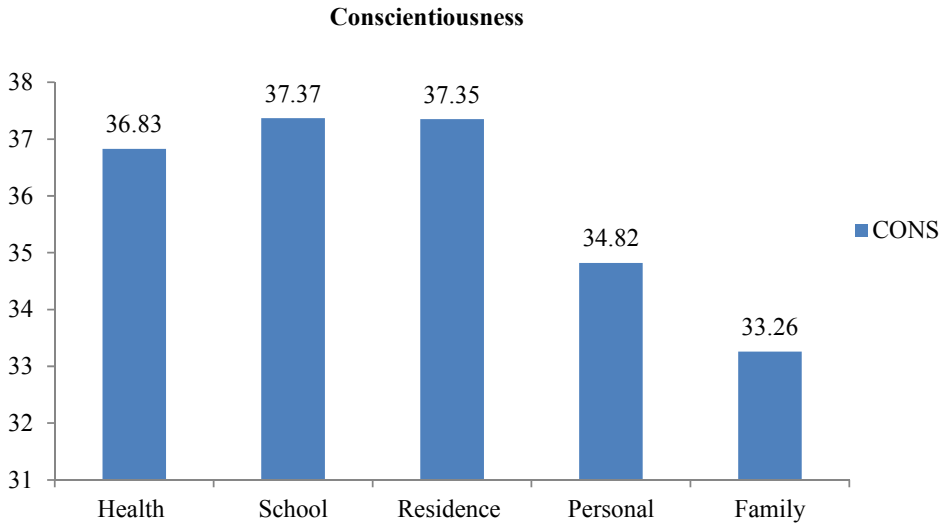

Figure 22. Level of conscientiousness associated with different types of adverse life events experienced by adolescents

Figure 22 depicts adolescents' level of conscientiousness across various adverse life events categories. Data labels reveal that the degree of conscientiousness was at maximum among adolescents with school related (M = 37.37) and residence related negative experiences (M = 37.35).

Discussion

Pilot study was primarily aimed validating ALES (which was developed in the first part of this study), examining the factor structure of CNCEQ and HIT-Q and establishing the psychometric characteristics i.e. reliability coefficients, and item-total correlations. This part of the study further purported to examine the direction of relationship between all the study variables.

Reliability Coefficients of the Study Scales

Third objective of pilot study was to determine the psychometric characteristics of all the study scales. To meet the objective, reliability estimates and item-total correlations were computed for ALES, SCPS, SVITU, RSPM, CNCEQ, HIT-Q and NEO-FFI.

Cronbach's Alpha coefficient of ALES for the present study was .81 (Table 2) which shows that scale is highly reliable and appropriate to use with adolescent for measuring their experiences of adverse life events. Results (Table 2) have also shown high reliabilities for SCPS (.90) and its sub-scales from .74 to .92 indicating that SCPS is a reliable measure to use with adolescents for emotional and behavior problems. Further the findings of item-total correlations (Table 60; See *Appendix-L*) revealed that all the items were significantly positively correlated with the total scores of their respective subscales demonstrating that all the sub scales of SCPS are internally consistent and reliable. These findings are congruent with that of Saleem & Mehmood (2011), as they reported high reliability coefficients for total and sub scales (α = .70 to .92) as well as high internal consistencies.

Reliability coefficients of CNCEQ and its subscales ranged from .90 to .94 (Table 2) which indicate that the scale is internally consistent. Later on, significant positive item-total correlations ranging from .65 to .85 (Table 62; See *Appendix-N*) further endorsed the internal consistency of CNCEQ and its subscales. These findings are aligned with the

results obtained in the original questionnaire (Leitenberg et al., 1986) and the subsequent researches (Pereira et al., 2012; Flouri & Panurgia, 2011; Kingery et al., 2009) reporting high internal consistency and alpha coefficients for CNCEQ and the subscales.

High reliability estimates and good internal consistencies added to the psychometric strength of HIT-Q. Values of alpha reliabilities for the total scale (α = .92) and subscales (.86 to .89) of HIT-Q are reported in Table 2 indicating that HIT-Q Urdu version is a psychometrically sound and reliable measure to be used with Pakistani adolescents. Results of item-total correlations (Table 63, See *Appendix-O*) were also significant and positive indicating that these constructs are internally consistent and closely related. Other studies have reported moderate to high correlations between the HIT-Q scales both in community samples of adolescents and young offenders (Nas et al., 2008). Positive Filters subscale showed a significant and negative correlation with all the self-serving cognitive distortion subscales consistent with Fernández et al., (2013).

Table 2 also provides alpha coefficients for the sub-domains of NEO-FFI. Reliability estimates of personality traits ranged from .74 to .88 for the presents study. Moreover, significant item-total correlations for each of the personality dimension (Table 64; See *Appendix-P*) added to its psychometric strength and endorsed the internal consistency and reliability of the scale. Existing researches (Hirschi & Herrmann, 2013; Gullone & Moore, 2000) provide support for our findings by claiming good reliability estimates for NEO-FFI. Altogether, findings of the present study conclude that NEO-FFI is a reliable measure to assess personality traits of adolescents.

Findings (Table 3) depicted that SVITU and its subscales have good alpha, KR-20 and split-half reliability coefficients (ranging from .71 to .95). Furthermore, significant item-total correlations for total and subscales of SVITU (Table 61; See *Appendix-M*) added confidence that SVITU is internally consistence and reliable measure to assess verbal

cognitive abilities of adolescents. These findings are closely aligned with the original study (Hussain, 2000) which reported high KR-20 and split-half reliabilities for SVITU and its subscales.

Alpha, KR-20 and split-half estimates were also calculated for RSPM (Table 10) which were .78, .78 and .75 respectively indicating that RSPM is an internally consistent and reliable measure to use with adolescents population. These findings are in line with the previous researches (i.e., Abdel-Khalek, 2005; Moran, 2008; Raven, 2000; Şahİn, Güler, & Basim, 2009) reporting dependable psychometric properties of RSPM.

Development and Validation of ALES

During the last few decades, owing to the unfortunate circumstances in the global scenario i.e., terrorism and extremism, social and political instability, poor socio-economic conditions, and meager healthcare profile; children and adolescents have been the most victimized population to suffer physically as well as psychologically. Along with their usual developmental pressures, exposure to these kinds of life adversities has put them at greater risk for the development of emotional and behavioral problems. Researchers have shown a surge interest in studying the effects of stressful life events on the mental health of children and adolescents. A couple of instruments i.e. Life Event Questionnaire (Norbeck, 1984), Adverse Life Events Scale (Tiet et al. 1998), The Life Events Checklist (Stack, Haldipur et al., 1987) and Life Events Checklist (LEC; Johnson & McCutheon, 1980) have been devised to measure the nature and intensity of negative life experiences.

However, these instruments intend to measure adverse life events experienced by adult population and none of them particularly focuses on the adverse experiences faced by children or adolescents. Moreover, all these measures have been gestated, formulated and validated in the western cultures with poor ecological validity in eastern cultures. This little cultures relevance of the events has been a major constraint in the global application of

these instruments. Although many of the events are universal in nature, occurring under the similar circumstances with the same intensity, but others are chiseled as well as emic in nature with specific local and contextual boundaries. So the import and blind use of these instruments in our culture may limit our understanding to the phenomenon being studied and we may omit many of the crucial and grievous events that have been occurring very frequently in Pakistan with the lasting and detrimental impacts on social and emotional health of its natives, particularly, the young population. As the purpose of the present study was to assess the impacts of adverse life events on adolescents' emotional and behavioral problems, so devising a culturally sensitive and appropriate tool to assess the magnitude and intensity of the possible adverse life experiences of adolescents was a pre-requisite of the study. Hence this was the primary objective of the pilot study, to develop and validate ALES to measure adolescents' experiences of adverse life events.

Efforts have been made to make ALES psychometrically valid and reliable measure. Scale was developed through reviewing the literature, already existing instruments of adverse life events and focus group discussions. Events occurring to the adolescents or children or significant others, relevant to different domains of their life (i.e., Health, School, Residence, Personal, Family & Friends and Natural Disasters), were added in the scale. After devising, the items were put in front of the subject matter experts for the critical review of the content and the face validity of the scale. To achieve the first objective of pilot study, the concurrent validity of ALES was established by correlating the scale with SCPS and its subscales. SCPS was set as criterion and it was expected that the adolescents having experiences of adverse life events will also score high on SCPS and its subscales. The significant positive correlations (Table 4) between ALES and SCPS and its subscales provided strong evidence that ALES has a good concurrent validity. Further evidence, to endorse these results, was earned by establishing the content validity of the

scale. Items were reviewed by the experts and minimum one third of the favorable ratio for each item was secured. Both the concurrent and content evidences are sufficient to justify that ALES is a valid instrument to measure adolescents' experiences of adverse life events in the indigenous Pakistani perspective and therefore can confidently be used for the main study as well.

Factor Structure of CNCEQ and HIT-Q

Second objective of the study was to determine the factor-structure and construct validity of CNCEQ and HIT-Q. The research, exploring the relationship between cognitive vulnerability and childhood anxiety is based on Beck's cognitive model (1979), postulating - that psychopathology is the result of systematic errors in perception and misinterpretation of environmental events. A better understanding of these malfunctioning cognitive processes in youth depends largely upon a reliable and valid instrument. Although a number of instruments, e.g., the Children's Attributional Style Questionnaire Revised (Thompson, Kaslow, Weiss, & Nolen-Hoeksema, 1998) and The Children's Dysfunctional Attitude Scale (Abela & Sullivan, 2003) have been developed to assess cognitive errors, most of these instruments focus on only one or two dimensions of the maladaptive cognitions. One instrument that covers a broader range of these cognitive distortions is Children's Negative Cognitive Errors Questionnaire (CNCEQ), developed by Leitenberg et al. (1986). Based upon Beck's cognitive behavior theory, CNCEQ measures four principal cognitive errors: catastrophizing, overgeneralization, personalization, and selective abstraction in three content areas (athletic, social and academic). CNCEQ has been frequently used to measure cognitive errors and faulty information processing among depressed (Kingery et al., 2009) and anxious (Karakaya et al., 2007; Pereira et al., 2012) youth. However, the cross-cultural application of CNCEQ depends upon the psychometric strength particularly the construct validity of the scale.

Earlier studies of probing into the factor structure of CNCEQ have shown inconsistent findings supporting a single-factor, three-factor and a four-factor model of CNCEQ. First time this inconsistency was pointed out by Cole and Turner (1993) who used confirmatory factor analysis with a non-clinical sample of 356 adolescents: findings supported a single-factor model instead of the four-factor structure proposed by Leitenberg et al. (1986). Stewart et al. (2004) supported the findings of Cole and Turner by using a sample of high school children and suggested a single-factor solution for CNCEQ.

However, a few studies have also supported the multiple factor solution of CNCEQ. Karakaya et al. (2007) had assessed 538 school children (aged 9 to 14 years) and identified a three-factor solution; namely 'catastrophizing', 'personalizing', and 'selective abstraction'. Later on, Kingery et al. (2009) supported a four-factor model comprised of three content areas (social, academic, athletic) and one general factor, but could not find support for the four basic factors proposed by Leitenberg et al. (1986). Summarizing this debate, a strong discrepancy exists between the psychometric studies about the factor structure of CNCEQ, which is yet to be resolved.

Notwithstanding its shortcomings, CNCEQ has promised its potential utility of advancing theory and evaluating cognitive vulnerability among youth being widely used with clinical (Messer Kempton, Van Hasselt, Null, & Bukstein, 1994) as well as community samples (Maric et al., 2011). In Pakistan, one study using the Urdu version of the CNCEQ was carried out comparing depressed with non-depressed adolescents (Rehna, et al., 2012). But the study did not report the factorial validity of CNCEQ with Pakistani adolescents and argued for future research to address the issue. And, up till now, the task has yet to complete.

To verify the four-factor model of CNCEQ in the presents study, CFA was computed (Table 5) on a sample of 303 adolescents but the findings did not support the

four-factor model of the questionnaire as none of the fit indices met the desired criteria for a good fitted model. Although these findings are in line with much of the existing literature (i.e., Cole & Turner, 1993; Kingery et al., 2009; Stewart et al., 2004) but the strong factor loadings of items on their respective subscales (Table 6) encouraged us to reassess the model in the main study with a larger sample.

Another CFA was computed to confirm the six-factor model of HIT-Q (Table 5) which was translated in the Step-II of the pilot study. As discussed previously, HIT-Q measures self-serving cognitive errors which are positively biased towards one's own self. Literature of developmental psychopathology not only focuses the relevance of cognitive content with internalizing problems but also highlight the role of cognitive vulnerability in the manifestation of externalizing problems e.g. aggression, conduct disorder, delinquency (Frey & Epkins, 2002; Garnefski et al., 2005). Cognitive distortions relating to externalizing or conduct are basically central to the social information-processing theory (Crick & Dodge, 1994; Dodge & Coie, 1987), which characterized these distortions/deficits as biases in the information processing and serve as intervening factors between the environmental experiences and behavioral responses. These distortions minimize the feelings of guilt and empathy by blaming others for their own misconduct and mislabeling other people for self-justification (Andreu & Peña, 2013; Barriga et al., 2009; Capuano, 2011; Plante et al., 2012; Van der Velden et al., 2010).

To assess these self-serving cognitive distortions, HIT-Q is the most frequently measure which was developed by Barriga and his colleagues (2001). Comprising of the six factors (self-centered, blaming others, minimizing/mislabeling, assuming the worst, anomalous responses and positive filters), HIT-Q has been translated and validated with samples of French-speaking adolescents (Nas, Brugman, & Koops, 2008; Plante et al., 2012) and Spanish adolescents (Fernandez et al., 2013). These studies have confirmed the

original factor structure of HIT-Q as proposed by Barriga et al. (2001) with English adolescents.

However in Pakistan, no instrument is available to assess self-serving cognitive distortions of adolescents. Since, HIT-Q is a theoretical based and empirically tested measure and has also been used for the clinical evaluations of adolescents (Gibbs, Potter, DiBiase, & Devlin, 2009), hence these promising results reinforced the present study to extend the use and applicability of the scale on Pakistani adolescents as well.

First, the scale was translated in Urdu using a back translation approach and followed by the execution of CFA (Table 5). However, the results of CFA did not support the six-factor model of HIT-Q with the Pakistani adolescents. These findings are quite contrary to the existing validations studies of HIT-Q (Barriga et al., 2001; Fernandez et al., 2013; Nas et al., 2008; Plante et al., 2012). But again, the strong factor loadings (Table 7) of each item against the respective subscales encouraged and reinforced us to reexamine the factor structure of HIT-Q in the main study with a larger sample.

Convergent and Discriminant Validity of CNCEQ and HIT-Q

Second objective of pilot study also aimed to examine the construct validity of CNCEQ and HIT-Q. This target was achieved through establishing convergent and discriminant validity coefficients (Table 8 to 10). To determine the convergent validity of CNCEQ (Table 8) the total scores and subscales were correlated with Anxiousness scale (a subscale of SCPS; Saleem & Mehmood, 2011). Findings revealed that Anxiousness showed significant positive correlation with all the subscales and with the total score of CNCEQ where 'Personalizing' showed the most significant relationship (r = .70, p < .001). These findings can be justified and supported by cognitive vulnerability model (Beck, Emery & Greenberg 1985; Kendall, 1985), postulating that anxious people tend to personalize the responsibility of any stressor or negative life event by amplifying and

magnifying the importance of that negative event, generalize it to all other similar or dissimilar arenas of life and have the cataclysmic view of that event (Beck et al. 1985). These findings reinforced the applicability and accuracy of CNCEQ to measure self-debasing cognitive errors of Pakistani adolescents.

To ascertain the convergent validity of HIT-Q (Table 9), the scale was correlated with Aggression Scale (a sub-scale of SCPS). The relationship between the self-serving cognitive distortion scales and aggression was in all cases in the expected direction. Particularly, when the different types of self-serving cognitive distortions were examined, all types showed significant correlation with aggression while "assuming the worst" showed the highest correlation. Interestingly, these results are quite in line with the study conducted by Fernandez et al. (2013). Convergent validity (r = .72) of the Spanish version was established with Reactive Proactive Aggression Questionnaire (Raine et al., 2006) and findings showed a significant relationship between cognitive distortions and both types of aggression. Further support comes from other researches (Andreu & Peña, 2012; Barriga et al., 2000; Calvete & Orue, 2010; Koolen et al., 2012) showing that committing any antisocial or aggressive behavior may trigger the feelings of shame and guilt which create a conflict between his misconduct and belief of being a good person. This state of dissonance can cause significant disturbance within the individual, hence, self-serving cognitive distortions are applied to relive this discrepancy. Because these errors alleviate or may completely dissolve the feelings of guilt, blame and responsibility, therefore, the individual feels protected from those negative feelings.

To establish the Discriminant validity (Table 10), CNCEQ (a measure of self-debasing cognitive errors) was correlated with HIT-Q (Gibbs et al., 2001), a measure of self-serving cognitive distortions. As expected a significant negative relationship emerged between the total scores of CNCEQ and HIT-Q (r = -.60, p < .001) and between each of

the sub-dimension of two scales, except positive filters dimension. Similar findings have been reported in the previous researches by Quiggle et al., (1992) and Barriga et al., (2000). These researches intended to explore the specific linkage of the two types of cognitive errors with internalizing and externalizing behavioral problems. Findings revealed that self-serving cognitive distortions were particularly related to externalizing behavioral problems i.e., conduct or anti-social behaviors whereas self-debasing cognitive errors were more proximal to internalizing behaviors i.e., anxiety and depression. These results also get theoretical justification, as proposed by Beck (1985), self-debasing cognitive errors (CNCEQ) are negatively biased and targeted towards one's own self with a tendency to personalize the responsibility of negative events and assuming the worst possible outcome.

On the contrary self-serving cognitive errors (HIT-Q) are negatively biased towards other people with the inclination of mislabeling and blaming others for one's own wrongdoings (Barriga et al., 2008). These findings provide an empirical support and endorse the discriminant validity of CNCEQ and HIT-Q for the present study and boost our confidence that both measures are psychometrically and appropriate to use with the youth in Pakistani culture.

Inter-scale Correlations

Last objective of pilot study was to examine the direction of relationship between the study variables. Table 11 displays results findings of inter correlations between the study variables and the values indicate that experience of adverse life events showed significant positive correlation with each of the emotional and behavioral problems of adolescents. These findings get justification and empirical support from numerous researches (i.e., Fischer, Dölitzsch, Schmeck, Fegert, & Schmid, 2016; Flouri, Hickey, Mavroveli, & Huury, 2011; Flouri & Kallis, 2011; Hagan, Sulik, Lieberman, 2015) reporting a significant positive association between negative or traumatic events and

adolescents' psychopathology. Kim et al. (2003) provided rather more comprehensive evidence by establishing an inverse relationship between stressful life experiences and internalizing and externalizing behavioral problems among adolescents.

Table 11 also revealed a significant that adolescents' problems showed significant positive relationship with self-debasing cognitive errors (catastrophizing, personalizing, selective abstraction and over generalization) and significant negative relationship with self-serving cognitive errors (self-centeredness, blaming others, mislabeling and assuming the worst). However aggression was positively associated with self-serving cognitive errors and positively associated with self-debasing cognitive errors. Based upon Beck's cognitive model (1976) a number of researches (Aldao, Nolen-Hoeksema & Schweizer, 2010; Beck & Freeman, 1990; Cannon & Weems, 2010; Leung & Poon, 2001; Weems & Silverman, 2006; Weems & Stickle, 2005) have confirmed a positive association between self-defeating cognitions and developmental psychopathology. These researches highlight that youth with emotional difficulties frequently exhibit tendencies of self-blaming for negative occurrences, magnifying the negative effect of these occurrences and attending towards the minor negative details while ignoring more salient positive features of an event. A recent study by Flouri and Panourgia (2014) further endorsed these findings by establishing a linear relationship between negative automatic thoughts and emotional and behavioral problems of adolescents. At the same time some researches (i.e., Barriga et al., 2001; Fernandez et al., 2013; Garnefski et al., 2005) claimed that self-serving cognitive distortions are more closely associated with externalizing behaviors e.g. antisocial, conduct or aggressive behaviors and show a negative relation with emotional symptoms. The aforementioned researches provide empirical justification and endorsed the findings of the present study.

For personality traits, problems behaviors showed positive relationship with neuroticism while negative relationship with extraversion, openness, agreeableness and conscientiousness (Table 11). These findings are also congruent with existing literature which demonstrates that youth with behavioral and emotional difficulties are characterized with higher level of neuroticism (Lahey & Waldman, 2003; Nigg, 2006; Slatcher & Trentacosta, 2011), and lower level of extraversion, openness, agreeableness, and conscientiousness (Costa & McCrae 1980; Goodwin & Engstrom 2002; Steel et al. 2008).

Verbal and nonverbal cognitive abilities showed significant negative relationship with adolescents' problems. The relation between behavioral problems and cognitive deficits has been widely reported. Researches (e.g., Halonen, Aunola, Ahonen, & Nurmi, 2006; Morgan, Farkas, Tufis, & Sperling, 2008; Trzesniewski, Moffitt, Caspi, Taylor, & Maughan, 2006) have supported the notion that cognitive abilities express a negative association with emotional or behavioral problems of adolescents and may display an inverse pattern over time. These studies establish an empirical base and enhance our confidence on the findings of the present study.

Exploratory Analyses on Adverse Life Events

Some exploratory analyses were also carried out to find the level of stress, emotional and behavioral problems, cognitive errors and personality traits with respect to different types of adverse life experiences of adolescents. Results have been displayed graphically from figure 2 to 22.

These findings revealed that family related adverse events were the most frequently experienced (Figure 2) and most stressful events (Figure 3) as reported by the adolescents. This illustration is quite in concord with the cultural perspective as Pakistan is a collectivist society where family bond is the most crucial and integral ecological base for individual survival. Family is the basic building block and serves as pillar to maintain

equilibrium and provide protection from any threat or insecurity that may hamper the wellbeing of its members. Particularly adolescents, being in their developing ages, are more dependent on their families to meet their economic, academic, psychosocial, and most importantly their emotional needs. Therefore any traumatic or negative event happening to their family members is perceived as the most stressful experience as it directly interferes with their emotional bond which ultimately results in the manifestation of different kinds of emotional problems (Figure 4, 6) i.e., anxiety and social withdrawal among children and adolescents.

However, somatic complaints, aggression and academic problems were higher in adolescents with experiences of school related adverse events. As reported by Torsheim and Wold (2001), students with high level of school related stress showed greater number of somatic symptoms e.g. headache, dizziness, abdominal pain and backache in comparison with those who experienced lower stress related to school domain. Hart, HodINFOinson, Belcher, Hyman, and Strickland (2013) later on confirmed these results and found a significant positive association between school stress and somatic symptoms among adolescents. Moreover, school related adversities i.e. conflicts with peers, educational system, and school violence have significant association with aggressive behaviors and academic problems of adolescents (Jin, Park, & Bae, 2011). These stressors may have an indirect relation with problem behaviors via low self-esteem or ego problems (Park, Choi, & Lim, 2014).

Figure 10 to 13 depict the degree of self-debasing cognitive errors with regard to various forms of adverse life events experienced by adolescents. Findings suggest that all four types of self-debasing cognitive errors (catastrophizing, personalizing, selective abstraction, and overgeneralization) were exhibited at a higher level by the adolescents who experienced personal types of adversities more frequently. Personal traumas or

stressful experiences i.e. child abuse or family neglect are usually marked by cognitive elements e.g. tendencies of self-deprecation and self-accusation (Poletti, Colombo & Benedetti, 2014). These self-degrading attitudes basically result from immature and maladaptive information processing and interpretation of the menace consorted with that adverse event.

Figure 14 to 17 provide graphical depiction of the degree of self-serving cognitive errors expressed in different sorts of adverse life experiences. As their name implies, *self-serving,* these errors have emerged as protective factors rather than risk factors in the context of adverse life experiences. Values of the graphs revealed that the magnitude of these errors was highest in health or school related events which were perceived as the least stressful types of events among all categories (as evidenced from Figure 3) by the adolescents. Researches (Hubbard & Pealer, 2009) have shown that school related traumas e.g. school failure, bullying or poor performance may generate the feelings of guilt and damage to self-image by activating egocentric bias in cognitive processing through which a young adolescent garbles reality to defend his ego. Such cognitive biases are characterized with an inclination to attribute positive outcomes and success to one's own self and assign negative consequences and failure to environmental causes (Coalson, 2014) and this trend prevails ubiquitously among adolescents.

Figure 18 to 22 represent the expression of personality traits of adolescents while experiencing different types of adverse life events. The level of neuroticism was highest among adolescents who had adverse experiences of family or personal domain (considered as more stressful by the subjects). Numerous researches (Bolger & Schilling, 1991; Bolger & Zuckerman, 1995; Gunthert, Cohen, & Armeli, 1999; Penley & Tomaka, 2002) have endorsed this notion that neurotic personalities show temperamental sensitivity and emotional instability toward threatening or stressful events or stimuli i.e. familial loss,

parental problems or conflicts (Ellenbogen & hodgins, 2004) and early life adversities including physical, emotional, and sexual abused etc (Herrenkohl, Sousa, Tajima, Herrenkohl, & Moylan, 2008). Moreover, individual with neurotic personality profile appraise such events as more stressful and tend to make negative evaluation of self, others, and their experiences more readily (Gunthert et al., 1999; Schwebel & Suls, 1999) than individuals with positive personality traits.

Summing up the discussion, findings of the pilot testing revealed that all the study scales show satisfactory psychometric properties including validity coefficients, reliabilities, item-total correlations, and inter-scale correlations. These results provide encouragement to use these measures in the main study for hypothesis testing phase. However, HIT-Q and CNCEQ are decided to be reexamined in the main study (on the basis of strong factor loadings and good convergent and discriminant validity of both measures) for the confirmation of factor-structure. Moreover all the correlations between the study variables lie in expected direction and are further endorsed by exploratory findings suggesting proceeding for the main study.

MAIN STUDY

Chapter V

Phase-III: Main Study

Phase-III of this research comprised of the main study which was planned to examine the impact of adverse life events on adolescents' emotional and behavioral problems and examining the moderating role of cognitive factors and personality traits. Main study purported to meet the following objectives:

Objectives

1. To study the impact of adverse life events, cognitive abilities (i.e., verbal, nonverbal), cognitive errors (i.e., self-debasing and self-serving), and personality traits on emotional and behavioral problems among adolescents
2. To study the moderating role of cognitive Factors (i.e., cognitive abilities and cognitive errors) in the relationship between the experience of adverse life events and emotional and behavioral problems among adolescents
3. To study the moderating role of personality traits in the relationship between the experience of adverse life events and emotional and behavioral problems among adolescents
4. To examine group differences for demographics on the study variables

Hypotheses

1. Adverse life events lead to emotional and behavioral problems among adolescents
2. Cognitive abilities (i.e., verbal and nonverbal) negatively predict emotional and behavioral problems among adolescents
3. Cognitive errors (i.e., self-debasing and self-serving) positively predict emotional and behavioral problems among adolescents
4. Neuroticism positively predicts emotional and behavioral problems among adolescents

5. Extraversion, agreeableness, openness, and conscientiousness traits negatively predict emotional and behavioral problems among adolescents
6. Verbal (i.e., vocabulary, verbal reasoning, Numerical Reasoning, and Information) and nonverbal cognitive abilities buffer the effects of adverse life events on emotional and behavioral problems of adolescents
7. Self-debasing (i.e., catastrophizing, personalizing, selective abstraction, and overgeneralization) and self-serving (i.e., self-centeredness, blaming others, mislabeling, and assuming the worst) cognitive errors boost the effects of adverse life events on emotional and behavioral problems of adolescents
8. Neuroticism personality trait boosts the effects of adverse life events on emotional and behavioral problems of adolescents
9. Extraversion, agreeableness, openness, and conscientiousness personality traits buffer the effect of adverse life events on emotional and behavioral problems of adolescents

Sample

Sample of the main study comprised of 663 adolescents (boys = 435, girls = 228) with the age ranged from 10-19 years (M = 15.22, SD = 1.66). Following a purposive convenient method, participants were approached from Government schools of Islamabad, Rawalpindi, and Gujarat cities of Pakistan with the consent of Directorate of Education, relevant authorities of the schools, and the adolescents themselves. Among the total sample, 52.5% belonged to joint family system. A sample of 720 adolescents was collected out of which the data of 57 participants was discarded because of incomplete information. The final sample of the main study, then, comprised of 663 adolescents with an attrition rate of almost 8%. The demographic detail of the main study sample is given in Table 12.

Table 12

Frequencies and Percentages of Demographic Characteristics of the Sample (N = 663)

Variables	*f*	*%*
Gender		
Boys	435	65.6
Girls	228	34.4
Missing	0	0
Age		
Early Adolescents	105	15.8
Middle Adolescents	416	62.7
Late Adolescents	142	21.4
Missing	0	0
Family System		
Nuclear	311	46.9
Joint	348	52.5
Missing	4	0.6%
Income Group		
Lower	167	25.2
Middle	234	35.3
High	184	27.8
Missing	78	11.8

Instruments

Same instruments (used in the pilot study) were used in the main study as well which are as under:

1. Consent Form and Demographic Sheet (See *Appendix A*)
2. Adverse Life Events Scales (ALES; See *Appendix C*)
3. School Children's Problems Scale (SCPS; See *Appendix D*)
4. Sajjad Verbal Intelligence Test Urdu (SVITU; See *Appendix* E)
5. Raven Standard Progressive Matrices(RSPM; See *Appendix F*)
6. Children's Negative Cognitive Errors Questionnaire (CNCEQ; See *Appendix G*)
7. How I Think Questionnaire (HIT-Q; See *Appendix I*)
8. NEO Five Factor Inventory (NEO-FFI; See *Appendix K*)

Procedure

Data collection was started with the permission of Directorate of Education and relevant authorities of the schools. These authorities were given a brief introduction about the nature and objective of the study and were assured of taking all the research ethics into account while collecting data from adolescents. After the permission was granted, participants were approached and were briefed about objective of the research. Their approval of participation in the research was requested with an assurance of their rights of confidentiality, privacy and quitting the research at any point. Their willingness was taken through a consent form, along with demographic information and then they were screened out on the basis of Adverse Life Events Scale (ALES) as we needed only those adolescents who had experienced any/some adverse life events during the last one year. After screening a booklet of questionnaires [i.e. School Children Problem Scale (SCPS), Children Negative Cognitive Errors Questionnaire (CNCEQ), How I Think Questionnaire (HIT-Q), Sajjad Verbal Intelligence Test Urdu (SVITU), Raven's Standard Progressive Matrices (RSPM), and NEO-Five Factor Inventory (NEO-FFI)] was handed over to the participants. Again the instruments were administered individually in two consequetive days because of the large number and length of the instruments. Each individual took almost 50 minutes to complete the questionnaire on each day of the data collection. Participants were given instructions in Urdu as all the questionnaires were transcribed in Urdu language. All the participants were provided refreshment on both days of data collection. The whole research was conducted on the expense provided by Higher Education Commission of Pakistan.

Results

This section holds the results of the main study analyses regarding hypothesis testing. Main study was aimed at examining the impact of adverse life events, cognitive abilities (i.e., verbal and nonverbal), cognitive errors (i.e., self-debasing and self-serving) and personality traits on adolescents' emotional and behavioral problems. The study also intended to observe the moderating power of cognitive abilities, cognitive errors, and personality traits in the relationship between experience of adverse life events and emotional and behavioral problems of adolescents. In order to meet the aforementioned objectives and to test the hypotheses of this study, linear and multiple regression analyses as well as moderation analyses were carried out in this section. Some additional analyses were also carried out to investigate group differences on demographic factors (i.e. gender, family system, age, and income) for all the study variables.

As previously discussed (p. 79 and 80), it was decided in the pilot study to re-examine the factor structure of CNCEQ and HIT-Q on the basis of strong factor loadings of items on the respective subscales and good convergent and discriminant validity. Indices of the model fit for both scales are given in Table 13.

Table 13

Goodness-of-Fit Indicators for Four-Factor Model of Children Negative Cognitive Errors Questionnaire and Six-Factor Model of How I Think Questionnaire (N=663)

Model	χ^2	*Df*	χ^2/df	CFI	NFI	RMSEA
CNCEQ	956.13	218	4.38	.93	.92	.07
HIT-Q	5632.93	1320	4.26	.91	.89	.07

Note: CNCEQ = Children Negative Cognitive Errors Questionnaire; HIT-Q = How I Think Questionnaire

Table 13 shows the goodness of fit indices for the four-factor model of CNCEQ and six-factor model of HIT-Q. Values of both models indicate acceptable fit as the values of RMSEA (.07 and .07) are less than .08 falling in acceptable range. The values of CFI and

NFI are greater than .90 and indicate a good fit for the four-factor model of CNCEQ and the six-factor model of HIT-Q.

Table 14

Reliability Estimates and Descriptive statistics of the study variables (N=663)

Scales	No. of Items	α	*M*	*SD*	Skewness	Kurtosis
ALES	87	.90	104.39	43.35	.36	.62
Anxiousness	12	.91	23.89	10.81	.53	-1.02
Aggression	8	.89	23.06	5.71	.26	-1.37
Social Withdrawal	7	.85	14.98	5.69	.33	-.97
Somatic Complaints	4	.83	7.75	3.51	.50	-.98
Academic Problems	8	.85	17.58	7.92	.75	1.24
Feelings of Rejection	5	.91	9.52	4.90	.68	-.91
Catastrophizing	6	.87	15.04	6.68	.73	-.41
Personalizing	6	.88	17.56	7.11	.23	-.79
Selective Abstraction	6	.84	14.62	5.73	.51	-.41
Over Generalization	6	.89	15.08	7.19	.69	-.67
Self-centeredness	9	.85	4.97	.66	.12	-1.22
Blaming Others	10	.84	4.56	.87	.14	-.55
Mislabeling	9	.80	1.52	.43	.1.19	1.01
Assuming the Worst	11	.85	1.43	.39	1.09	1.06
Neuroticism	12	.84	38.42	9.87	-.24	-.51
Extraversion	12	.70	15.67	2.88	.40	-.81
Openness	12	.52	34.70	7.49	-.04	-.47
Agreeableness	12	.66	36.51	8.15	.10	-.39
Conscientiousness	12	.70	36.69	8.32	-.41	-.52
Vocabulary	42	.86	22.29	10.19	.23	-1.50
Verbal Reasoning	20	.66	10.71	3.49	-.20	-.94
Numerical Reasoning	36	.88	20.97	7.53	-.05	-1.38
Information	30	.86	17.86	5.50	-.28	-.93
Nonverbal Ability	60	.93	29.17	6.16	-.45	-.36

Table 14 displays alpha coefficients and descriptive statistics for all the study variables. Values suggest that all alpha coefficients of all the study scales lie in satisfactory range indicating the good reliability power of the scales. Values of kurtosis and skewness also lie in acceptable range providing the evidence that the data was normally distributed.

Predictive Role of Study Variables for Emotional and Behavioral Problems

Linear regression analysis was used to investigate the impact of adverse life experiences and nonverbal cognitive ability on adolescents' emotional and behavioral problems. To examine the impact of verbal cognitive abilities, cognitive errors and personality traits on problems, multiple regression analyses were computed by using 'Enter Method Approach.' Pallant (2007) preferred this method as it calculates the joint effect of the set of independent variables on the outcome variable as well as evaluates the individual predictive power of each of the independent variable. As the present study aimed at exploring the predictive effects of the study variables on emotional and behavioral problems so it was more significant to conduct predictive analyses separately. Following tables (15-20) present the results of regression analyses on emotional and behavioral problems by adverse life events and other independent variables.

Table 15 shows the impact of the experience of adverse life events emotional and behavioral problems of adolescents. Findings indicated that by taking the experience of adverse life events as the predictor of anxiousness, the magnitude of the model fit (ΔR^2 = .11) revealed significant relationship (F = 80.15, p < .001) by contributing 11% of variability in anxiousness. This implies that one unit increase in the experience of adverse life events will result in .33 increase in anxiousness (B = .33). These findings indicate that experience of adverse life events is a significant predictor of anxiousness among adolescents. The value of Adjusted R^2 (ΔR^2 = .09) with significant F ratio (F = 67.71, p < .001) reflects that experience of adverse life events accounts for 9% variance in aggression.

Assessing beta weights reflect that increasing the experience of adverse life events by one unit will increase adolescent aggression by .31 units ($B = .31$, $\beta = .04$, $p < .001$).

Table 15

Regression Analysis on Emotional and Behavioral Problems by Adverse Life Events (N=663)

Adverse Life Events	*B*	*SE B*	*B*	95% CI *LL*	95% CI *UL*
Anxiousness					
	.08	.01	.33**	.06	.10
$R = .33$, $R^2 = .11$, $\Delta R^2 = .11$ ($F = 80.15$**)					
Aggression					
	.04	.005	.31**	.03	.05
$R = .31$, $R^2 = .09$, $\Delta R^2 = .09$ ($F = 67.71$**)					
Social Withdrawal					
	.04	.005	.32**	.03	.05
$R = .32$, $R^2 = .10$, $\Delta R^2 = .10$ ($F = 76.53$**)					
Somatic Complaints					
	.03	.003	.30**	.02	.03
$R = .30$, $R^2 = .09$, $\Delta R^2 = .09$ ($F = 66.55$**)					
Academic Problems					
	.05	.01	.29**	.04	.07
$R = .29$, $R^2 = .08$, $\Delta R^2 = .08$ ($F = 60.14$**)					
Feelings of Rejection					
	.03	.004	.30**	.03	.04
$R = .30$, $R^2 = .09$, $\Delta R^2 = .09$ ($F = 65.69$**)					

**$p<.001$

For social withdrawal, experience of adverse life events explained 10% of variability with significant F ratio ($\Delta R^2 = .10$, $F = 66.55$, $p < .001$). Assessing beta weights reflect that one unit increase in the experience of adverse life events will increase social withdrawal by .32 units ($B = .32$, $\beta = .04$, $p < .001$). The value of Adjusted R^2 ($\Delta R^2 = .09$) for somatic complaints indicate that experience of adverse life events explained up to 9% variability in somatic complaints among adolescents with significant F ratio ($F = 66.55$, $p < .001$). Beta values indicated that one unit increase in adverse life events experience will lead to .30 units increase in somatic complaints ($B = .30$, $\beta = .03$, $p < .001$). For academic problems 8% of variance ($\Delta R^2 = .08$, $F = 60.14$, $p < .001$) and for rejection 9% of variance ($\Delta R^2 = .09$, $F = 65.09$, $p < .001$) was explained by the experience of adverse life events.

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le Regression Analysis on Emotional and Behavioral Problems by Verbal Cognitive Abilities (N=663)

	Anxiousness					Aggression					Social Withdrawal				
				95% CI					95% CI					95% CI	
	B	*SE B*	*β*	*LL*	*UL*	*B*	*SE B*	*β*	*LL*	*UL*	*B*	*SE B*	*β*	*LL*	*UL*
C	-.48	.07	-.45**	-.62	-.33	-.26	.04	-.47**	-.34	-.18	-.25	.04	-.46**	-.33	-.18
	-.66	.23	-.21**	-1.11	-.19	-.05	.13	-.03	-.29	.19	-.31	.12	-.19*	-.55	-.07
	-.49	.12	-.35**	-.73	-.27	-.25	.06	-.32**	-.37	-.12	-.25	.06	-.33**	-.37	-.13
O	-.05	.14	-.02	-.33	.24	-.13	.08	-.13	-.28	.02	-.02	.08	-.02	-.17	.13
	= .39, R^2= .15, ΔR^2= .15 (F = 29.53**)					R = .36, R^2= 13, ΔR^2=.12 (F=24.51**)					R = .39, R^2= .15, ΔR^2=.15 (F=29.24**)				
	Somatic Complaints					Academic Problems					Rejection				
C	-.15	.02	-.42**	-.19	-.10	-.27	.06	-.35**	-.38	-.16	-.18	.03	-.38**	-.25	-.11
	-.11	.08	-.10	-.26	.05	-.45	.17	-.20*	-.79	-.11	-.30	.11	-.21**	-.51	-.09
	-.15	.04	-.32**	-.22	-.08	-.39	.09	-.37**	-.56	-.22	-.23	.05	-.35**	-.33	-.12
O	-.07	.05	-.12	-.17	.02	-.15	.11	-.11	-.37	.06	-.06	.07	-.07	-.19	.07
	= .37, R^2= .14, ΔR^2= .13 (F = 25.96**)					R=.33, R^2= .11, ΔR^2=.11 (F=20.69**)					R = .36, R^2=.13, ΔR^2=.12 (F=23.94**)				

001, **p<.01, *p<.05

V-A= Verbal Ability Scale, VOC = Vocabulary, VR=Verbal Reasoning, NA=Numerical Reasoning, INFO=Information

Results in table 16 show the impacts of verbal cognitive abilities on each of the emotional and behavioral problems of adolescents. Findings indicate that verbal cognitive abilities jointly accounted for 15% of variance in the anxiousness dimension of emotional and behavioral problems of adolescents with a significant F ratio (ΔR^2 = .15, F = 29.53, p < .001). Findings highlighted vocabulary as the strongest negative predictor (B = -.48, β = -.45, p < .001) of anxiousness suggesting that one unit increase in the ability of vocabulary will result in .48 units decrease in anxiousness. Similarly one unit increase in Numerical Reasoning (B = -.49, β = -.35, p < .001) will decrease anxiousness by .49 units. To predict aggression among adolescents the magnitude of the model fit (ΔR^2 = .12), revealed significant overall relationship (F = 24.51, p < .001) by contributing 12% of variance in aggression. Beta values indicate that vocabulary was the strongest negative predictor (B = -.26, β = -.47, p < .001) of aggression. Numerical Reasoning was another significant predictor (B = -.25, β = -.32, p < .001) suggesting that one unit increase in Numerical Reasoning will decrease aggression by .25 units. For social withdrawal verbal cognitive abilities collectively explained up to 15% of variance (ΔR^2 = .15, F = 29.24, p < .001). Again vocabulary was the strongest negative predictor (B = -.25, β = -.46, p < .001) of social withdrawal and indicated that by one unit increase in Information ability, social withdrawal will be decreased by .25 units. Numerical Reasoning and verbal reasoning were also significant negative predictors of social withdrawal. The value of Adjusted R^2 for somatic complaints indicates that all the verbal abilities jointly accounted for up to 13% of variance (ΔR^2 = .13, F = 25.96, p < .001) in somatic complaints among adolescents. Findings show that numerical vocabulary and Numerical Reasoning were the strong negative predictors of somatic complaints. Beta weights for vocabulary (B = -.15, β = -.42, p < .001) reflect that increasing the ability by one unit will result in .15 units decrease in somatic complaints of adolescents. Whereas one unit increase in the Numerical

Reasoning will decrease somatic complaints by .15 units (B = -.15, β = -.32, $p < .001$). For academic problems verbal abilities collectively contributed up to 11% of the total variance (ΔR^2 = .11, F = 20.69, $p < .001$). Findings indicate that Numerical Reasoning was the strongest negative predictor of academic problems (B = -.39, β = -.37, $p < .001$). Beta value implies that increasing that ability of Information will decrease the academic problems among adolescents by .39 units. Whereas the ability of vocabulary, as negative predictor (B = -.27, β = -.35, $p < .001$) explained decrease in academic problems by .27 units. To predict rejection among adolescents verbal abilities collectively explained 12% of variance (ΔR^2 = .12, F = 23.94, $p < .001$). Vocabulary was a stronger negative predictor (B = -.18, β = -.38, $p < .001$) of rejection reflecting that one unit increase in vocabulary will decrease feelings of rejection by .18 units. The second strong predictor was the Numerical Reasoning (B = -.23, β = -.35, $p < .001$) and the beta value indicates that one unit increase in Numerical Reasoning will decrease feelings of rejection by .23 units. Results also show that the Information ability did not account for significant variance in any of the adolescents' problems. Overall findings indicate that all the verbal abilities showed negative associations with each of the emotional and behavioral problems of adolescents suggesting that increase in verbal cognitive abilities will decrease the effects of emotional or behavioral problems on adolescents.

Table 17

Regression Analysis on Emotional and Behavioral Problems by Nonverbal Cognitive Abilities (N=663)

				95% CI	
Nonverbal Ability	*B*	*SE B*	*β*	*LL*	*UL*
	Anxiousness				
	-.08	.06	-.05	-.19	.04
R = .05, R^2= .003, ΔR^2= .001 (F = 1.69)					
	Aggression				
	-.14	.03	-.18**	-.19	-.08
R = .18, R^2= .03, ΔR^2= .03 (F = 21.27**)					
	Social Withdrawal				
	-.03	.03	-.04	-.09	.03
R = .04, R^2= .001, ΔR^2= .000 (F = .97)					
	Somatic Complaints				
	-.001	.02	-.002	-.04	.03
R = .002, R^2= .000, ΔR^2= .002 (F = .003)					
	Rejection				
	-.05	.04	-.04	-.13	.03
R = .05, R^2= .002, ΔR^2= .001 (F = 1.38)					
	Academic Problems				
	-.09	.03	-.13**	-.14	-.04
R = .13, R^2= .02, ΔR^2= .02 (F = 11.42**)					

**p<.01; p>.05 = non-significant

Table 17 shows the impact of the nonverbal cognitive ability on each of the emotional and behavioral problems of adolescents. Findings indicate that nonverbal cognitive ability emerged as significant predictor of aggression (ΔR^2= .03, β = .18, F = 21.27, p < .001) and academic problems (ΔR^2= .02, β = .13, F = 11.42, p < .01) by contributing 3% of variability in anxiousness and 2% variance in academic problems respectively. However, for all other problems nonverbal cognitive ability did not show significant predictive power (p > .05).

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ple Regression Analysis on Emotional and Behavioral Problems by Children Negative Cognitive Errors (N=663)

	Anxiousness					Aggression					Social Withdrawal			
				95% CI					95% CI					95% C
EQ	*B*	*SE B*	*β*	*LL*	*UL*	*B*	*SE B*	*B*	*LL*	*UL*	*B*	*SE B*	*β*	*LL*
RS	.47	.15	.35**	-.11	.49	-.35	.098	-.37**	-.44	-.06	.22	.07	.35**	.08
TA	.29	.16	.26**	-.003	.63	-.25	.09	-.29**	-.33	.03	.07	.08	.13	-.08
G	.33	.15	.23*	-.17	.78	-.19	.09	-.22*	-.37	-.01	.19	.07	.27*	.05
A	.21	.14	.19	-.12	.45	-.17	.09	-.15	-.35	.01	.13	.07	.15*	-.01
	R=.82, R^2=.67, ΔR^2=.66 (*F*=152.46**)					*R*=.81, R^2=.66, ΔR^2=.66 (*F*=148.02**)					*R*=.83, R^2=.70, ΔR^2=.69 (*F*=173.07			
	Somatic Complaints					Academic Problems					Rejection			
RS	.11	.04	.42**	.03	.18	.29	.07	.27**	.17	.43	.19	.06	.53**	.08
TA	.004	.04	.01	.06	.08	.35	.08	.29**	.19	.50	.16	.07	.37*	.02
G	.10	.04	.35*	.03	.18	.67	.08	.61**	.52	.83	.22	.07	.52**	.09
A	.05	.04	.14	.02	.18	.43	.08	.31**	.26	.59	.06	.06	.12	.008
	R=.62, R^2=.38, ΔR^2=.37 (*F*=46.73**)					*R*=.50, R^2=.25, ΔR^2=.25 (*F*=54.77**)					*R*=.50, R^2=.25, ΔR^2=.24 (*F*=24.26			

001, .01, *p<.05, Non-significant = p>.05

PERS=Personalizing, CATA=Catastrophizing, SA=Selective Abstraction, OG=Over Generalization

Results in Table 18 show that impacts of self-debasing cognitive errors on each of the emotional and behavioral problems of adolescents. Results indicate a strong fit of association between self-debasing cognitive errors and anxiousness dimension of problem behavior of adolescents (R=.82, F = 152.46, p < .001). Model accounted for 66% of variance in anxiousness (ΔR^2 = .66). Among the sub-dimensions of the self-serving cognitive errors, personalizing was the strongest predictor of anxiousness (B = .47, β = .*35*, p < .001) reflecting that increasing self-debasing cognitive errors by one unit will increase anxiousness by .47 units. Catastrophizing explained .29 units increase (B = .29, β = .26, p < .01) in anxiousness while overgeneralization dimension contributed .33 units increase in anxiousness among adolescents (B = .33, β = .23, p < .05). Results reveal that self-debasing cognitive errors jointly accounted for up to 66% of variance in aggression among adolescents (ΔR^2 = .66, F = 148.02, p < .001). Results further indicate that personalizing and Catastrophizing were the stronger negative predictors of aggression among adolescents. Personalizing explained .35 units decrease in aggression (B = -.35, β = -.37, p < .01) whereas Catastrophizing explained .25 units decrease in aggression among adolescents (B = -.25, β = -.29, p < .01). Overgeneralization was also a significant negative predictor of aggression (B = -.19, β = -.22, p < .05) explaining 19 units decrease in aggression. Selective abstraction was a non-significant predictor of anxiousness and aggression among adolescents. To predict social withdrawal self-debasing cognitive errors collectively contributed 69% of variance with significant F ratio (ΔR^2 = .69, F = 173.09, p < .001). Individually, personalizing was a significant and stronger positive predictor of social withdrawal (B = .22, β = .*35*, p < .01) causing .22 units increase in social withdrawal among adolescents. Overgeneralization explained .19 units increase (B = .19, β = .27, p < .05) while selective abstraction caused .13 units increase in social withdrawal. The value of Adjusted R^2 (ΔR^2 = .37, F = 46.73, p < .001) indicate that cognitive errors explained 37%

communal variance in somatic complaints of adolescents. While evaluating individually, personalizing was significant stronger predictor of somatic complaints (B = .11, β = .42, p < .01) reflecting that an increase of one unit in personalizing will increase somatic complaints by .11 units. Overgeneralization, another significant predictor of somatic complaints caused .10 units increase in somatic complaints (B = .10, β = .35, p < .05). To predict academic problems of adolescents, cognitive errors contributed 25% of cumulative variance (ΔR^2 = .25, F = 54.77, p < .001) where overgeneralization was the strongest predictor causing .67 units increase in academic problems of adolescents (B = .67, β = .61, p < .001). Selective abstraction was another significant predictor explaining .43 units increase in academic problems of adolescents (B = .43, β = .31, p < .001). Personalizing and catastrophizing also significantly predicted academic problems among adolescents. Results indicate that all the self-debasing cognitive errors shared 24% of variance in predicting feelings of rejection among adolescents (ΔR^2 = .24, F = 24.26, p < .001). While evaluating individually, personalizing and overgeneralization were the stronger predictors of feelings of rejection among adolescents. Personalizing explained .19 units increase (B = .19, β = .53, p < .01) whereas overgeneralization explained .22 units increase (B = .22, β = .52, p < .01) in feelings of rejection among adolescents. Catastrophizing was also a significant predictor causing .16 units increase (B = .16, β = .37, p < .05) in feelings of rejection.

19

ple Regression Analysis on Emotional and Behavioral Problems by components of How I Think Questionnaire (N=663)

	Anxiousness					Aggression					Social Withdrawal			
				95% CI					95% CI					95%
Q	*B*	*SE B*	*β*	*LL*	*UL*	*B*	*SE B*	*β*	*LL*	*UL*	*B*	*SE B*	*β*	*LL*
	-.21	.05	-.34**	-.30	-.11	.14	.03	.36**	.07	.20	-.10	.03	-.31**	-.15
	-.28	.11	-.22*	-.50	-.07	.15	.07	.19*	.01	.29	-.14	.06	-.22*	-.26
	-.02	.08	-.02	-.19	.14	.06	.06	.07	-.05	.17	-.06	.04	-.10	-.15
	-.27	.09	-.24**	-.45	-.09	.13	,06	.18*	.01	.25	-.11	.05	-.18*	-.20
= .68, R^2= .46, ΔR^2= .45 (F = 49.64**)						R = .65, R^2=.43, ΔR^2=.42 (F=43.91**)					R = .65, R^2=.43, ΔR^2=.42 (F=44.46			
	Somatic Complaints					Academic Problems					Rejection			
	-.02	.01	-.18	-.04	.000	.35	.08	.19**	.18	.51	-.03	.02	-.20**	-.07
	-.07	.03	-.28**	-.12	-.02	.28	.09	.21**	.11	.45	-.09	.04	-.23**	-.16
	-.02	.02	-.07	-.02	.06	.92	.09	.45**	.75	1.09	-.03	.03	-.08	-.03
	-.06	.02	-.26**	-.10	-.02	.15	.06	.16*	.04	.26	-.07	.03	-.19*	-.13
= .58, R^2= .34, ΔR^2= .33 (F = 30.61**)						R = .38, R^2=.14, ΔR^2=.14 (F=27.45**)					R = .57, R^2=.32, ΔR^2=.31 (F=28.44			

001, .01, *p<.05, Non-significant = p>.05
AW=Assuming the Worst, SC=Self-Centeredness, ML=Mislabeling, BO=Blaming Others

Table 19 shows the impacts of self-serving cognitive errors on each of the emotional and behavioral problems of adolescents. Results show that all types of self-serving cognitive errors demonstrated a negative association with anxiousness dimension of adolescents' problem behavior by sharing 45% of the total variance (ΔR^2 = .45, F = 49.64, p < .001). Assuming the worst was the strongest negative predictor of anxiousness. Beta values reflect that assuming the worst explained .21 units decease in anxiousness (B = -.21, β = -.34, p < .001) in anxiousness. Blaming other was also a significant negative predictor showing .27 units decrease in anxiousness (B = -.27, β = -.24, p < .05). Self-centeredness caused .28 units decrease in anxiousness with a beta value of -.27. To predict aggression among adolescents self-serving cognitive errors jointly accounted for up to 42% of the total variance with a significant F ratio (ΔR^2 = .42, F = 43.91, p < .001). Assessing through beta weights, assuming the worst was the strongest thinking error causing aggression among adolescents. Assuming the worst increased aggression by .14 units (B = .14, β = .36, p < .001) in aggression among adolescents. Self-centeredness and blaming others also explained significant increase in aggression by .15 and .13 units consecutively. For social withdrawal all of the thinking errors explained up to 42% communal variance (ΔR^2 = .42, F = 44.46, p < .001). While assessing individually, beta weights reflect that assuming the worst was again the strongest negative predictor of social withdrawal among all types of thinking errors by causing .10 units decrease (B = -.10, β = -.31, p < .001) in social withdrawal. Self-centeredness and blaming others were also significant negative predictors of social withdrawal. Beta values reflect that increasing self-centeredness by one unit will decrease social withdrawal by .14 units (B = -.14, β = -.22, p < .05) whereas blaming others explained .11 units decrease in social withdrawal (B = -.11, β = -.18, p < .05). For somatic complaints self-serving thinking errors collectively explained 33% of the total variance (ΔR^2 = .33, F = 30.61, p < .001). Self-centeredness and blaming others

caused .07 and .06 units decrease consecutively in somatic complaints. For academic problems self-serving cognitive errors jointly accounted for up to 14% of variance (ΔR^2 = .14, F = 27.45, p < .001). While analyzing individually, mislabeling showed the most significant effect by explaining .92 units increase in academic problems among adolescents (B = .92, β = .45, p < .001). Assuming the worst, self-centeredness and blaming others were also significant positive predictors of academic problems of adolescents. All of the thinking errors jointly accounted for up to 31% of variance (ΔR^2 = .31, F = 28.44, p < .001) to predict feelings of rejection among adolescents. Assessing through beta values, mislabeling was a non-significant predictor of rejection feelings whereas assuming the worst, self-centeredness and blaming others, being significant negative predictors, caused .03, .09 and .07 units increase in feelings of rejection consecutively.

20

le Regression Analysis on Emotional and Behavioral Problems by NEO-FFI (N=663)

	Anxiousness					Aggression					Social Withdrawal			
				95% CI					95% CI					95%
	B	*SE B*	*β*	*LL*	*UL*	*B*	*SE B*	*β*	*LL*	*UL*	*B*	*SE B*	*β*	*LL*
U	.42	.04	.38**	.34	.49	.26	.03	.32**	.20	.33	.22	.02	.39**	.18
TR	-1.16	.15	-.31**	-.1.46	-.86	-.69	.09	-.35**.	-.88	-.52	-.56	.08	-.29**	-.72
EN	-.19	.06	-.13**	-.31	-.08	-.05	.03	-.07	-.02	.12	-.10	.03	-.14**	-.16
RE	-.31	.05	-.23**	-.41	-.21	-.22	.03	-.32**	-.28	-.16	-.16	.03	-.22**	-.21
NS	-.09	.06	-.07	-.21	.04	-.04	.04	-.06	-.04	.11	-.004	.03	-.01	-.07
	R = .61, R^2= .37, ΔR^2= .37 (F = 76.27**)					R=.40, R^2=.16, ΔR^2=.16 (F=25.03**)					R=.57, R^2=.33, ΔR^2=.32 (F=62.6			
	Somatic Complaints					Academic Problems					Rejection			
U	.12	.01	.33**	.09	.14	.10	.03	.12**	.04	.15	.13	.02	.27**	.09
TR	-.43	.05	-.35**	-.53	-.33	-.90	.12	-.33**	-1.14	-.67	-.46	.08	-.27**	-.61
EN	-.06	.02	-.13**	-.09	.02	-.09	.05	-.08	-.18	.000	-.05	.03	-.07	-.10
RE	-.08	.02	-.18**	-.11	-.04	-.28	.04	-.29**	-.36	-.20	-.10	.02	-.17**	-.15
NS	-.003	.02	-.01	-.03	.04	-.24	.05	-.25**	-.14	-.33	-.09	.03	-.15**	-.15
	R=.56, R^2=.32, ΔR^2=.31 (F=60.13**)					R=.54, R^2=.29, ΔR^2=.28 (F=53.39**)					R=.52, R^2=.27, ΔR^2=.27 (F=47.8			

.001, **p<.01, *p<.05, p>.05 = non-significant

NEU=Neuroticism, EXTR=Extraversion, OPEN=Openness, AGRE= Agreeableness, CONS=Conscientiousness

Table 20 shows the impacts of big five personality traits on emotional and behavioral problems of adolescents. Findings reveal that to predict anxiousness problem among adolescents the big five personality dimensions collectively explained 37% of variance with significant F ratio (ΔR^2 = .37, F = 76.27, p < .001). While assessing individually through beta weights, neuroticism was the strongest positive predictor whereas extraversion, openness, and agreeableness were the strong negative predictors of anxiousness. Beta values indicate that increasing neuroticism by one unit will increase anxiousness by .42 units (B = .42, β = .38, p < .001) whereas increasing extraversion by one unit will result in 1.16 units decrease in anxiousness (B = -1.16, β = -.31, p < .001). Values also reflect that one unit increase in openness and agreeableness will decrease anxiousness by .19 units (B = -.19, β = -.13, p < .01) and .31 units (B = -.31, β = -.23, p < .001) respectively. However, conscientiousness did not show significant effect on anxiousness.

Value of Adjusted R^2 shows that the five personality traits shared 16% of variance to predict aggression among adolescents (ΔR^2=.16, F = 25.03, p < .001). Beta weights reflect that neuroticism was a strong negative predictor of aggression among adolescents suggesting that one unit increase in neuroticism will increase aggression by .26 units (B = .26, β = .32, p < .001). Extraversion and agreeableness were strong negative predictors of aggression. Values reveal that one unit increase in extraversion and agreeableness decreased adolescents' aggression by .69 (B = -.69, β = -.35, p < .001) and .22 (B = -.22, β = .32, p < .001) units respectively. However, openness and conscientiousness did not produce significant effect on aggression among adolescents.

Results show that personality traits jointly accounted for up to 32% of variance (ΔR^2=.32, F = 62.66, p < .001) in predicting social withdrawal among adolescents. While interpreting individually, neuroticism significantly increased while extraversion, openness,

and agreeableness decreased the level of social withdrawal among adolescents. Beta values indicate that one unit increase in neuroticism increased social withdrawal by .22 units (B = .22, β = .39, $p < .001$) while one unit increase in extraversion, openness and agreeableness decreased social withdrawal by .56 units (B = -.56, β = -.29, $p < .001$), .10 units (B = -.10, β = -.14, $p < .01$), and .16 units (B = -.16, β = -.22, $p < .001$) respectively. Conscientiousness did show significant effect on social withdrawal.

To predict somatic complain among adolescents personality traits collectively explained 31% of the total variance with a significant F ratio (ΔR^2=.31, F = 60.13, $p <$ .001). Assessing through beta values, neuroticism, extraversion, openness, and agreeableness produced significant effect on somatic complaints among adolescents. Beta weights show that neuroticism increased somatic complaints by .12 units (B = .12, β = .33, $p < .01$) whereas extraversion, openness, and agreeableness decreased somatic complaints by .43 units (B = -.43, β = -.35, $p < .001$), .06 units (B = -.06, β = -.13, $p < .01$), and .08 unit (B = -.08, β = -.18, $p < .001$) respectively. Values further indicate conscientiousness did not show significant effect on somatic complaints among adolescents.

For academic problems, results of multiple regression analysis indicate that personality traits jointly account for up to 28% variance with significant F ratio (ΔR^2=.28, F = 53.39, $p < .001$). Interpreting individually, except openness, all the traits significantly predicted academic problems of adolescents. Beta weights reflect that increasing neuroticism by one unit increased academic problems by .10 units (B = .10, β = .12, $p <$ .01). One unit increase in extraversion, agreeableness, and conscientiousness decreased academic problems by .90 units (B = -.90, β = -.31, $p < .001$), .28 units (B = -.28, β = -.29, $p < .001$), and .24 units (B = -.24, β = -.25, $p < .01$) respectively. Openness remained a non-significant predictor of academic problems among adolescents.

Regression analysis reveals that the big five personality traits explained 27% communal variance to predict feelings of rejection among adolescents (ΔR^2=.27, F = 47.89, p < .001). Interpreting separately, neuroticism was the strong positive predictor of feelings of rejection. Beta values indicate that increasing neuroticism by one unit increased feelings of rejection by .13 units (B = .13, β = .27, p < .001). The other significant predictors were extraversion, agreeableness, and conscientiousness and these traits predicted .46 units (B = -.46, β = -.27, p < .001), .10 units (B = -.10, β = -.17, p < .001), and .09 units (B = -.09, β = -.15, p < .01) decrease in feelings of rejection respectively. Findings indicate that openness did not show significant effect on feelings of rejection among adolescents.

As proposed by Field (2003) value Of VIF (test for multicollinearity) must be less than 10. In the current study all the values of VIF in regression analyses lie within acceptable range which means there is no threat of multicollinearity in the models.

Moderation Analyses

Moderating role of verbal (vocabulary, verbal reasoning, Numerical Reasoning, and Information) and nonverbal cognitive abilities, self-debasing (catastrophizing, personalizing, selective abstraction, and overgeneralization) and self-serving (self-centeredness, blaming others, mislabeling, assuming the worst) cognitive errors and personality traits (neuroticism, extraversion, openness, agreeableness, and conscientiousness) was investigated in order to explicate the relationship between experience of adverse life events and emotional and behavioral problems of adolescents. Moderation of these variables was tested using Macro Process Analysis as proposed by Hayes (2013). Process is basically a computational method for testing path models i.e. moderation, mediation and their combinations and, in a single command, it provides many of the capabilities of Sobel test (Preacher and Hayes, 2004) and interaction term (Preacher

& Hayes, 2008). Moreover it not only estimates the OLS regression coefficient but also generates conditional effects in moderation models.

Table 21

Moderating effect of Verbal Cognitive Abilities on Anxiousness among Adolescents (N = 663)

					Anxiousness	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		25.43	.64	39.69	.000	[24.18, 26.69]
EALE		.06	.02	3.005	.003	[.02, .09]
VOC		-.15	.09	-1.66	.097	[-.32, .03]
EALE × VOC		-.004	.001	-3.58	.000	[-.006, -.002]
R^2	.14					
F	54.36				.000	
Constant		24.75	.56	44.08	.000	[23.64, 25.85]
EALE		.08	.02	4.29	.000	[.04, .12]
VR		-.05	.25	-.19	.848	[-.54, .44]
EALE × VR		-.006	.002	-2.64	.008	[-.01, -.001]
R^2	.12					
F	39.58				.000	
Constant		25.01	.60	41.38	.000	[23.82, 26.20]
EALE		.17	.02	9.47	.000	[.13, .20]
NA		-.50	.11	-4.60	.000	[-.72, -.29]
EALE × NA		-.004	.001	-2.89	.004	[-.006, -.001]
R^2	.14					
F	52.92				.000	
Constant		24.46	.56	44.06	.000	[23.37, 25.55]
EALE		.09	.02	5.75	.000	[.06, .13]
INFO		-.10	.15	-.69	.484	[-.19, .39]
EALE × INFO		-.003	.002	-1.67	.094	[-.0005, .006]
R^2	.11					
F	38.65				.000	

*p>.05= Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, VOC = Vocabulary, VR = Verbal Reasoning, NA = Numerical Reasoning, INFO = Information

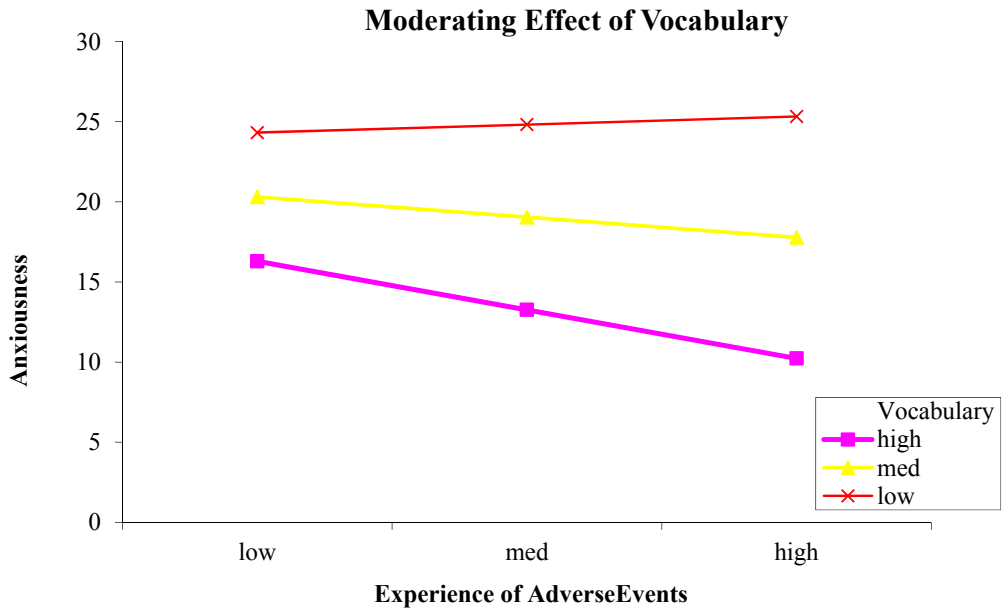

Figure 23. Moderating effect of vocabulary in predicting anxiousness among adolescents

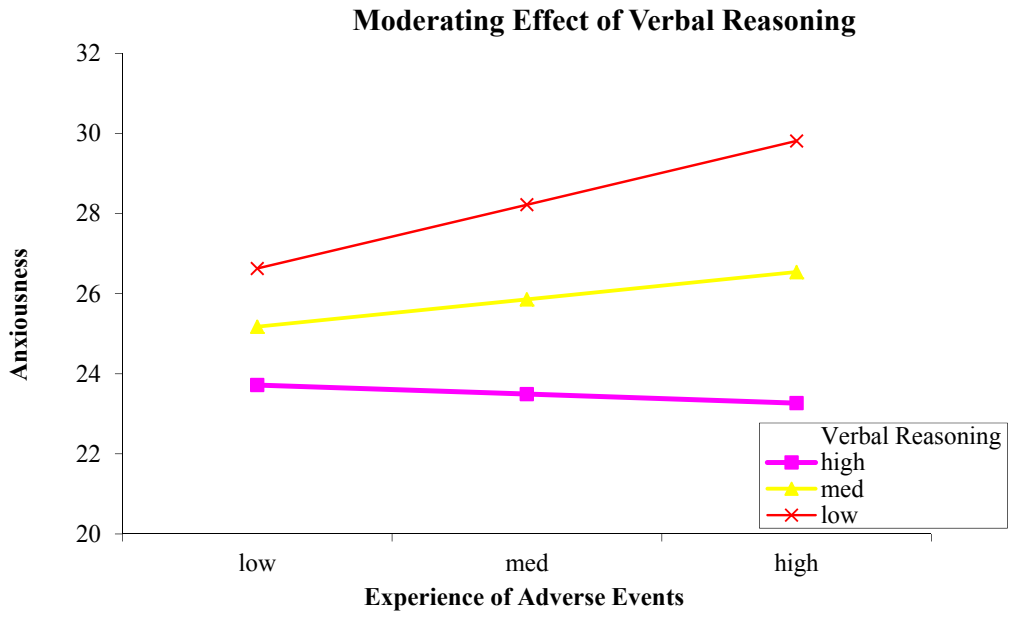

Figure 24. Moderating effect of verbal reasoning in predicting anxiousness among adolescents

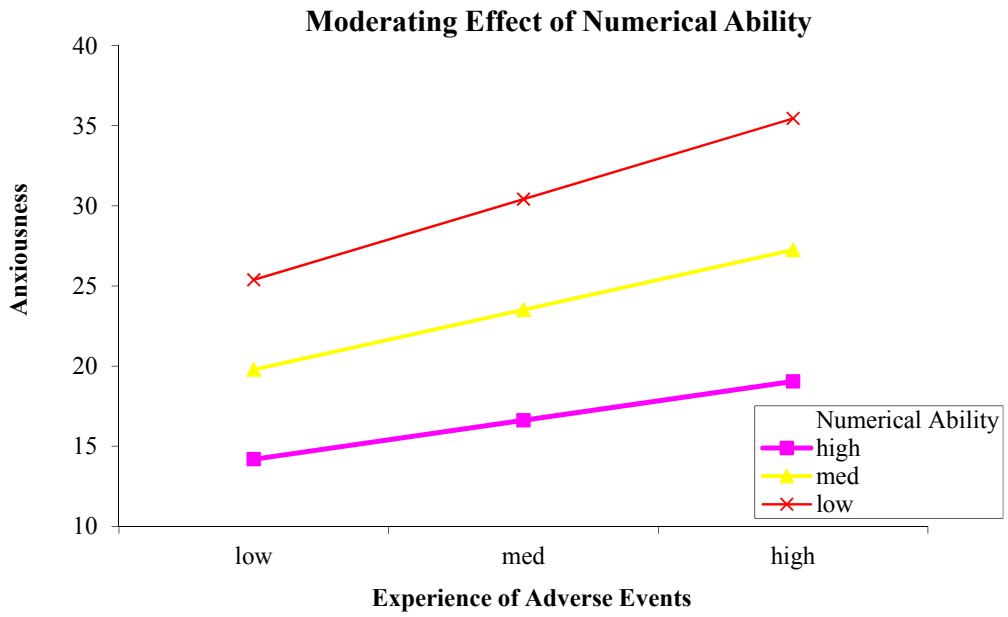

Figure 25. Moderating effect of Numerical Reasoning in predicting anxiousness among adolescents

Results presented in Table (21) demonstrate the moderating role of verbal cognitive abilities (i.e. vocabulary, verbal reasoning, Numerical Reasoning and Information) in the association between experience of adverse life events and anxiousness among adolescents. Model 1 illustrates the interaction effect of vocabulary and experience of adverse life events on anxiousness among adolescents. Findings suggest that vocabulary and experience of adverse events interactively produced 14% (F (3, 659) = 54.36, R^2 = .14, $p < .001$) of variance in explaining anxiousness. Being a protective factor, vocabulary had a reversed effect in the model by buffering the effect of adverse life experiences on anxiousness among adolescents. The follow up mod graph (Figure 23) further explains this relationship at different levels (i.e. high, medium and low) of vocabulary. The line graph shows that high and medium levels of vocabulary decreased the effect of experience of adverse events on anxiousness whereas low level of the ability increased this effect among adolescents.

Model 2 shows results for the moderating effect of verbal reasoning ability. The interaction term revealed significant interaction effect (B = -.006, R^2 = .12, F (3, 659) = 39.58, p < .001) of verbal reasoning and experience of adverse life events. Mod graph (Figure 24) further explains that verbal reasoning served as a protective factor and buffered the effect of adverse life experiences on anxiousness among adolescents. The line graph shows that high level of verbal reasoning ability minimized the effect of experience of adverse life events on anxiousness whereas medium and high level of the ability raised this effect.

Model 3 demonstrates the results for the moderating effect of Numerical Reasoning. Values revealed a significant interaction effect (R^2 = .14, F (3, 659) = 52.92, p < .001) of Numerical Reasoning and experience of adverse life events explaining 14% of variance in the level of anxiousness among adolescents. Mod graph (Figure 25) further elaborates this effect by indicating that medium and low levels of Numerical Reasoning boosted the effect of adverse experiences on anxiousness whereas high level of Numerical Reasoning weakened the this effect.

Model 4 shows moderating role of Information in the association between experience of adverse events and anxiousness among adolescents. Interaction term suggest that Information did account for a significant effect (B = -.003, p = .094) in explaining anxiousness among adolescents.

Table 22

Moderating effect of Verbal Cognitive Abilities on Aggression among Adolescents (N = 663)

					Aggression	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		24.02	.32	73.76	.000	[23.37, 24.66]
EALE		.03	.01	3.29	.000	[.01, .05]
VOC		-.05	.05	-1.06	.288	[-.14, .04]
EALE × VOC		-.003	.0006	-4.11	.001	[-.004, -.001]
R^2	.13					
F	48.69				.000	
Constant		23.78	.29	81.50	.000	[23.20, 24.35]
EALE		.07	.01	6.66	.000	[.05, .09]
VR		-.32	.13	-2.41	.016	[-.58, -.06]
EALE × VR		-.005	.002	-3.53	.000	[-.01, -.002]
R^2	.12					
F	40.31				.000	
Constant		23.69	.31	75.56	.000	[23.08, 24.31]
EALE		.09	.009	10.13	.000	[.07, .11]
NA		-.30	-.06	-.5.47	.000	[-.41, .19]
EALE × NA		-.002	-.001	-2.67	.008	[-.001, -.004]
R^2	.13					
F	47.66				.000	
Constant		23.54	.31	78.32	.000	[22.95, 24.13]
EALE		.05	.009	4.92	.000	[.03, .06]
INFO		-.02	-.07	-.29	.764	[-.12, .17]
EALE × INFO		-.002	-.001	-2.32	.020	[-.004, -.0004]
R^2	.10					
F	27.74				.000	

*p>.05= Non-significant, ***p* < .001

Note: EALE = Experience of adverse Life Events, VOC = Vocabulary, VR = Verbal Reasoning, NA = Numerical Reasoning, INFO = Information

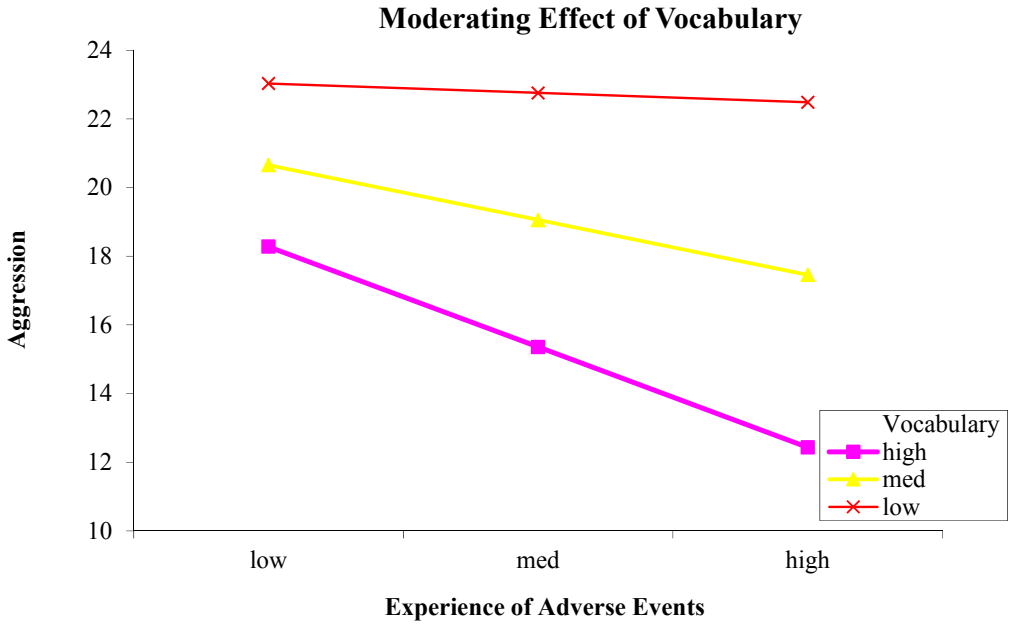

Figure 26. Moderating effect of vocabulary in predicting aggression among adolescents

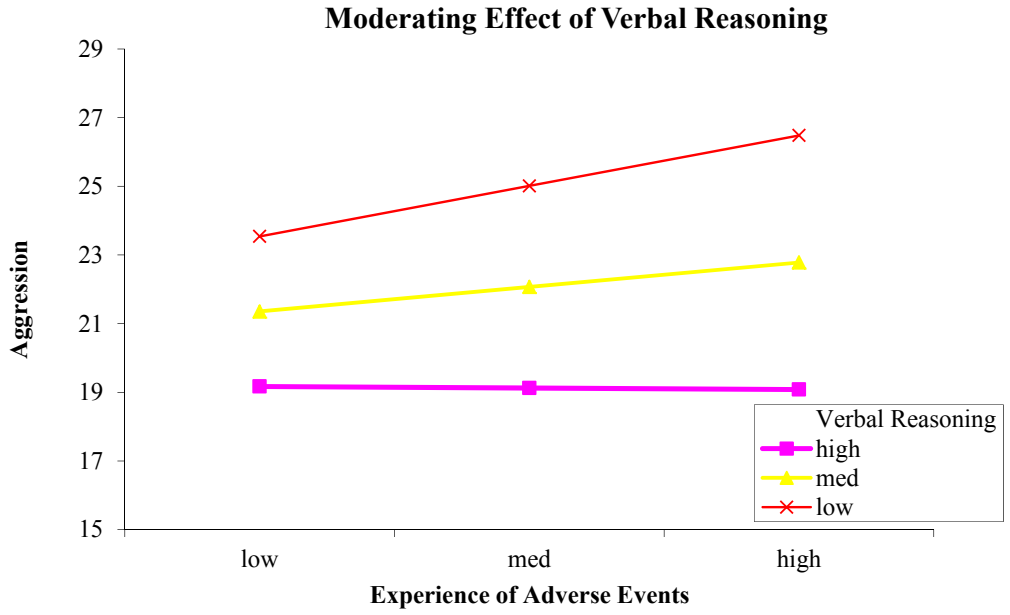

Figure 27. Moderating effect of verbal reasoning in predicting aggression among adolescents

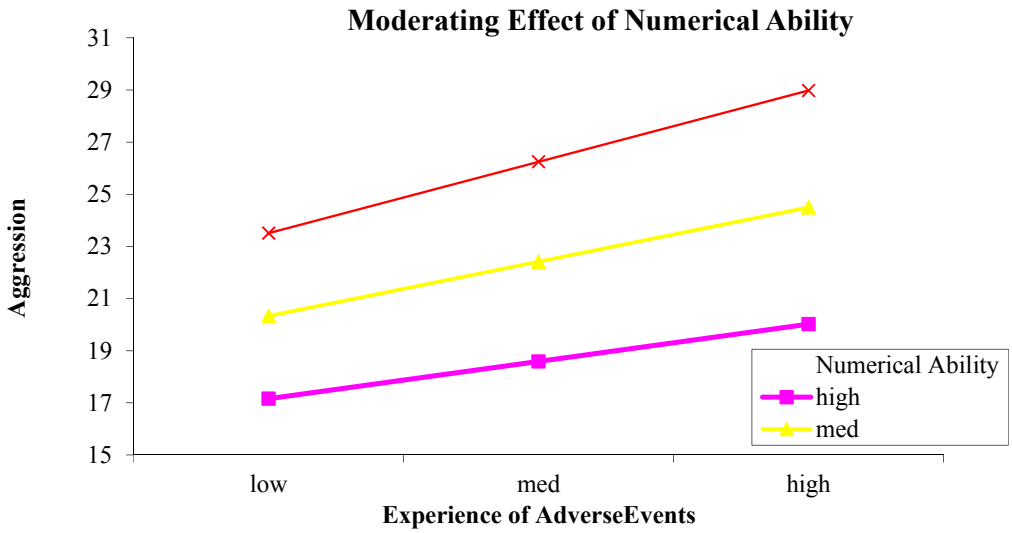

Figure 28. Moderating effect of Numerical Reasoning in predicting aggression among adolescents

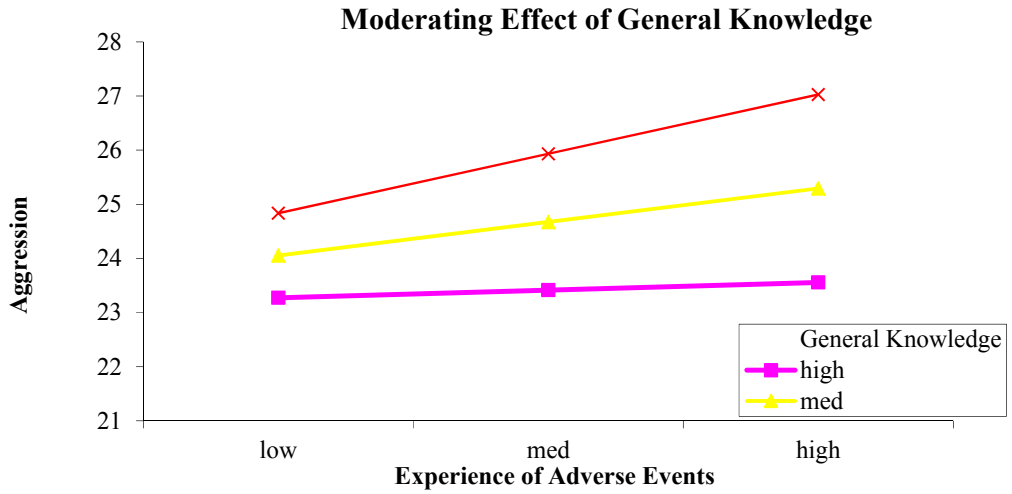

Figure 29. Moderating effect of Information in predicting aggression among adolescents

Table 22 displays the results for moderating role of verbal cognitive abilities in relationship between experience of adverse life events and aggression among adolescents. Showing the moderating role of vocabulary Model 1 depicts significant interaction effect of vocabulary and experience of adverse life events (B = -.003, R^2 = .13, F (3, 659) = 48.69, p < .001) in explaining aggression. Serving as a protective factor, ability of vocabulary

buffered the impact of adverse life experiences on the level of aggression. Mod graph (Figure 26) also explains this pattern of relationship by demonstrating that high and medium level of vocabulary undermined the impact of adverse experiences on aggression; however no differences in the relationship emerged when the ability was at low level.

Model 2 shows moderating power of verbal reasoning in association of the experience of adverse life events and aggression. Interaction term between vocabulary and experience of adverse life events reveal a significant moderation effect ($B = -.005$, $R^2 = .12$, $F (3, 659) = 40.31$, $p < .001$) of verbal reasoning along with producing 12% of variance in aggression. Mod graph (Figure 27) further illustrates these results that medium and low level of verbal reasoning among adolescents aggravated the impact of adverse life experiences on aggression however the high level of ability weakened this impact.

Model 3 in the table explains the moderating effect of Numerical Reasoning. Findings reveal that the interaction effect of Numerical Reasoning and experience of adverse events was statistically significant ($B = -.002$, $R^2 = .13$, $F (3, 659) = 47.66$, $p < .001$) with explaining 13% of variance in adolescents' aggressive behavior. Graphical presentation of these results (Figure 28) explicate these findings by suggesting that medium and low levels of Numerical Reasoning aggravate the effect of adverse life experiences on aggressive behavior whereas weak effect was observed when the ability level was high.

Model 4 represents the results for moderation effect of Information. Results reveal that Information significantly moderated ($B = -.002$, $R^2 = .10$, $F (3, 659) = 27.74$, $p < .001$) the relationship between experience of adverse events and adolescents' aggression along with accounting for 10% of variance. Mod graph (Figure 29) elaborates these results with at different levels of Information ability (i.e. high, medium and low). Line graph illustrates that decrease in Information boost the effect of adverse life experiences on adolescents'

aggression. Medium level of the ability also showed the same trend however the high level of ability did not produce significant variations in explaining this effect.

Table 23

Moderating effect of Verbal Cognitive Abilities on Social Withdrawal among Adolescents (N = 663)

					Social Withdrawal	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		15.92	.33	47.74	.000	[15.26, 16.57]
EALE		.03	.01	2.86	.000	[.009, .048]
VOC		-.08	.05	-1.79	.073	[-.17, .007]
EALE × VOC		-.003	.001	-4.31	.000	[-.003, -.001]
R^2	.15					
F	51.59				.000	
Constant		15.62	.29	52.12	.000	[15.03, 16.21]
EALE		.04	.01	4.51	.000	[.02, .06]
VR		-.03	.12	-.27	.789	[-.27, .21]
EALE × VR		-.005	.001	-3.72	.000	[-.007, -.002]
R^2	.12					
F	41.07				.000	
Constant		15.85	.33	48.64	.000	[15.21, 16.49]
EALE		.09	.01	9.20	.000	[.07, .11]
NA		-.25	.06	-4.36	.000	[-.37, -.14]
EALE × NA		-.003	.001	-4.03	.000	[-.004, -.002]
R^2	.14					
F	51.77				.000	
Constant		15.48	.29	53.16	.000	[14.91, 16.05]
EALE		.05	.009	5.79	.000	[.03, .07]
INFO		-.03	.07	-.42	.672	[-.11, .17]
EALE × INFO		-.002	.001	-2.96	.003	[-.004, -.001]
R^2	.11					
F	38.46				.000	
Constant		15.95	.33	48.16	.000	[15.29, 16.59]
EALE		.05	.01	3.94	.000	[.03, .08]
VAT		-.005	.02	-.22	.828	[-.04, .05]
EALE × VAT		-.001	.0002	-4.51	.000	[-.001, -.0005]
R^2	.13					
F	45.39				.000	

*p>.05= Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, VOC = Vocabulary, VR = Verbal Reasoning, NA = Numerical Reasoning, INFO = Information

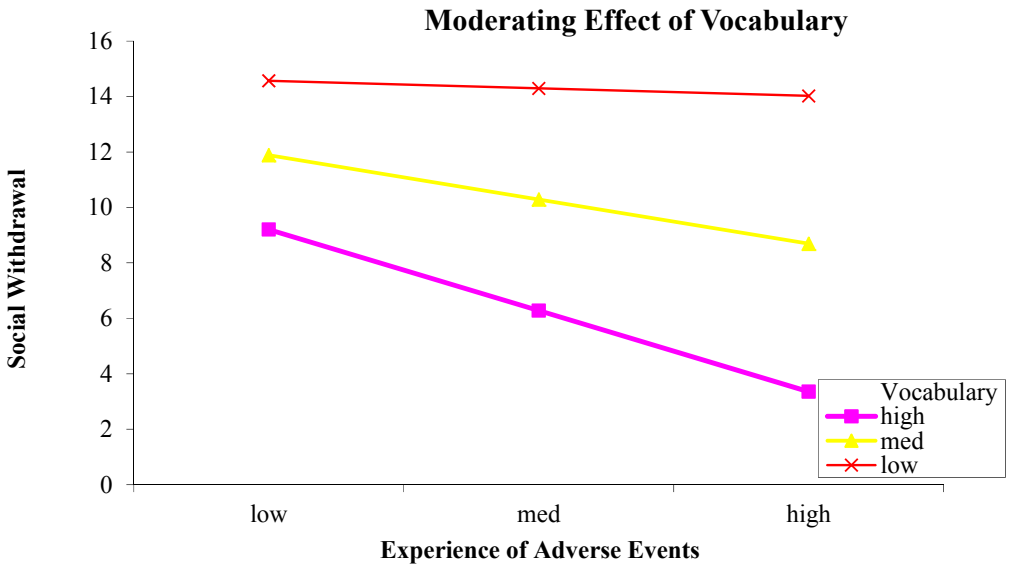

Figure 30. Moderating effect of vocabulary in predicting social withdrawal among adolescents

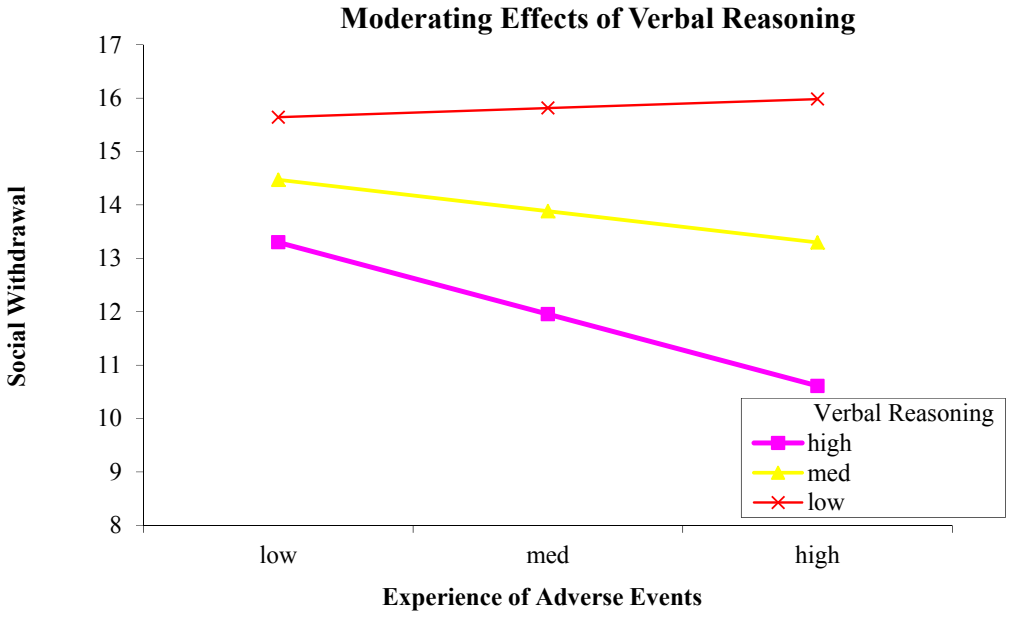

Figure 31. Moderating effect of verbal reasoning in predicting social withdrawal among adolescents

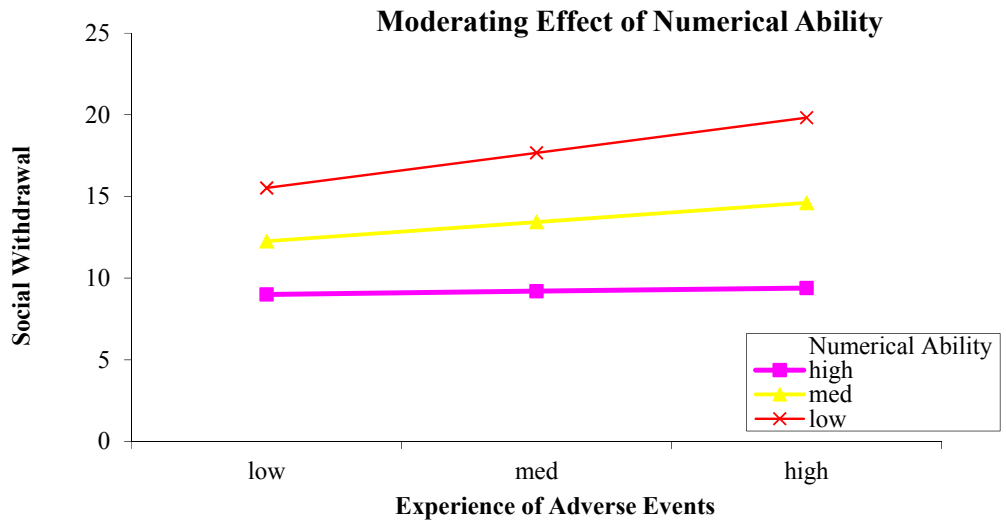

Figure 32. Moderating effect of Numerical Reasoning in predicting social withdrawal among adolescents

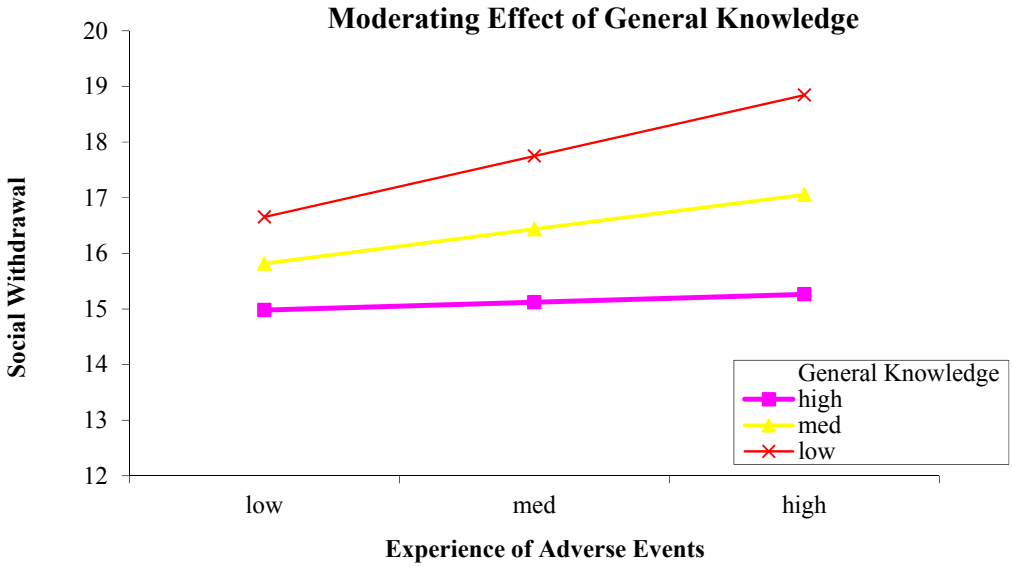

Figure 33. Moderating effect of Information in predicting social withdrawal among adolescents

Results displayed in Table 23 show the moderating role of verbal cognitive abilities in the relationship between experience of adverse life events and social withdrawal among adolescents. Model 1 in the table explains the moderating effect of vocabulary. Results

depicted vocabulary as a strong moderator in explaining the impact of adverse life events on social withdrawal among adolescents. The interaction effect of vocabulary and adverse life experiences was statistically significant (B = -.003, R^2 = .15, F (3, 659) = 51.59, p < .001) by accounting for 15% of variance in social withdrawal among adolescents. Mod graph (Figure 30) illuminates this moderation effect at high, medium and low levels of vocabulary showing that high and medium levels of vocabulary minimized the effect of adverse life experiences. However low level of the ability did not accounted for any visible difference in this effect.

Model 2 in the table displays results for the moderating power of verbal reasoning ability. The significant interaction term (B = -.005, R^2 = .12, F (3, 659) = 41.07, p < .001) reveals that verbal reasoning significantly moderated the impact of adverse life experiences on social withdrawal along with explaining 12% of variance. Mod graph (Figure 31) elucidates these results by demonstrating that high and medium levels of verbal reasoning ability buffered the effect of adverse life experiences on social withdrawal among adolescents whereas the low level of this ability aggravated this effect.

Moderating effect of Numerical Reasoning is presented in Model 3 of the table which shows a significant interaction effect of the experience of adverse life events and Numerical Reasoning (B = -.003, R^2 = .14, F (3, 659) = 51.77, p < .001) on social withdrawal. Mod graph (Figure 32) further explicates this effect at different levels of Numerical Reasoning (i.e. high, medium and low). The line graph shows that medium and low levels of Numerical Reasoning exacerbated the effect of adverse life experiences on social withdrawal whereas high level of this ability did not produce any significant difference in this effect.

Model 4 exhibits results for the moderation effect of Information. A significant interaction term suggests that Information significantly moderated (B = -.002, R^2 = .11, F

(3, 659) = 38.46, p < .001) the relationship between experience of adverse life events and social withdrawal among adolescents along with account for 11% of variance. A line graph (Figure 33) illuminates this effect along three levels of Numerical Reasoning (high, medium and low). The graph shows that medium and low levels of Numerical Reasoning aggravated the effect of the experience of adverse life events on social withdrawal whereas high level of the ability did not produce any variation in this effect.

Table 24

Moderating effect of Verbal Cognitive Abilities on Somatic Complaints among Adolescents (N = 663)

					Somatic Complaints	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		8.27	.20	41.02	.000	[7.88, 8.67]
EALE		.01	.006	2.33	.020	[.002, .03]
VOC		-.06	.03	-1.98	.047	[-.11, -.001]
EALE × VOC		-.001	.0004	-3.64	.000	[-.002, -.0006]
R^2	.13					
F	46.07				.000	
Constant		8.09	.19	43.36	.000	[7.72, 8.45]
EALE		.03	.006	4.27	.000	[.01, .04]
VR		-.01	.08	-.13	.895	[-.15, .17]
EALE × VR		-.002	.001	-2.70	.007	[-.004, -.001]
R^2	.10					
F	31.16				.000	
Constant		8.17	.20	40.35	.000	[7.77, 8.57]
EALE		.05	.006	8.21	.000	[.04, .06]
NA		-.13	.03	-3.70	.000	[-.20, -.06]
EALE × NA		-.001	.0005	-2.84	.005	[-.003, -.0004]
R^2	.12					
F	39.58				.000	
Constant		7.99	.18	43.83	.000	[7.63, 8.35]
EALE		.02	.006	3.76	.000	[.01, .03]
INFO		-.04	.05	-.82	.410	[-.14, .06]
EALE × INFO		-.001	.001	--2.06	.039	[-.002, -.0001]
R^2	.10					
F	28.51				.000	

*p>.05= Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, VOC = Vocabulary, VR = Verbal Reasoning, NA = Numerical Reasoning, INFO = Information

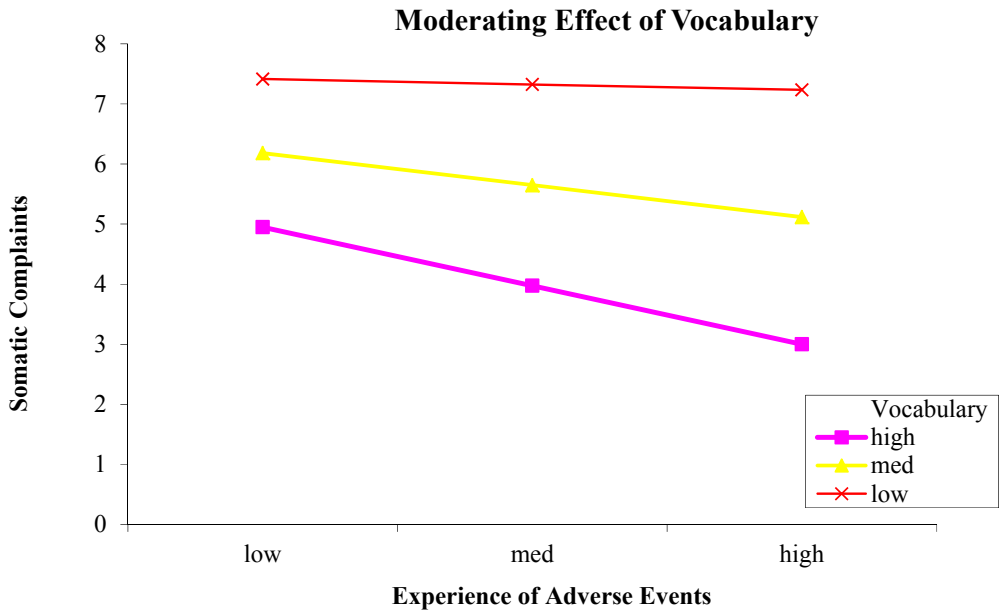

Figure 34. Moderating effect of vocabulary in predicting somatic complaints among adolescents

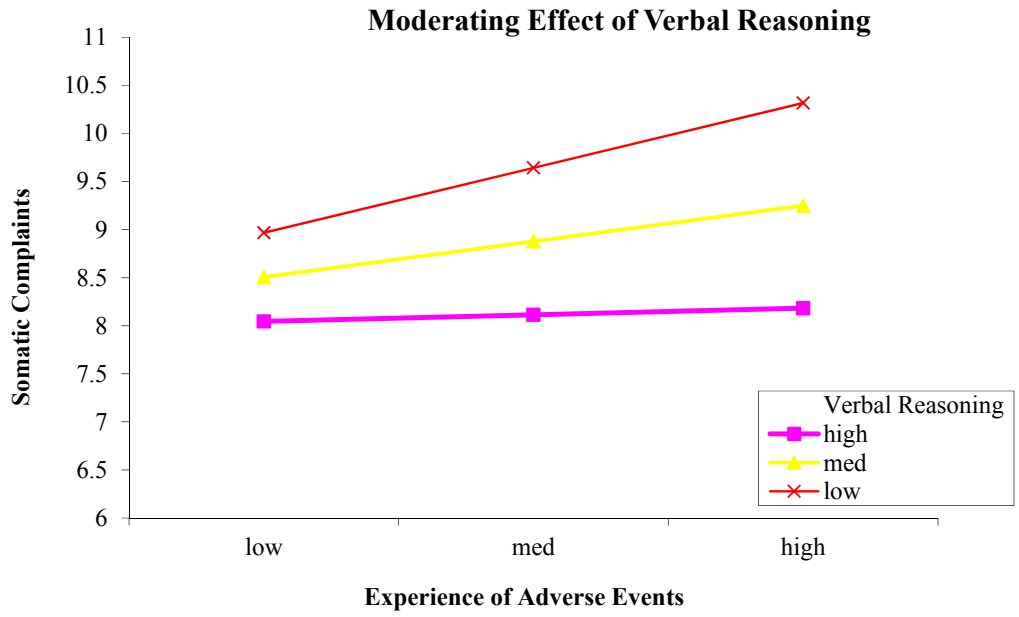

Figure 35. Moderating effect of verbal reasoning in predicting somatic complaints among adolescents

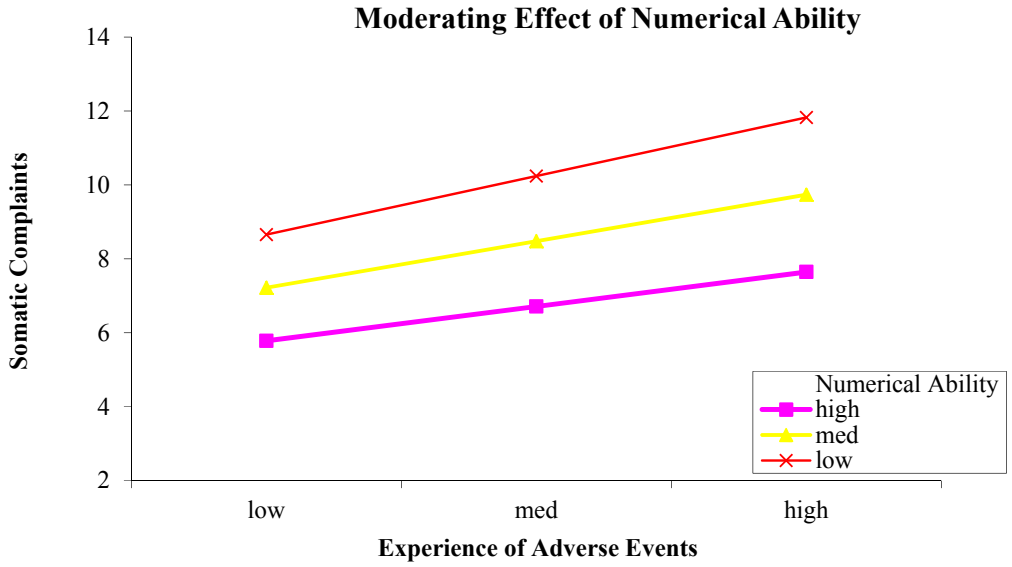

Figure 36. Moderating effect of Numerical Reasoning in predicting somatic complaints among adolescents

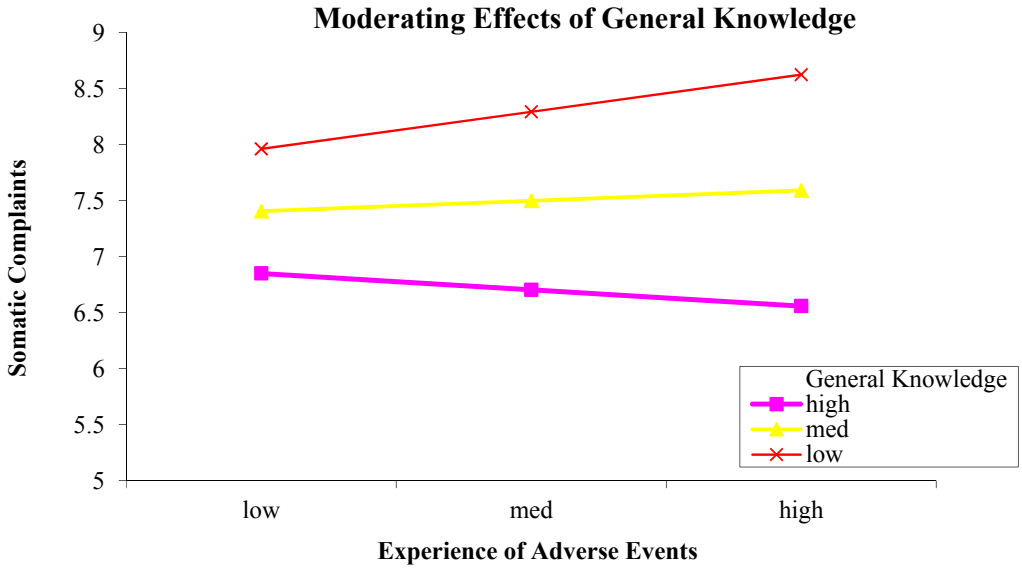

Figure 37. Moderating effect of Information in predicting somatic complaints among adolescents

Results shown in Table 24 reveal the moderating effect of verbal cognitive abilities in the association between experience of adverse life events and somatic complaints among

adolescents. Model 1 of the table displays the moderating power of vocabulary. Values indicate that the ability of vocabulary significantly moderated (B = -.001, R^2 = .13, F (3, 659) = 46.07, p < .001) the effect of adverse life experiences by explaining 13% of variance in somatic complaints. A graphical presentation (Figure 34) made these findings evident by showing that an increase in vocabulary (i.e. high and medium levels) weakened the effect of adverse life experiences on somatic complaints among adolescents. However the low level of ability did not contribute any change in explaining this effect.

Model 2 of the table demonstrates the moderating role of verbal reasoning ability. Findings reveal that the interaction effect of verbal reasoning and experience of adverse life events was statistically significant (B = -.002, R^2 = .10, F (3, 659) = 31.16, p < .001) along with contributing 10% of variance in somatic complaints of adolescents. These results are graphically displayed in Figure 35 which depicts that a medium or low level of verbal reasoning boosted the relationship between the experience of adverse life events and somatic complaints among adolescents whereas high level of verbal reasoning did not explain any change in this relationship.

Model 3 of the table shows a significant moderation effect (B = -.001, R^2 = .12, F (3, 659) = 39.58, p < .001) of Numerical Reasoning in studying the impact of adverse life experiences on somatic complaints with explaining 12% of variance. This moderation effect is graphically explained in Figure 36 at different levels of Numerical Reasoning (i.e. high, medium and low). The graph exhibits that medium and low levels of the ability deteriorated the effect of adverse life experiences on somatic complaints whereas high level of the ability was related to low relationship between adverse life experiences and somatic complaints.

Results displayed in model 4 show a significant interaction effect of Information and adverse life experiences (B = -.001, R^2 = .10, F (3, 659) = 28.51, p < .001) with

explaining 10% of variance in somatic complaints of adolescents. These findings are further explained in mod graph (Figure 37) which depicts that Information significantly moderated the relationship between experience of adverse life events and somatic complaints among adolescents. The graph shows that high level of Information alleviated the effect of adverse life experiences whereas medium and low levels of the ability exacerbated this effect on somatic symptoms.

Table 25

Moderating effect of Verbal Cognitive Abilities on Academic Problems among Adolescents (N = 663)

					Academic Problems	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		19.09	.47	40.53	.000	[18.17, 20.02]
EALE		.06	.01	4.21	.000	[.02, .09]
VOC		-.02	.07	-.26	.795	[-.11, .15]
EALE × VOC		-.004	.001	-5.03	.000	[-.006, -.002]
R^2	.11					
F	41.89				.000	
Constant		18.34	.42	43.96	.000	[17.52, 19.16]
EALE		.07	.01	4.70	.000	[.04, .09]
VR		-.12	.18	-.65	.515	[-.23, .46]
EALE × VR		-.006	.002	-3.21	.001	[-.09, -.002]
R^2	.09					
F	30.17				.000	
Constant		18.47	45	40.87	.000	[17.58, 19.36]
EALE		.13	.01	10.18	.000	[.10, .15]
NA		-.44	.07	-6.03	.000	[-.58, -.29]
EALE × NA		-.003	.001	-3.06	.002	[-.005, -.001]
R^2	.13					
F	45.55				.000	
Constant		17.65	.39	45.32	.000	[16.88, 18.41]
EALE		.06	.01	5.006	.000	[.04, .08]
INFO		-.05	.11	-.54	.588	[-.15, .26]
EALE × INFO		-.0004	.001	-.33	.745	[-.002, .002]
R^2	.08					
F	26.55				.000	

*p>.05= Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, VOC = Vocabulary, VR = Verbal Reasoning, NA = Numerical Reasoning, INFO = Information

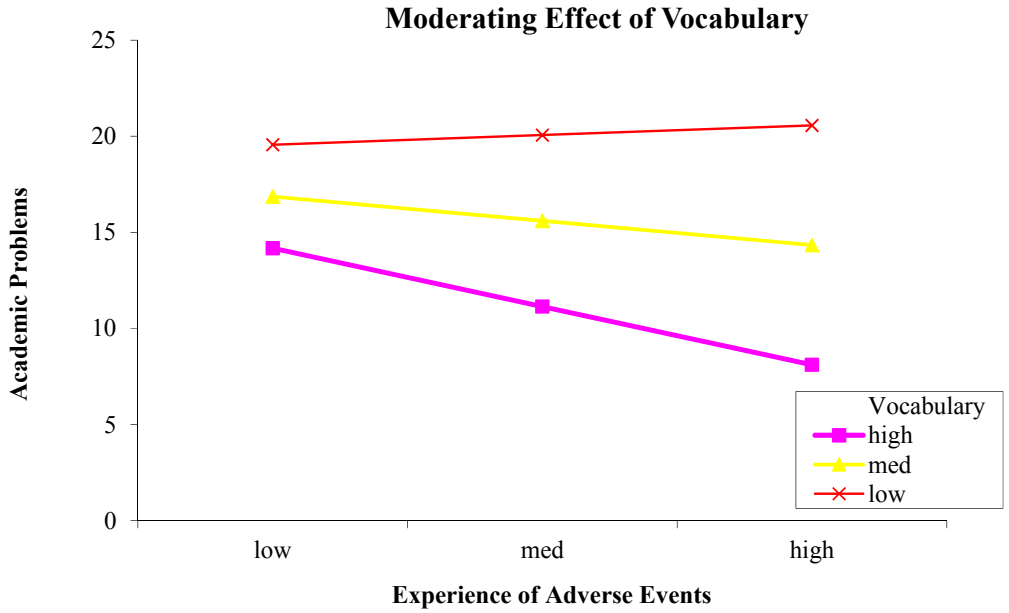

Figure 38. Moderating effect of vocabulary in predicting academic problems among adolescents

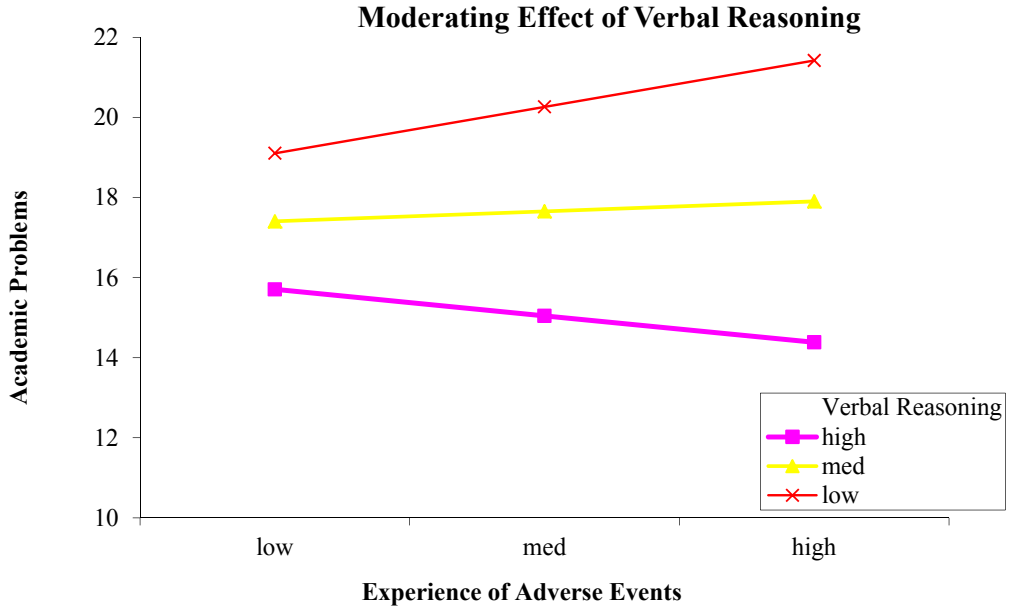

Figure 39. Moderating effect of verbal reasoning in predicting academic problems among adolescents

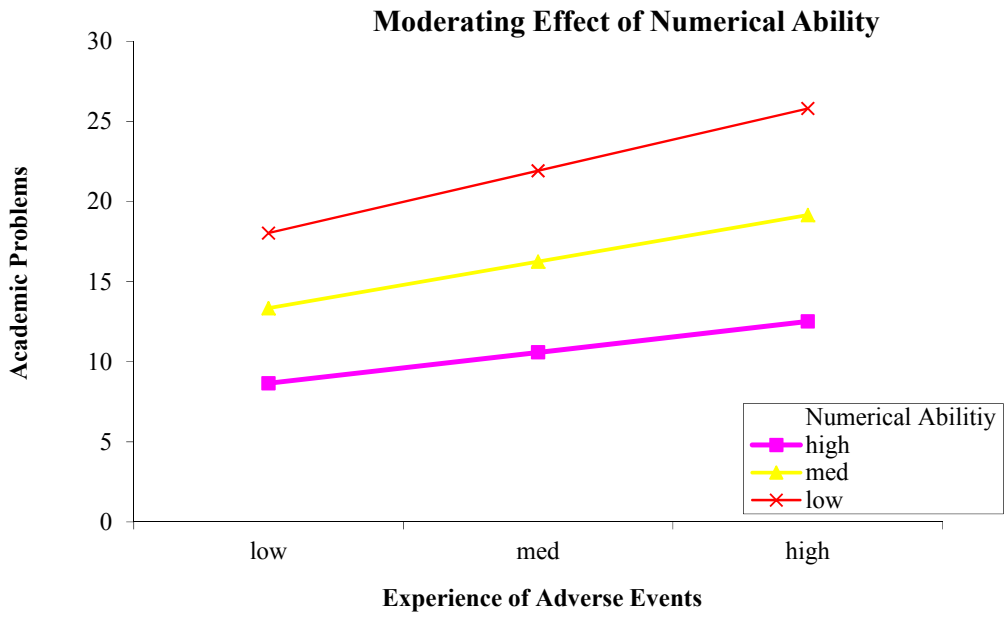

Figure 40. Moderating effect of vocabulary in predicting somatic complaints among adolescents

Table 25 exhibits the results for the moderating role of verbal cognitive abilities in the relationship between experience of adverse life events and academic problems among adolescents. Model 1 of the table highlights the moderation effect of vocabulary. Values of the interaction term express that vocabulary significantly moderated the effect of adverse life experiences (B = -.004, R^2 = .11, F (3, 659) = 41.89, p < .001) and explained 11% of variance in academic problems of adolescents. These results are illustrated through mod graph (Figure 38) which defines this moderation effect at high, medium and low levels of vocabulary. Line graph shows that high and medium levels of vocabulary had a negative effect in the relationship and palliated the effect of adverse life experiences on academic problems. At the contrary, low level of the ability escalated this effect.

Model 2 of the table shows results for the moderation effect of verbal reasoning ability. Findings of the model indicate that verbal reasoning had a significant moderation effect (B = -.006, R^2 = .09, F (3, 659) = 30.17, p < .001) in the association between

experience of adverse life events and academic problems of adolescents along with producing 9% of variance. A mod graph (Figure 39) further explicate these findings by suggesting that high level of verbal reasoning buffered the impact of adverse life experiences on adolescents' academic problems whereas low level of the ability deteriorated this effect. However medium level of verbal reasoning ability did not contribute any visible effect in this relationship.

Results for the moderation effect of Numerical Reasoning are given in model 3 of the table. A significant interaction term suggests that Numerical Reasoning significantly moderated ($B = -.003$, $R^2 = .13$, $F (3, 659) = 45.55$, $p < .001$) the effect of adverse life experiences on academic problems along with accounting for 13% if variance. These results are further elucidated through a graphical presentation (Figure 40) which depicts that medium and low levels of Numerical Reasoning boosted the effect of adverse life experiences on academic problems whereas high level of the ability was related to low relationship between experience of adverse events and academic problems among adolescents.

As far Information is concerned, results reveal that this ability did accounted for significant moderation ($B = -.006$, $p = .745$) in the relationship between experience of adverse events and academic problems among adolescents.

Table 26

Moderating effect of Verbal Cognitive Abilities on Feelings of Rejection among Adolescents (N = 663)

					Feelings of Rejection	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		10.18	.29	34.98	.000	[9.60, 10.75]
EALE		.03	.009	3.05	.002	[.01, .04]
VOC		-.05	.04	-1.19	.231	[-.13, .03]
EALE × VOC		-.002	.0005	-3.57	.000	[-.003, -.001]
R^2	.12					
F	49.19				.000	
Constant		9.99	.26	38.09	.000	[9.48, 10.51]
EALE		.03	.01	3.88	.000	[.02, .05]
VR		-.03	-.11	-.29	.774	[-.25, .19]
EALE × VR		-.004	-.001	-3.24	.001	[-.006, -.001]
R^2	.10					
F	37.73				.000	
Constant		10.16	.28	35.88	.000	[9.61, 10.72]
EALE		.07	.008	9.56	.000	[.06, .09]
NA		-.23	.05	-4.82	.000	[-.32, -.14]
EALE × NA		-.002	.001	-3.64	.000	[-.004, -.001]
R^2	.12					
F	50.46				.000	
Constant		9.71	.25	38.50	.000	[9.21, 10.20]
EALE		.04	.008	4.91	.000	[.02, .05]
INFO		-.02	.07	-.22	.825	[-.12, .15]
EALE × INFO		-.001	.001	-1.26	.208	[-.001, .002]
R^2	.09					
F	31.69				.000	

*p>.05= Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, VOC = Vocabulary, VR = Verbal Reasoning, NA = Numerical Reasoning, INFO = Information

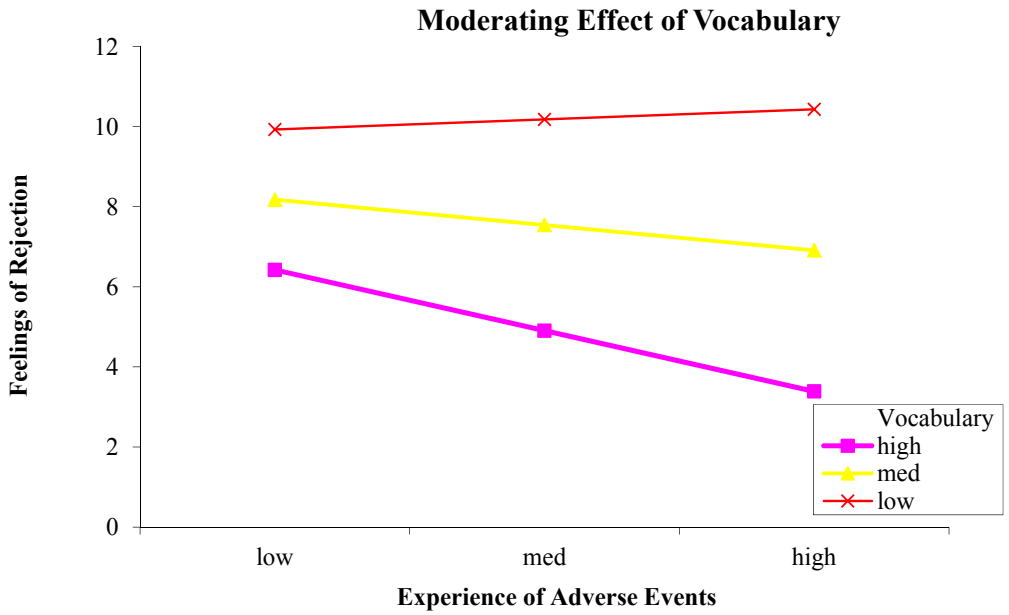

Figure 41. Moderating effect of vocabulary in predicting feelings of rejection among adolescents

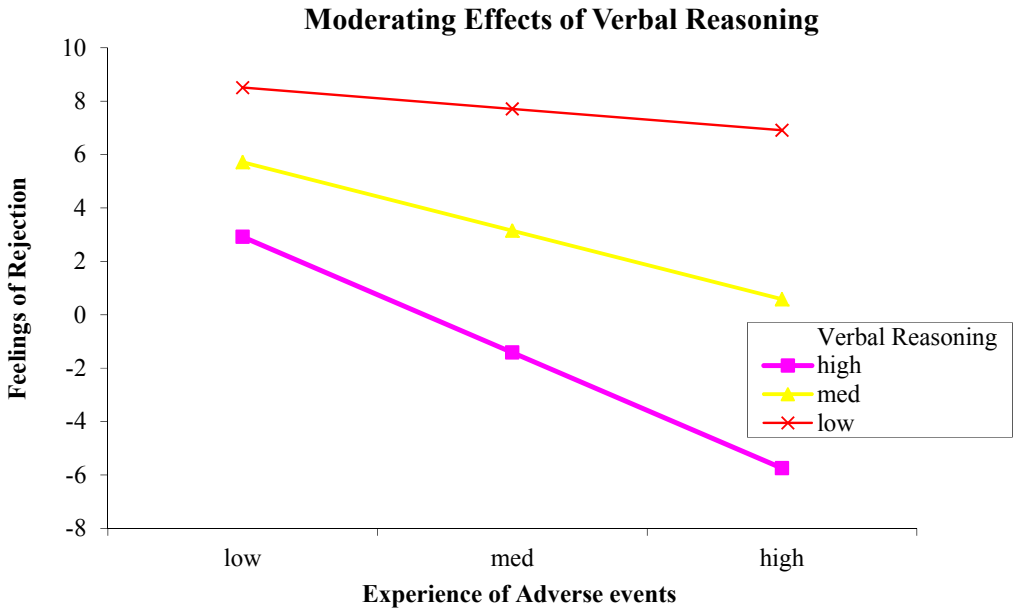

Figure 42. Moderating effect of verbal reasoning in predicting feelings of rejection among adolescents

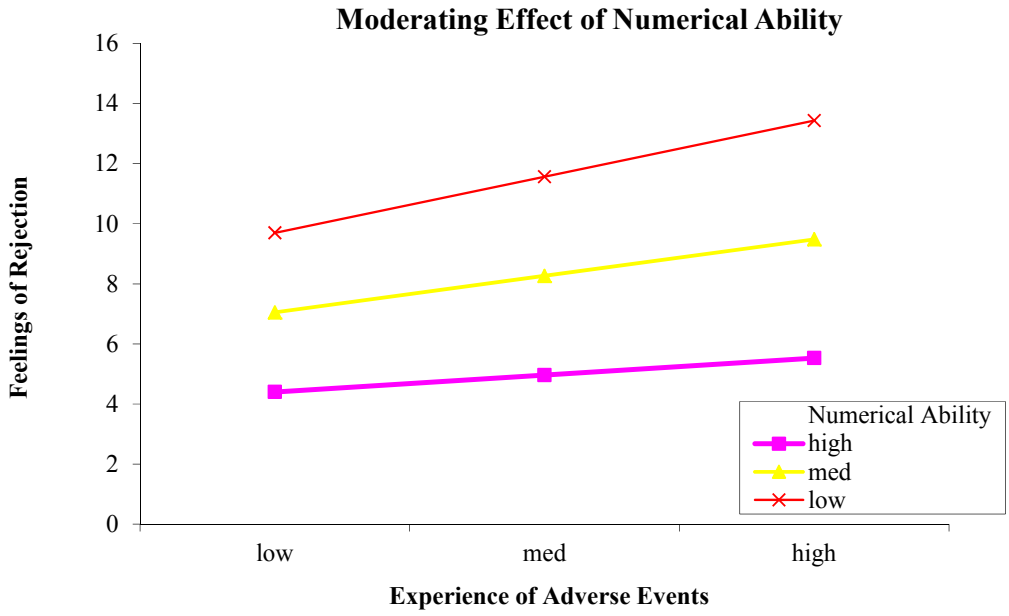

Figure 43. Moderating effect of Numerical Reasoning in predicting feelings of rejection among adolescents

Table 26 displays results for the moderating role of verbal cognitive abilities in the relationship between experience of adverse life events and feelings of rejection among adolescents. Model 1 of the table expresses the moderation effect of vocabulary. A significant interaction effect suggest that feelings of rejection significantly moderated (B = -.002, R^2 = .12, F (3, 659) = 49.19, p < .001) the impact of adverse life experiences on feelings of rejection while explaining 12% of variance. These results are further explicated through mod graph (Figure 41) which defines this moderation effect at high, medium and low levels of vocabulary. The pattern of the lines show that high and medium levels of vocabulary weakened the effect of adverse life experiences on feelings of rejection while low level of the ability boosted this effect.

Moderating role of verbal reasoning ability is manifested in model 2 of the table. Values of the model suggest a significant moderation effect (B = -.004, R^2 = .10, F (3, 659) = 37.73, p < .001) of verbal reasoning ability for the relation of adverse life experiences

and feelings of rejection along with accounting for 10% of variance. Figure 42 graphically explicate this moderation effect by suggesting that high and medium levels of verbal reasoning ability buffered the impact of adverse life experiences on feelings of rejection whereas low level of the ability was related to greater impact of adverse life experiences.

Model 3 of the table expresses the moderation effect of Numerical Reasoning. Values in the model suggest a strong interaction effect (B = -.002, R^2 = .12, F (3, 659) = 50.46, $p < .001$) of Numerical Reasoning and experience of adverse life events in explaining feelings of rejection among adolescents while explaining 12% of variance. A mod graph (Figure 43) further elaborates these results at different levels of Numerical Reasoning (i.e. high, medium and low). The graph depicts that medium and low levels of numerical abilities aggravated the effect of adverse life experiences on feelings of rejection among adolescents. However when the ability level was high, the impact of adverse life experiences on feelings of rejection was low.

Moderation effect of Information is shown in model 4 which reveals that Information ability did not accounted for a significant moderation effect (B = -.001, p = .208) in the relationship between experience of adverse life events and feelings of rejection among adolescents.

Table 27

Moderating effect of Self-Debasing Cognitive Errors on Anxiousness among Adolescents (N = 663)

					Anxiousness	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		24.02	.34	70.57	.000	[23.36, 24.69]
EALE		.07	.06	8.86	.000	[.052, .081]
CATA		.85	.008	14.39	.000	[.73, .96]
EALE × CATA		.004	.001	2.63	.009	[.006, .009]
R^2	.39					
F	141.41				.000	
Constant		23.88	.34	69.99	.000	[23.21, 24.56]
EALE		.082	.007	11.14	.000	[.07, .09]
PERS		.75	.056	13.49	.000	[.64, .86]
EALE × PERS		.004	.001	2.81	.005	[.006, .01]
R^2	.34					
F	108.31				.000	
Constant		24.09	.36	65.97	.000	[23.37, 24.81]
EALE		.07	.01	9.20	.000	[.06, .09]
SA		.73	.07	9.97	.000	[.59, .88]
EALE × SA		.009	.002	5.18	.000	[.013, .06]
R^2	.28					
F	98.74				.000	
Constant		24.10	.32	74.45	.000	[23.47, 24.74]
EALE		.06	.01	8.72	.000	[.05, .08]
OG		.86	.05	17.32	.000	[.76, .96]
EALE × OG		.005	.001	4.50	.000	[.007, .03]
R^2	.42					
F	180.54				.000	

p>.05= Non-significant, ***$p < .001$

Note: EALE = Experience of Adverse Life Event, CATA = Catastrophizing, PERS = Personalization, SA = Selective Abstraction, OG = Over Generalization

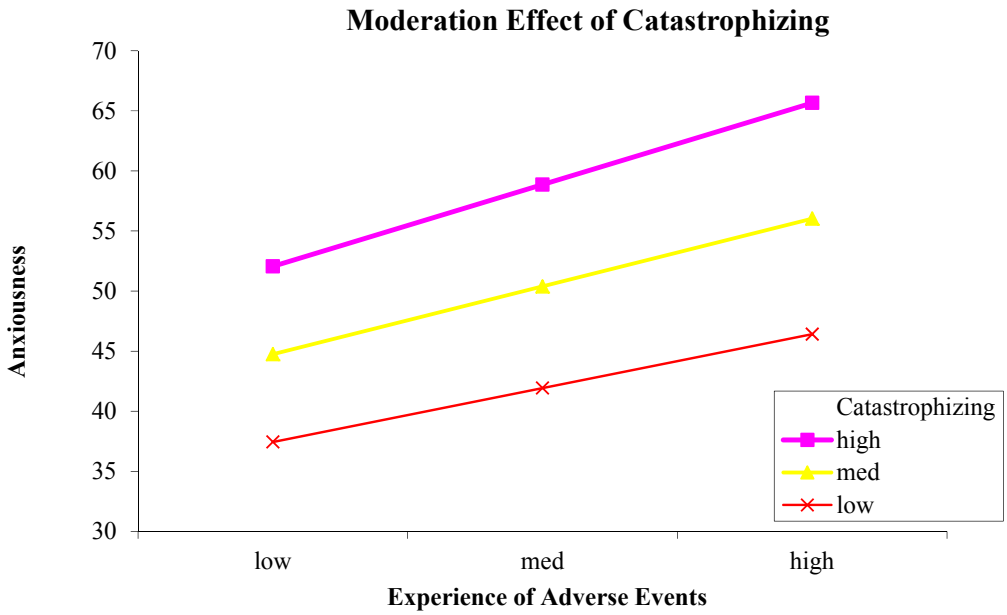

Figure 44. Moderating effect of catastrophizing in predicting anxiousness among adolescents

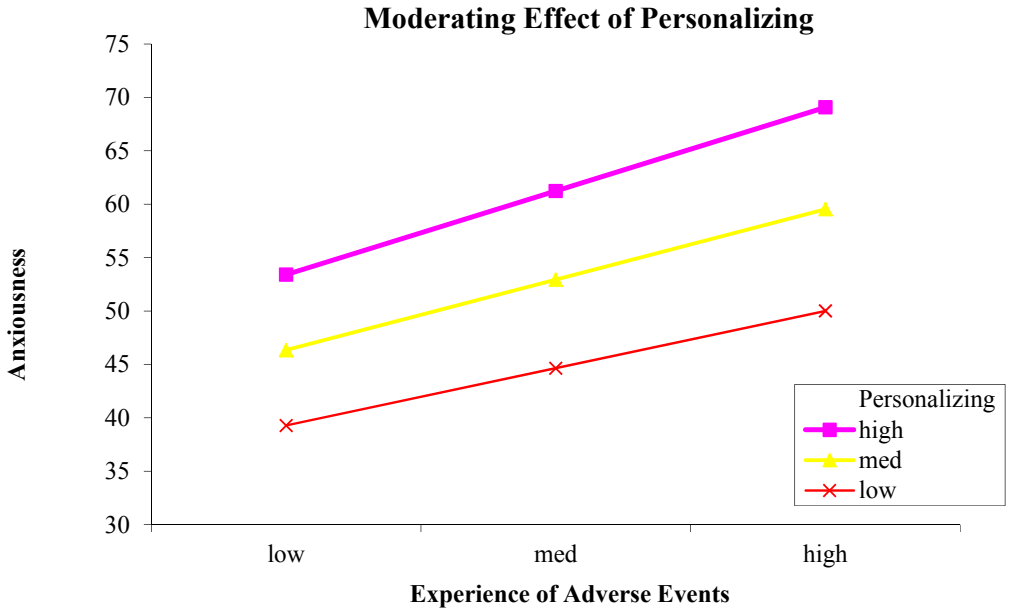

Figure 45. Moderating effect of personalizing in predicting anxiousness among adolescents

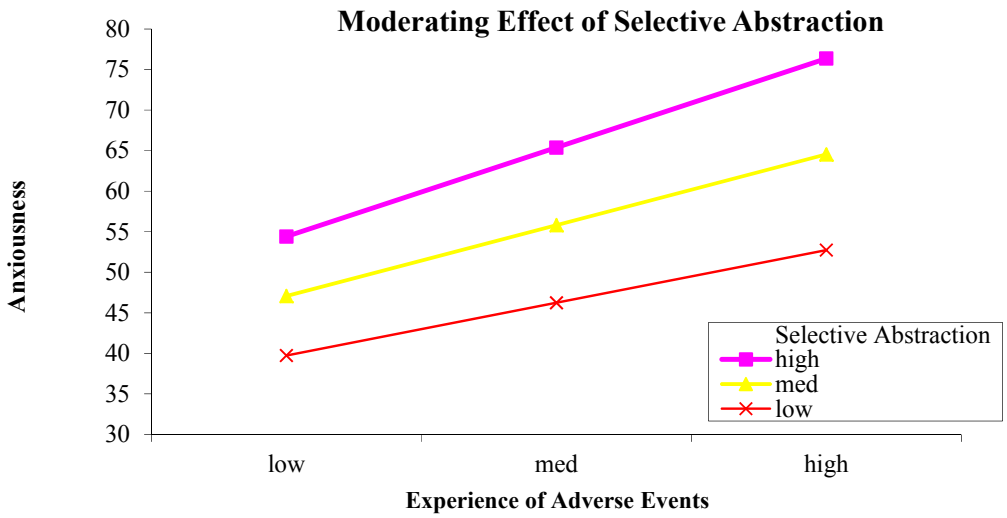

Figure 46. Moderating effect of selective abstraction in predicting anxiousness among adolescents

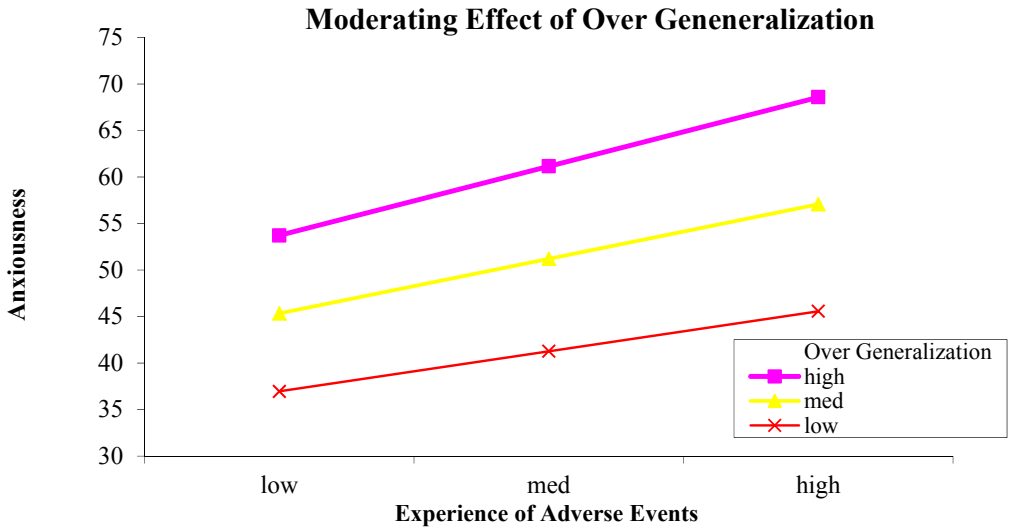

Figure 47. Moderating effect of over generalization in predicting anxiousness among adolescents

Table 27 displays results for the moderating role of self-debasing cognitive errors in relationship between experience of adverse life events and anxiousness among adolescents. Model 1 of the table expresses the moderating power of catastrophizing. Values indicate that catastrophizing significantly moderated (B = .004, R^2 = .39, F (3, 659) = 141.41, p <

.001) the impact of adverse life experiences on anxiousness with explaining 39% of variance. Interaction plot (Figure 44) explicates this moderation effect at high, medium and low levels of catastrophizing. Figure shows that catastrophizing exacerbated the effect of adverse life experiences on anxiousness among adolescents. As the level of catastrophizing increased the impact of adverse life experiences on anxiousness also intensified.

Model 2 of the table highlights the moderation effect of personalization. Interaction term revealed personalization a significant moderator (B = .004, t = 2.81, p < .01) with explaining 34% of variance (R^2 = .34, F (3, 659) = 108.31, p < .001) in anxiousness. Mod graph (Figure 45) further elaborated the findings by indicating that personalization intensified the effect of adverse life events on anxiousness. As the level of personalization rose it boosted the effect of adverse life experiences on anxiousness.

As far the moderating power of selective abstraction is concerned, results are given in model 3 of the table. Significant interaction effect (B = .009, t = 5.18, p < .001) reveals that personalization moderated the relationship between experience of adverse life events and anxiousness among adolescents by explaining 24% of variance (R^2 = .24, F (3, 659) = 98.74, p < .001). Results are further extended through interaction plot (Figure 46) which depicts that selective abstraction exacerbated the effect of experience of adverse life events on anxiousness among adolescents. Increase in selective abstraction boosted the relationship between the experience of adverse life events and anxiousness.

For over generalization interaction term suggests a significant moderation effect (B = .005, t = 4.50, p < .001) along with accounting for 42% of variance (R^2 = .42, F (3, 659) = 180.54, p < .001) in anxiousness. Interaction plot (Figure 47) further elaborates these findings by suggesting that over generalization aggravated the effect of adverse life experiences on anxiousness. Patterns of slopes suggest that as over generalization increased in level it intensified the impact of adverse life experiences on anxiousness.

Table 28

Moderating effect of Self-Debasing Cognitive Errors on Aggression among Adolescents (N = 663)

					Aggression	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		16.62	.27	61.76	.000	[16.09, 17.15]
EALE		.05	.006	8.94	.000	[.04, .07]
CATA		-.09	.04	-2.52	.012	[-.17, -.02]
EALE × CATA		-.006	.001	-6.69	.000	[-.01, -.004]
R^2	.14					
F	42.005				.000	
Constant		16.42	.26	63.11	.000	[15.90, 16.93]
EALE		.05	.006	8.81	.000	[.04, .06]
PERS		-.26	.04	-6.70	.000	[-33, -.18]
EALE × PERS		-.003	.001	-3.51	.000	[-.005, -.001]
R^2	.18					
F	50.09				.000	
Constant		16.55	.27	62.18	.000	[16. 02, 17.07]
EALE		.05	.01	9.06	.000	[.04, .07]
SA		-.17	.05	-3.61	.000	[-.27, -.08]
EALE × SA		-.006	.001	-5.34	.000	[-.01, -.004]
R^2	.15					
F	39.32					
Constant		16.64	.27	61.10	.000	[16.11, 17.16]
EALE		.05	.006	9.09	.003	[.04, .07]
OG		-.10	.035	-2.95	.000	[-17, -.03]
EALE × OG		-.005	.001	-6.85	.000	[-.007, -.004]
R^2	.15					
F	42.59				.000	

*p>.05= Non-significant, ***p* < .001

Note: Note: EALE = Experience of Adverse Life Event, CATA = Catastrophizing, PERS = Personalization, SA = Selective Abstraction, OG = Over Generalization

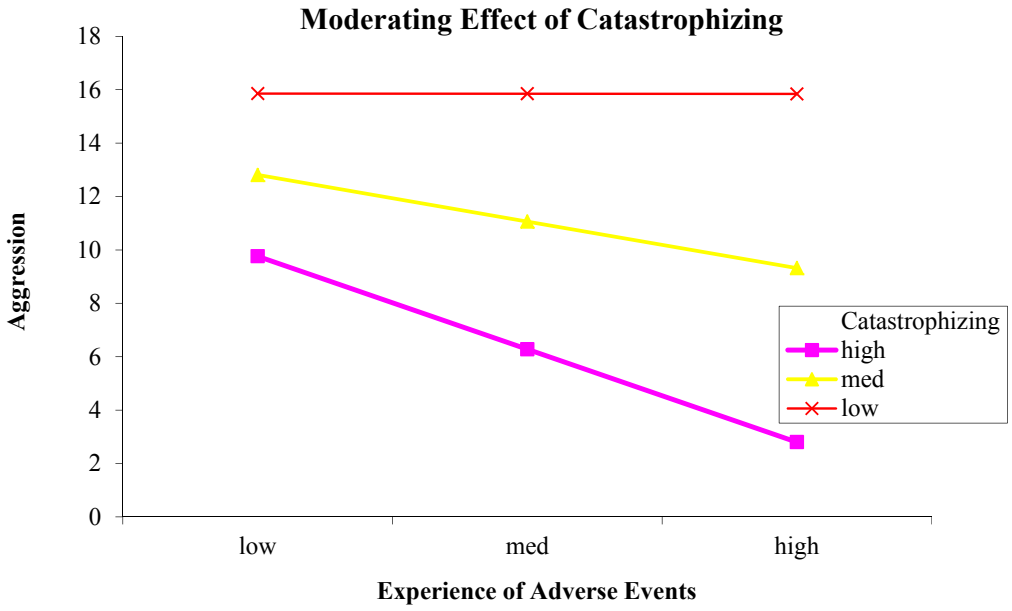

Figure 48. Moderating effect of catastrophizing in predicting aggression among adolescents

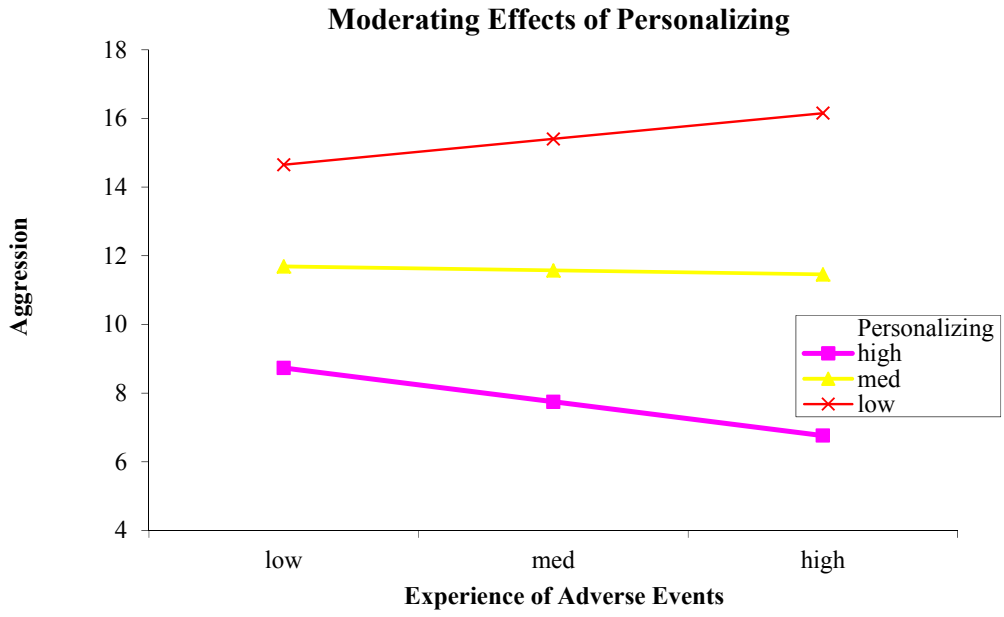

Figure 49. Moderating effect of personalizing in predicting aggression among adolescents

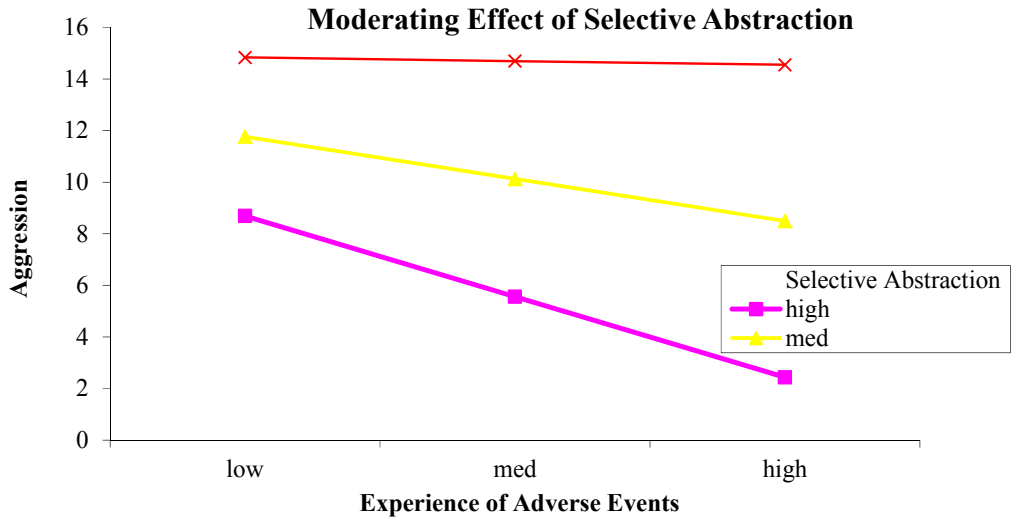

Figure 50. Moderating effect of selective abstraction in predicting aggression among adolescents

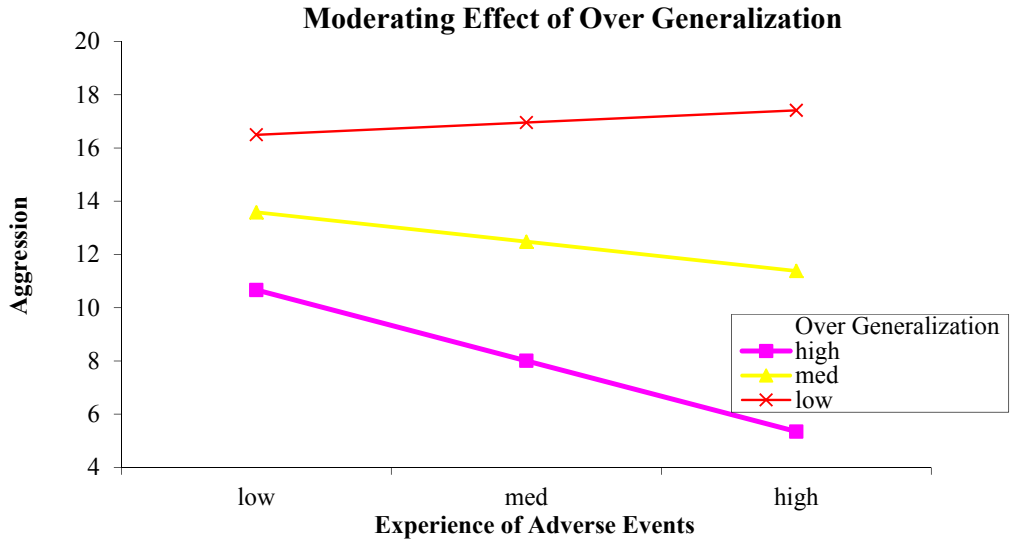

Figure 51. Moderating effect of over generalization in predicting aggression among adolescents

Table 28 demonstrates results for the moderating effect of self-debasing cognitive errors in relationship between experience of adverse life events and aggression among adolescents. Model 1 of the table reveals the moderation effect for catastrophizing. A significant interaction term (B = -.006, t = -6.69, $p < .001$) suggests that catastrophizing significantly moderated the relationship between experience of adverse life events and

aggression among adolescents and accounted for 14% of variance (R^2 = .14, F (3, 659) = 42.005, p < .001). These findings are further extended through graphical presentation (Figure 48) which depicts that medium and low level of catastrophizing minimized the impact of adverse life events on adolescents' aggressive behavior. However when this cognitive error was at low level it did not contributed a significant change in the relationship between experience of adverse life events and aggression.

For personalization, model 2 of the table reveals a significant interaction term (B = -.003, t = -3.51, p < .001) between personalization and experience of adverse life events which states personalization a significant moderator along with producing 18% of variance (R^2 = .18, F (3, 659) = 50.09, p < .001) in aggression among adolescents. Further elucidating these results, mod graph (Figure 49) shows that personalization buffered the impact of experience of adverse life events on aggressive behavior of adolescents. Patterns of slopes indicate that high level of personalization weakened the effect of adverse life experiences while low level of this cognitive error boosted this effect. However no visible change was observed when the catastrophizing was at medium level.

Selective abstraction, as the interaction term suggests (B = -.006, t = -5.34, p < .001), also emerged as a significant moderator and accounted for 15% of variance in aggression (R^2 = .15, F (3, 659) = 39.32, p < .001). Interaction plot (Figure 50) explicates these findings through slopes indicating that high and medium levels of selective abstraction decreased the effect of adverse life experience on aggressive behavior of adolescents. However, low level of this cognitive error did not contribute significant variance in the relationship.

Model 4 of the table displays the results for moderating effect of over generalization. Interaction term suggests (B = -.005, t = -6.85, p < .001) that over generalization significantly moderated the relationship between experience of adverse life

events and aggression among adolescents while explaining 15% of variance (R^2 = .15, F (3, 659) = 42.59, p < .001). Mod graph (Figure 51) makes these results evident by depicting that high and medium levels of over generalization minimized the impact of adverse life experiences on aggressive behavior of adolescents while low level of this cognitive error aggravated this effect.

Table 29

Moderating effect of Self-Debasing Cognitive Errors on Social Withdrawal among Adolescents (N = 663)

					Social Withdrawal	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		15.07	.19	81.13	.000	[14.70, 15.43]
EALE		.04	.03	8.81	.000	[.03, .04]
CATA		.40	.004	12.34	.000	[.34, .47]
EALE × CATA		.003	.001	3.32	.001	[.004, .01]
R^2	.34					
F	122.51				.000	
Constant		14.97	.19	79.71	.000	[14.60, 15.34]
EALE		.04	.004	10.92	.000	[.03, .05]
PERS		.35	.03	11.67	.000	[.29, .41]
EALE × PERS		.002	.001	3.32	.001	[.003, .009]
R^2	.29					
F	90.24				.000	
Constant		15.08	.19	76.49	.000	[14.69, 15.47]
EALE		.04	.004	9.31	.000	[.03, .05]
SA		.34	.04	8.69	.000	[.26, .41]
EALE × SA		.01	.001	5.42	.000	[.007, .03]
R^2	.24					
F	89.49				.000	
Constant		15.10	.18	83.45	.000	[14.74, 15.45]
EALE		.03	.004	8.79	.000	[.03, .04]
OG		.39	.03	14.30	.000	[.34, .45]
EALE × OG		.003	.001	4.58	.000	[.004, .01]
R^2	.36					
F	140.85				.000	

*p>.05= Non-significant, ***p* < .001

Note: Note: EALE = Experience of Adverse Life Event, CATA = Catastrophizing, PERS = Personalization, SA = Selective Abstraction, OG = Over Generalization

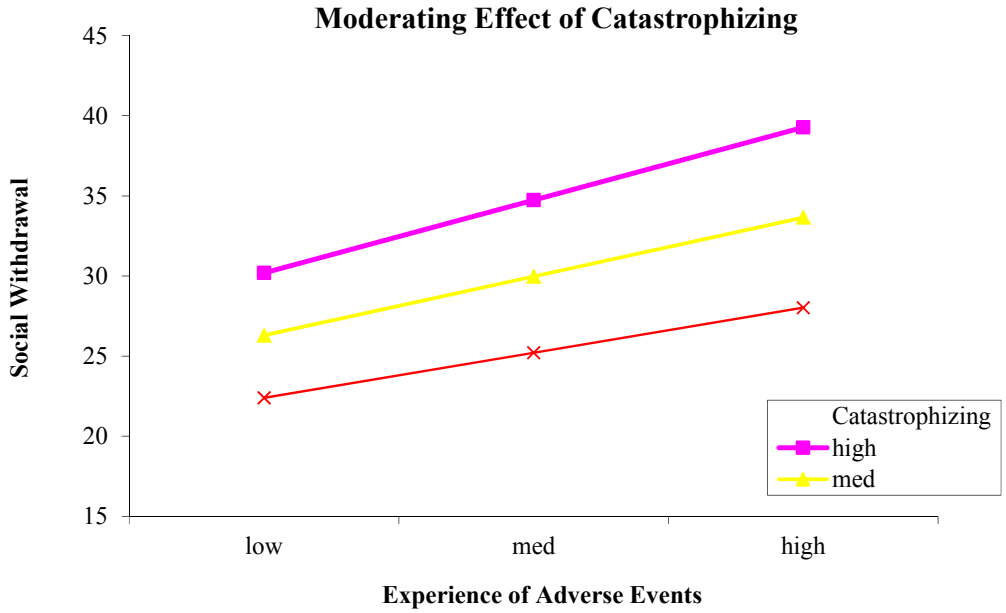

Figure 52. Moderating effect of catastrophizing in predicting social withdrawal among adolescents

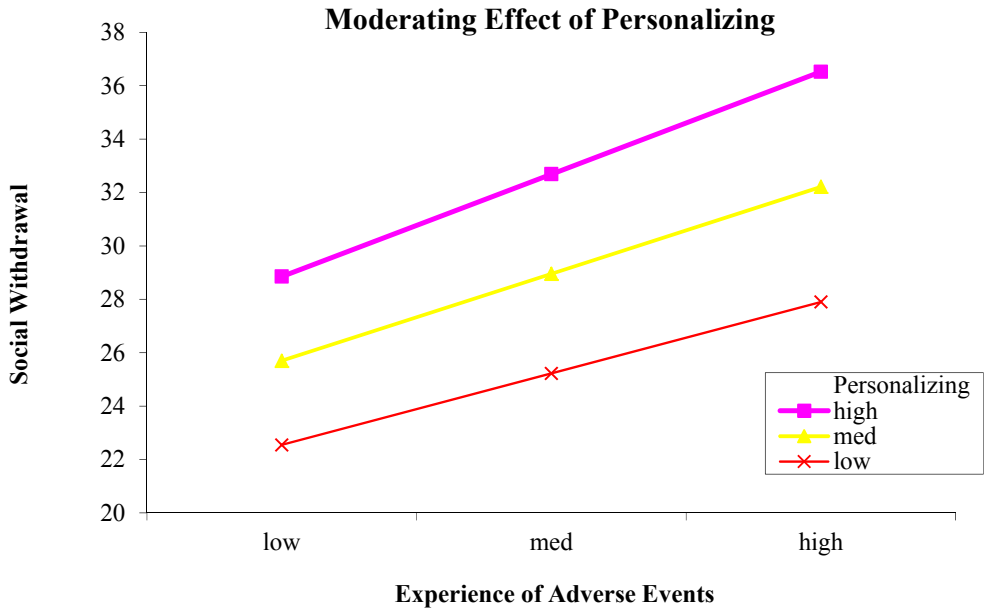

Figure 53. Moderating effect of personalizing in predicting aggression among adolescents

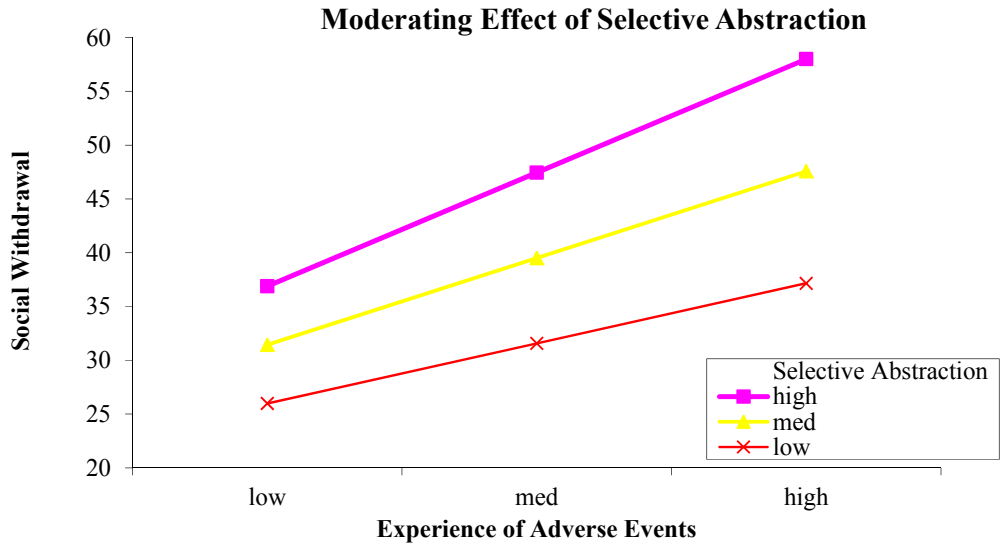

Figure 54. Moderating effect of selective abstraction in predicting aggression among adolescents

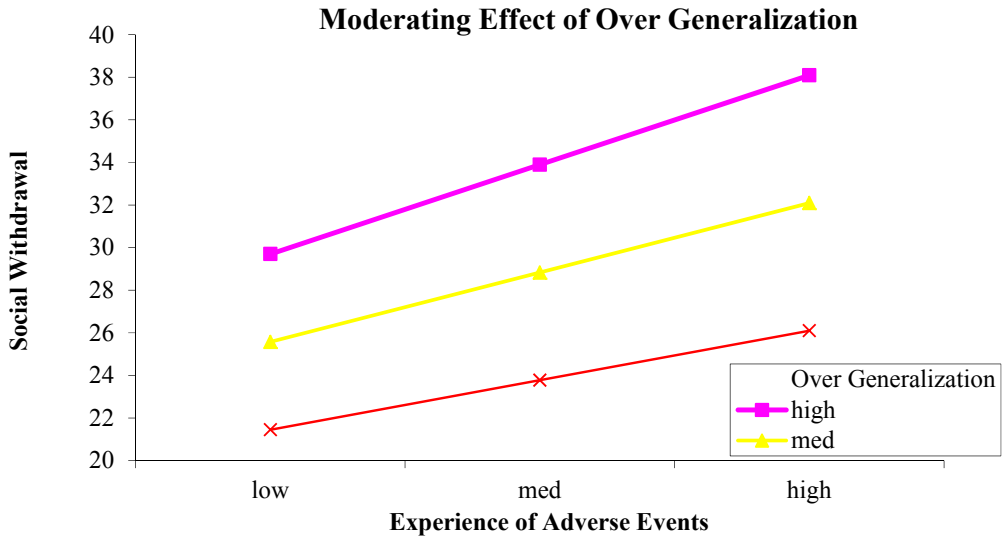

Figure 55. Moderating effect of over generalization in predicting aggression among adolescents

Results displayed in Table 29 reveal the moderating role of self-debasing cognitive errors in relationship between experience of adverse life events and social withdrawal among adolescents. Model 1 of the table shows moderating power of catastrophizing.

Significant interaction term shows (B = .003, t = 3.32, p < .01) that catastrophizing moderated the impact of adverse life experiences on social withdrawal and explained 34% of variance (R^2 = .34, F (3, 659) = 122.51, p < .001) in social withdrawal. Extending the results, interaction plot (Figure 52) illustrates that catastrophizing exacerbated the effect of adverse life experiences on social withdrawal. Slopes of the graph depict that as the level of catastrophizing increased the impact of adverse life experiences on social withdrawal also escalated.

Personalization, as the interaction term depicts, also served as a significant moderator (B = .002, t = 3.32, p < .01) with explaining 29% of variance (R^2 = .29, F (3, 659) = 90.24, p < .001) in social withdrawal. Making this moderation effect more obvious, mod graph (Figure 53) shows that personalization aggravated the effect of experience of adverse life events on social withdrawal among adolescents. Slopes of the graph illustrate that as the level of personalization increased the impact of adverse life experiences also stepped up.

Moderating effect of selective abstraction is presented in model 3 of the table. Findings reveal a significant interaction effect (B = .01, t = 5.42, p < .001) between experience of adverse life events and selective abstraction along with producing 24% of variance in social withdrawal (R^2 = .24, F (3, 659) = 89.49, p < .001). Mod graph (Figure 54) explicates the moderating power of selective abstraction through slopes which depict that selective abstraction boosted the effect of adverse life experiences on social withdrawal. Trend of the slopes suggests that increase in the level of selective abstraction intensified the impact of adverse life experiences on social withdrawal.

Model 4 of the table displays results for the moderating effect of over generalization. Values of the interaction term (B = .003, t = 4.58, p < .001) indicate that over generalization significantly moderated the effect of adverse life experiences on social

withdrawal. Results reveal 36% of variance explained (R^2 = .36, F (3, 659) = 140.85, p < .001) in social withdrawal by over generalization and experience of adverse life events collectively. Extending these results, mod graph (Figure 55) illustrates that over generalization escalated the effect of adverse life experiences on social withdrawal. Slopes of the graph indicate that increase in the level of over generalization multiplied the impact of adverse life experiences on social withdrawal.

Table 30

Moderating effect of Self-Debasing Cognitive Errors on Somatic Complaints among Adolescents (N = 663)

					Somatic Complaints	
Variable		*B*	*SE B*	*t*	*p*	*95%CI*
Constant		7.77	.12	65.62	.000	[7.54, 8.007]
EALE		.02	.003	7.43	.000	[.02, .03]
CATA		.24	.02	12.82	.000	[.19, .27]
EALE × CATA		.001	.0005	1.37	.169	[-.002, .0003]
R^2	.29					
F	97.99				.000	
Constant		7.75	.12	66.56	.000	[7.52, 7.98]
EALE		.03	.003	9.62	.000	[.02, .03]
PERS		.22	.02	12.51	.000	[.18, .25]
EALE × PERS		.0003	.0004	.77	.444	[-.001, .0005]
R^2	.28					
F	87.34				.000	
Constant		7.79	.12	63.29	.000	[7.55, 8.03]
EALE		.02	.003	7.91	.000	[.02, .03]
SA		.22	.02	9.11	.000	[.17, .28]
EALE × SA		.002	.001	3.05	.002	[.003, .006]
R^2	.23					
F	67.85				.000	
Constant		7.78	.11	69.66	.000	[7.56, 7.99]
EALE		.02	.003	7.50	.000	[.01, .02]
OG		.25	.01	15.83	.000	[.22, .28]
EALE × OG		.0007	.0004	1.88	.061	[-.001, .001]
R^2	.35					
F	124. 75				.000	

*p>.05= Non-significant, ***p* < .001

Note: Note: EALE = Experience of Adverse Life Event, CATA = Catastrophizing, PERS = Personalization, SA = Selective Abstraction, OG = Over Generalization

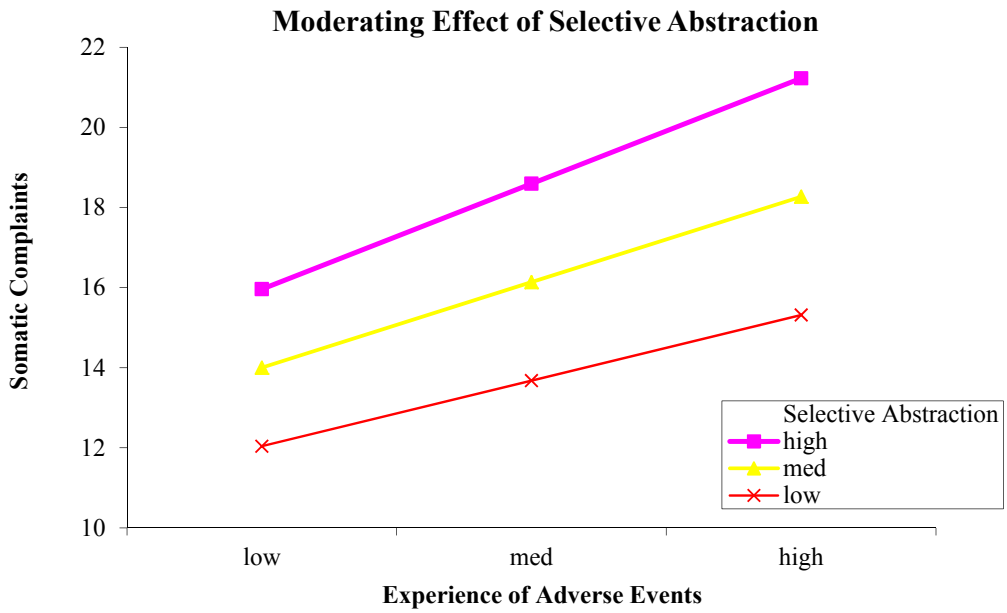

Figure 56. Moderating effect of selective abstraction in predicting somatic complaints among adolescents

Table 30 shows results for moderating role of self-debasing cognitive errors in relationship between experience of adverse life events and somatic complaints among adolescents. Values of the table reveal that only selective abstraction showed a significant moderation effect (B = .002, t = 3.05, $p < .01$) with explaining 23% of variance ($R^2 = .23$, F (3, 659) = 67.85, $p < .001$) in somatic complaints. Interaction plot (Figure 56) explicates this moderation effect at high, medium and low levels of selective abstraction. Slopes of the graph suggest that selective abstraction exacerbated the effect of adverse life experiences on somatic complaints among adolescents. As the level of selective abstraction increased the impact of adverse life experiences on somatic complaints also intensified. However, all other self-debasing cognitive error, including the composite model, did not account for statistically significant moderation ($p > .05$) in the model.

Table 31

Moderating effect of Self-Debasing Cognitive Errors on Academic Problems among Adolescents (N = 663)

					Academic Problems	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		17.67	.28	62.85	.000	[17.12, 18.23]
EALE		.05	.006	7.67	.000	[.03, .06]
CATA		.41	.05	9.07	.000	[.32, .50]
EALE × CATA		.003	.001	2.81	.005	[.005, .009]
R^2	.21					
F	66.19				.000	
Constant		17.56	.29	60.98	.000	[16.99, 18.13]
EALE		.05	.05	8.87	.000	[.04, .06]
PERS		.25	.006	4.99	.000	[.15, .35]
EALE × PERS		.003	.001	2.76	.006	[.005, .009]
R^2	.13					
F	34.89				.000	
Constant		17.69	.29	60.77	.000	[17.12, 18.26]
EALE		.05	.006	4.42	.000	[.04, .06]
SA		.26	.06	8.25	.000	[.14, .37]
EALE × SA		.006	.001	4.15	.000	[.003, .008]
R^2	.14					
F	39.14				.000	
Constant		17.72	.27	64.75	.000	[17.19, 18.26]
EALE		.04	.006	7.53	.000	[.03, .06]
OG		.43	.04	11.30	.000	[.36, .50]
EALE × OG		.004	.001	4.53	.000	[.002, .006]
R^2	.24					
F	85.97				.000	

p>.05= Non-significant, ***$p < .001$

Note: Note: EALE = Experience of Adverse Life Event, CATA = Catastrophizing, PERS = Personalization, SA = Selective Abstraction, OG = Over Generalization

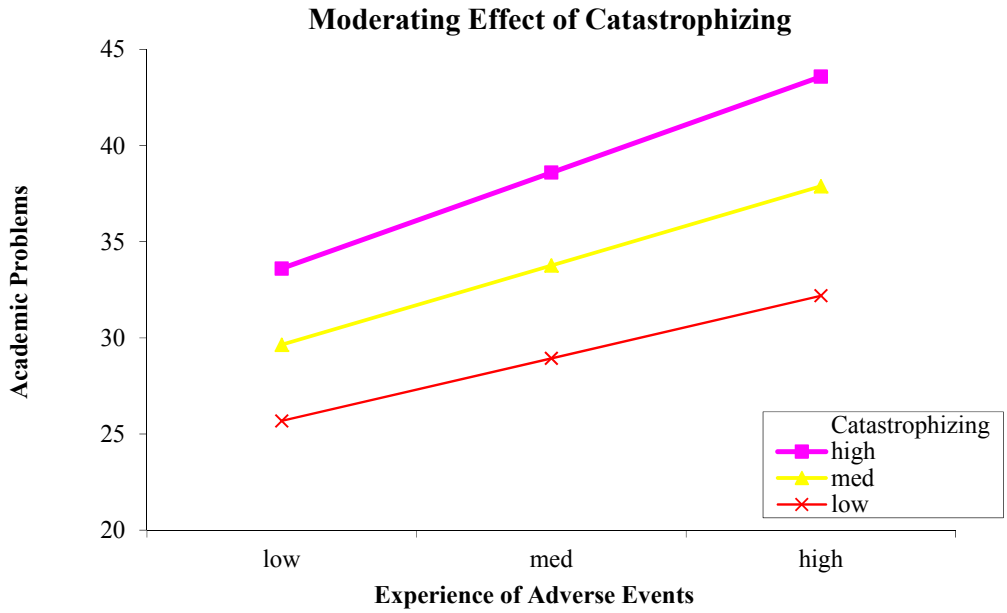

Figure 57. Moderating effect of catastrophizing in predicting academic problems among adolescents

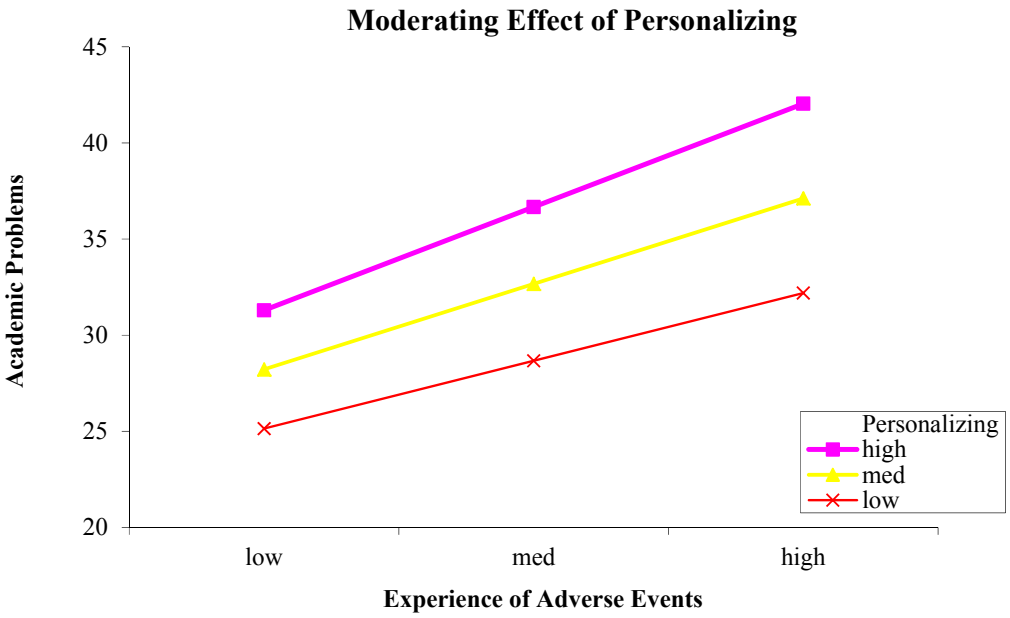

Figure 58. Moderating effect of personalizing in predicting academic problems among adolescents

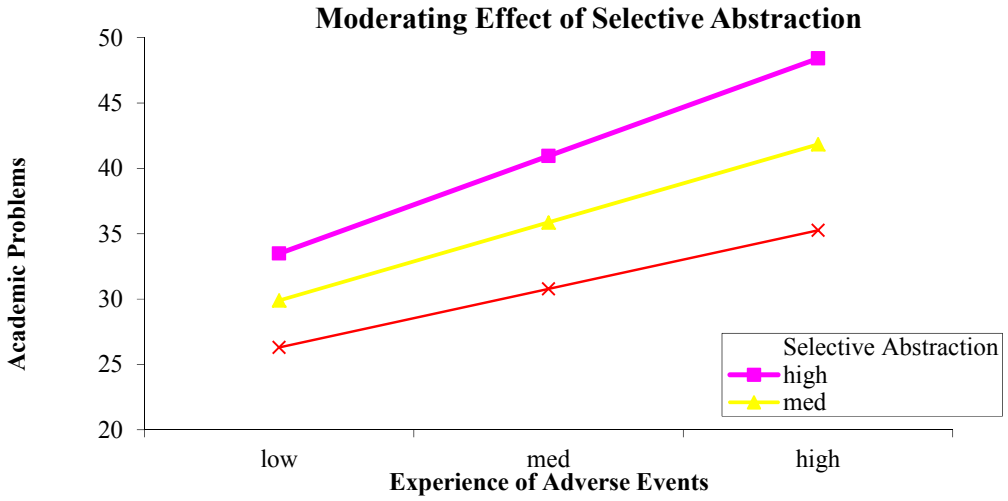

Figure 59. Moderating effect of selective abstraction in predicting academic problems among adolescents

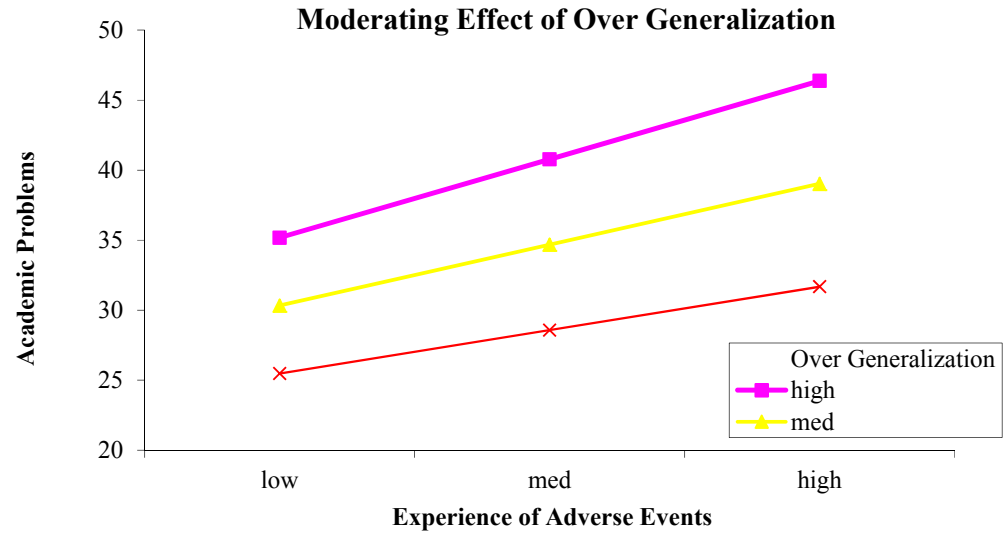

Figure 60. Moderating effect of over generalization in predicting academic problems among adolescents

Table 31 displays results for the moderating role of self-debasing cognitive errors in relationship between experience of adverse life events and academic problems among adolescents. Model 1 of the table expresses the moderating power of catastrophizing.

Values indicate that catastrophizing significantly moderated (B = .003, t = 2.81, p < .01) the impact of adverse life experiences on academic problems with explaining 21% of variance (R^2 = .21, F (3, 659) = 66.19, p < .001). Interaction plot (Figure 57) explicates this moderation effect at high, medium and low levels of catastrophizing. Figure shows that catastrophizing exacerbated the effect of adverse life experiences on academic problems among adolescents. As the level of catastrophizing increased the impact of adverse life experiences on academic problems got intensified.

Personalization, as the interaction term depicts, also served as a significant moderator (B = .003, t = 2.76, p < .01) with explaining 13% of variance (R^2 = .13, F (3, 659) = 34.89, p < .001) in academic problems. Making this moderation effect evident, mod graph (Figure 58) shows that personalization aggravated the effect of adverse life events on academic problems among adolescents. Slopes of the graph illustrate that as the level of personalization increased the impact of adverse life experiences also stepped up.

As far the moderating power of selective abstraction is concerned, results are given in model 3 of the table. Significant interaction effect (B = .006, t = 4.15, p < .001) reveals that personalization moderated the relationship between experience of adverse life events and academic problems among adolescents by explaining 14% of variance (R^2 = .14, F (3, 659) = 39.14, p < .001). Results are further extended through interaction plot (Figure 59) which depicts that selective abstraction exacerbated the effect of experience of adverse life events on academic problems among adolescents. Increase in selective abstraction boosted the relationship between the experience of adverse life events and academic problems.

Model 4 of the table displays results for the moderating effect of over generalization. Values of the interaction term (B = .004, t = 4.53, p < .001) indicate that over generalization significantly moderated the effect of adverse life experiences on academic problems. Results reveal 36% of variance explained (R^2 = .24, F (3, 659) = 85.97,

p < .001) in academic problems by over generalization and experience of adverse life events collectively. Extending these results, mod graph (Figure 60) illustrates that over generalization escalated the effect of adverse life experiences on academic problems. Slopes of the graph indicate that increase in the level of over generalization multiplied the impact of adverse life experiences on academic problems.

Table 32

Moderating effect of Self-Debasing Cognitive Errors on Feelings of Rejection among Adolescents (N = 663)

					Feelings of Rejection	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		9.55	16	58.88	.000	[9.24, 9.87]
EALE		.03	.004	7.71	.000	[.02, .03]
CATA		.36	.03	12.84	.000	[.30, .41]
EALE × CATA		.001	.0007	1.75	.040	[.001, .003]
R^2	.33					
F	116.78				.000	
Constant		9.50	.17	57.27	.000	[9.18, 9.83]
EALE		.03	.004	9.42	.000	[.03, .04]
PERS		.28	.03	9.84	.000	[. 22, .33]
EALE × PERS		.002	.0007	2.73	.006	[.0005, .003]
R^2	.25					
F	67.06				.000	
Constant		9.59	.17	54.89	.000	[9.26, 9.94]
EALE		.03	.004	8.26	.000	[.02, .04]
SA		.26	.03	7.37	.000	[.19, .32]
EALE × SA		.004	.001	4.77	.000	[.002, .006]
R^2	.20					
F	71.58				.000	
Constant		9.60	.16	59.94	.000	[9.29, 9.91]
EALE		.03	.004	7.45	.000	[.02, .03]
OG		.34	.03	14.03	.000	[.29, .38]
EALE × OG		.002	.001	3.72	.000	[.001, .003]
R^2	.34					
F	133.10				.000	

*p>.05= Non-significant, ***p* < .001

Note: Note: EALE = Experience of Adverse Life Event, CATA = Catastrophizing, PERS = Personalization, SA = Selective Abstraction, OG = Over Generalization

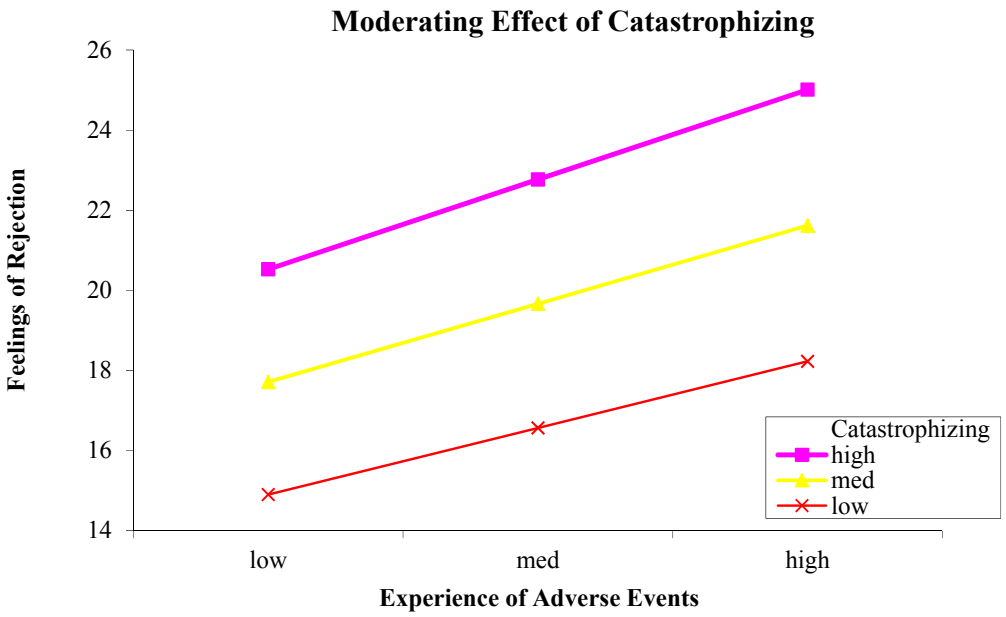

Figure 61. Moderating effect of catastrophizing in predicting feelings of rejection among adolescents

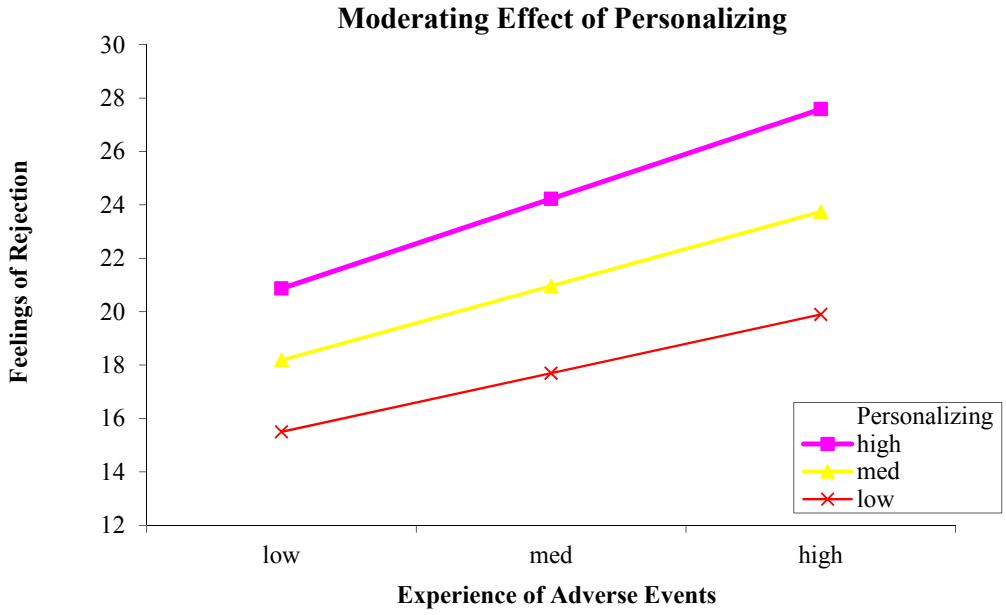

Figure 62. Moderating effect of personalizing in predicting feelings of rejection among adolescents

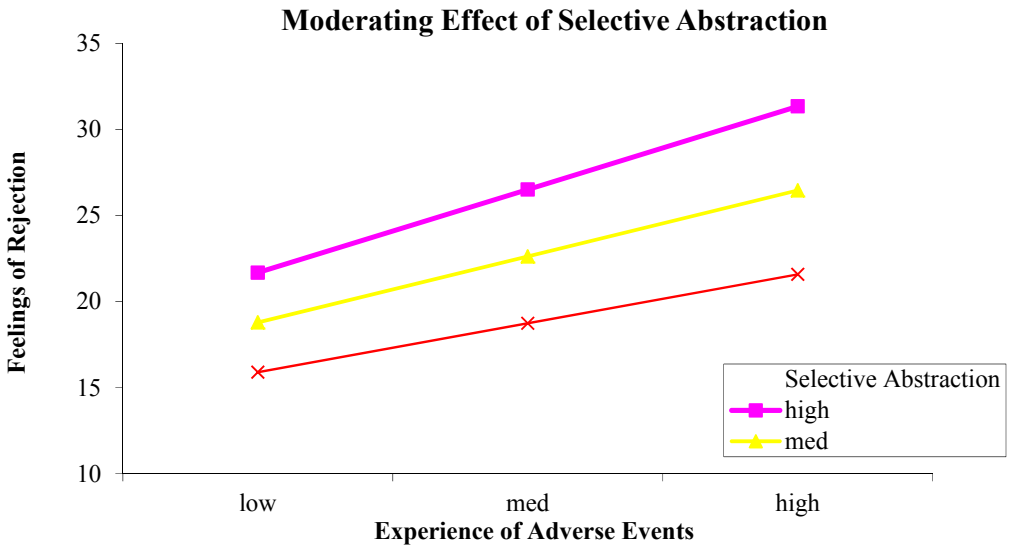

Figure 63. Moderating effect of selective abstraction in predicting feelings of rejection among adolescents

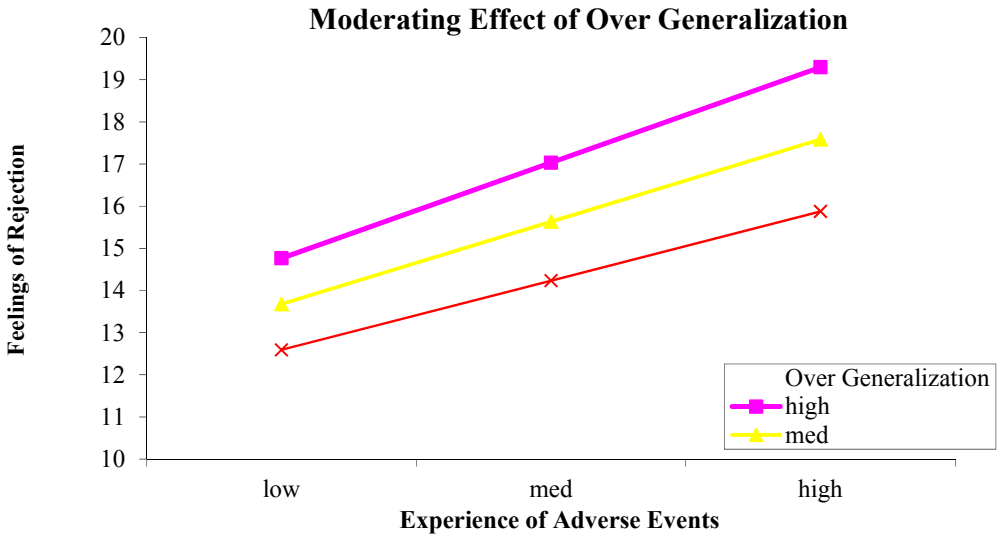

Figure 64. Moderating effect of over generalization in predicting feelings of rejection among adolescents

Results displayed in Table 32 reveal the moderating role of self-debasing cognitive errors in relationship between experience of adverse life events and feelings of rejection among adolescents. Model 1 of the table shows moderating power of catastrophizing.

Significant interaction term shows (B = .001, t = 1.75, p < .05) that catastrophizing moderated the impact of adverse life experiences explained 33% of variance (R^2 = .33, F (3, 659) = 116.78, p < .001) in feelings of rejection. Extending the results, interaction plot (Figure 61) illustrates that catastrophizing exacerbated the effect of adverse life experiences on feelings of rejection. Slopes of the graph depict that as the level of catastrophizing increased the impact of adverse life experiences on feelings of rejection also escalated.

Model 2 of the table highlights the moderation effect of personalization. Interaction term revealed personalization a significant moderator (B = .002, t = 2.73, p < .01) with explaining 25% of variance (R^2 = .25, F (3, 659) = 67.06, p < .001) in feelings of rejection. Mod graph (Figure 62) further elaborated the findings by indicating that personalization intensified the effect of experience of adverse life events on feelings of rejection. As the level of personalization rose it boosted the effect of adverse life experiences on feelings of rejection.

Moderating effect of selective abstraction is presented in model 3 of the table. Findings reveal a significant interaction effect (B = .004, t = 4.77, p < .001) between experience of adverse life events and selective abstraction along with producing 20% of variance in feelings of rejection (R^2 = .20, F (3, 659) = 71.58, p < .001). Mod graph (Figure 63) explicates the moderating power of selective abstraction through slopes which depict that selective abstraction boosted the effect of adverse life experiences on feelings of rejection. Trend of the slopes suggests that increase in the level of selective abstraction intensified the impact of adverse life experiences on feelings of rejection.

For over generalization interaction term suggests a significant moderation effect (B = .002, t = 3.72, p < .001) along with accounting for 34% of variance (R^2 = .34, F (3, 659) = 133.10, p < .001) in feelings of rejection. Interaction plot (Figure 64) further elaborates

these findings by suggesting that over generalization aggravated the effect of adverse life experiences on feelings of rejection. Patterns of slopes suggest that as over generalization increased in level it intensified the impact of adverse life experiences on feelings of rejection.

Table 33

Moderating effect of Self-Serving Cognitive Errors on Anxiousness among Adolescents (N = 663)

					Anxiety	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		24.08	.36	66.41	.000	[23.37, 24.79]
EALE		.10	.008	13.26	.000	[.09, .12]
SC		-.67	.07	-9.53	.000	[-.08, -.53]
EALE × SC		-.003	.002	-2.07	.038	[-.01, -.0002]
R^2	.25					
F	92.86				.000	
Constant		24.07	.37	65.29	.000	[23.34, 24.79]
EALE		.09	.01	12.25	.000	[.08, .11]
BO		-.42	.04	-9.48	.000	[-.50, -.33]
EALE × BO		-.003	.001	-3.42	.001	[-.01, -.001]
R^2	.23					
F	86.78				.000	
Constant		23.90	.42	57.59	.000	[23.09, 24.72]
EALE		.08	.01	9.35	.982	[.06, .09]
ML		-.003	.11	-.02	.000	[-22, .21]
EALE × ML		.0001	.002	.04	.964	[-.005, .005]
R^2	.12					
F	34.31				.000	
Constant		24.15	.38	63.91	.000	[23.41, 24.89]
EALE		.09	.01	11.12	.000	[.07, .10]
AW		-.55	.08	-6.61	.000	[-.71, -.38]
EALE × AW		-.01	.002	-5.29	.000	[-.01, -.006]
R^2	.19					
ΔR^2						
F	65.92				.000	

*p>.05= Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, SC = Self-Centeredness, BO = Blaming Others, ML = Mislabeling, AW = Assuming the Worst

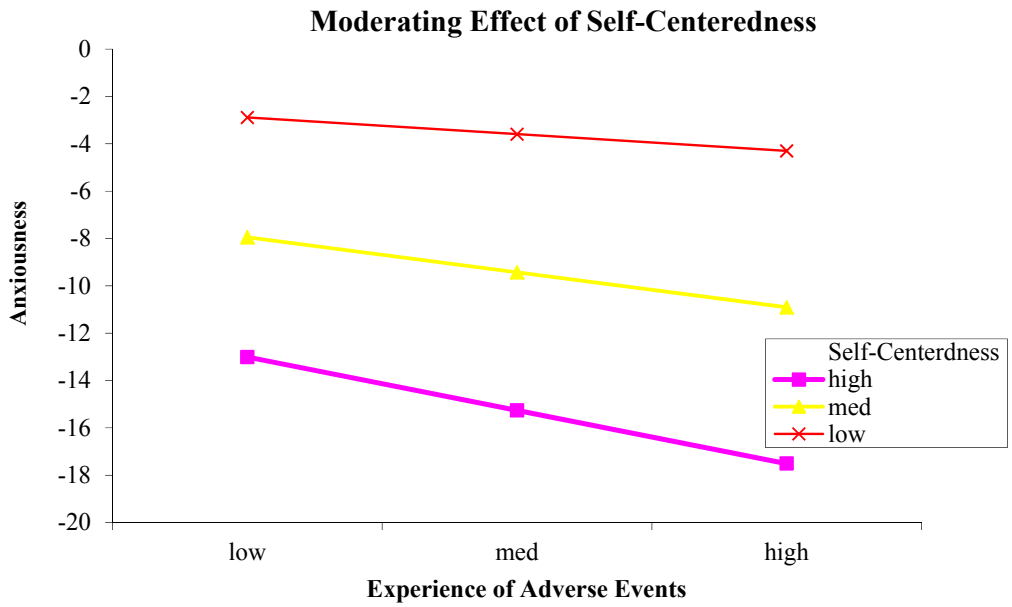

Figure 65. Moderating effect of self-centeredness in predicting anxiousness among adolescents

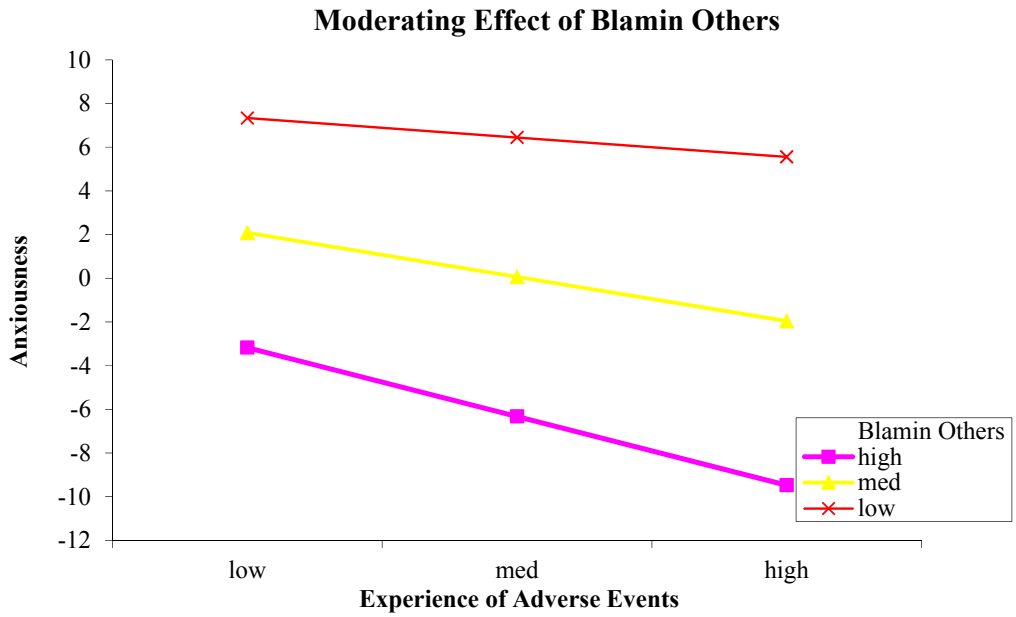

Figure 66. Moderating effect of blaming others in predicting anxiousness among adolescents

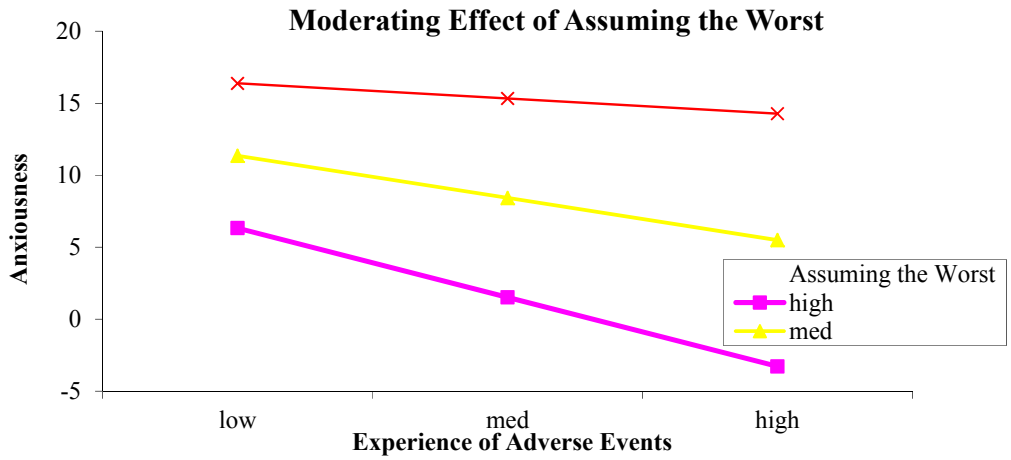

Figure 67. Moderating effect of blaming others in predicting anxiousness among adolescents

Table 33 displays results for moderating role of self-serving cognitive errors in relationship between experience of adverse life events and anxiousness among adolescents. Model 1 of the table highlights the moderation effect of self-centeredness. Values of interaction term suggest self-centeredness a significant moderator (B = -.003, t = -2.07, $p < .05$) with contributing 25% of variance ($R^2 = .25$, F (3, 659) = 92.86, $p < .001$) in anxiousness. A graphical presentation (Figure 65) illustrates these results and reveals that self-centeredness buffered the relationship between experience of adverse life events and anxiousness among adolescents. Slopes of the plot indicate that increase in the level of self-centeredness minimized the effect of adverse life experiences.

Moderation effect of blaming others is presented in model 2 of the table. Values reveal that blaming others significantly moderated (B = -.003, t = -3.42, $p < .01$) the relationship between experience of adverse life events and anxiousness along with accounting for 23% of variance ($R^2 = .23$, F (3, 659) = 86.78, $p < .001$) in anxiousness. Mod graph (Figure 66) further elaborates the findings by suggesting that blaming others weakened the effect of adverse life experiences on anxiousness. Sloped in the graph depict that as the level of blaming others raised, it alleviated the effect of adverse life experiences.

Model 3 shows results for moderating role of mislabeling. Values of interaction term suggest that mislabeling did account for significant moderation ($p > .05$) in the model. For assuming the worst, model 4 shows a significant interaction effect ($B = -.01$, $t = -5.29$, $p < .001$) along with contributing 19% of variance ($R^2 = .19$, $F (3, 659) = 65.92$, $p < .001$) in anxiousness. Making these findings more obvious, mod graph (Figure 67) shows that assuming the worst buffered the relationship between experience of adverse life events and anxiousness among adolescents. Slopes of the plot suggest that as the level of assuming the worst increased, it palliated the effect of adverse life experiences.

Table 34

Moderating effect of Self-Serving Cognitive Errors on Aggression among Adolescents (N = 663)

					Aggression	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		22.97	.20	113.56	.000	[22.58, 23.37]
EALE		.03	.004	6.67	.000	[.02, .04]
SC		.35	.04	9.57	.000	[.28, .42]
EALE × SC		.002	.001	2.01	.041	[.000, .003]
R^2	.23					
F	72.14				.000	
Constant		22.99	.20	113.05	.000	[22.59, 23.39]
EALE		.03	.005	7.69	.000	[.03, .04]
BO		.19	.02	7.82	.000	[.14, .24]
EALE × BO		.001	.001	2.33	.019	[.0002, .002]
R^2	.19					
F	48.72				.000	
Constant		22.97	.19	116.81	.000	[22.58, 23.36]
EALE		.03	.004	6.88	.000	[.02, .04]
ML		.53	.05	10.89	.000	[.44, .63]
EALE × ML		.003	.001	2.80	.005	[.001, .005]
R^2	.25					
F	105.16				.000	
Constant		23.15	.21	110.31	.000	[22.73, 23.56]
EALE		.03	.005	6.96	.000	[.02, .04]
AW		.40	.06	7.19	.000	[.29, .51]
EALE × AW		.003	.002	2.20	.027	[.0004, .006]
R^2	.19					
F	55.20				.000	

*$p>.05$= Non-significant, ***$p < .001$*

Note: EALE = Experience of Adverse Life Event, SC = Self-Centeredness, BO = Blaming Others, ML = Mislabeling, AW = Assuming the Worst

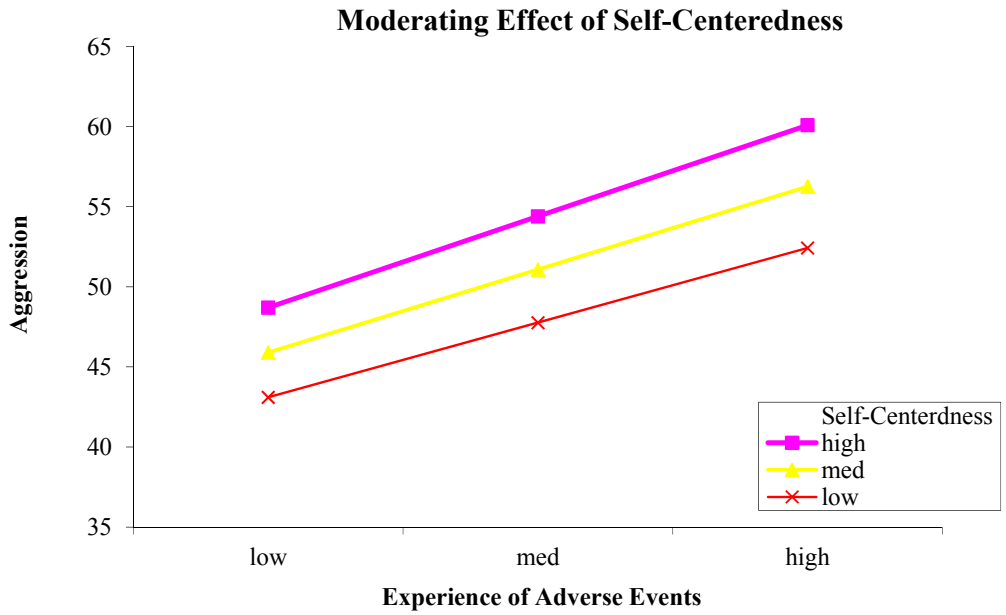

Figure 68. Moderating effect of self-centeredness in predicting aggression among adolescents

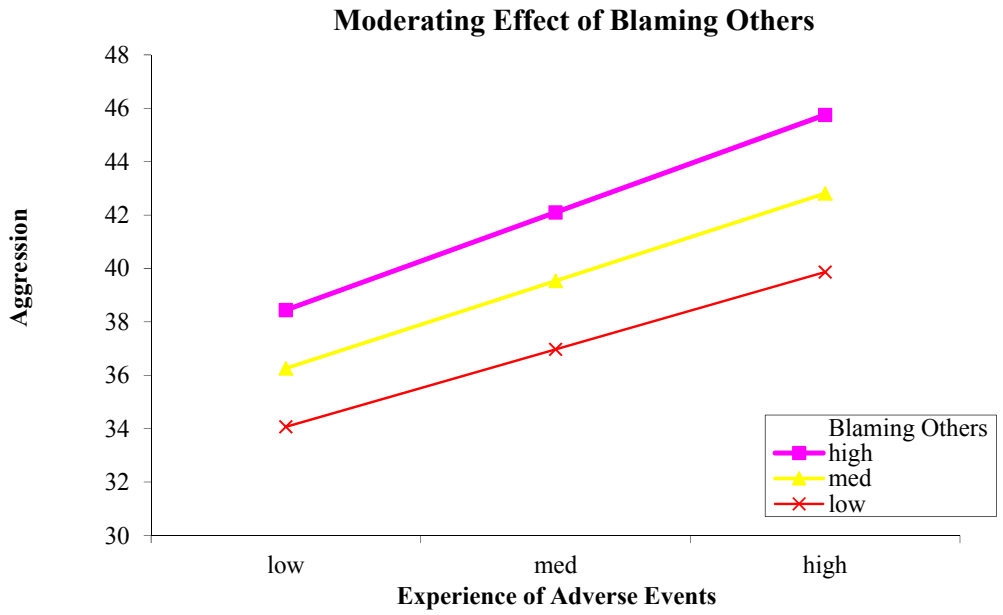

Figure 69. Moderating effect of blaming others in predicting aggression among adolescents

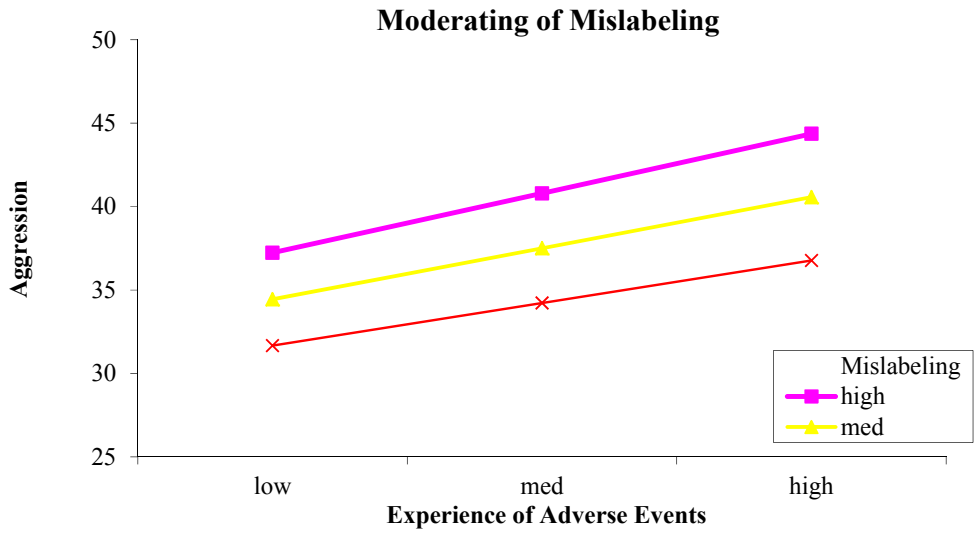

Figure 70. Moderating effect of mislabeling in predicting aggression among adolescents

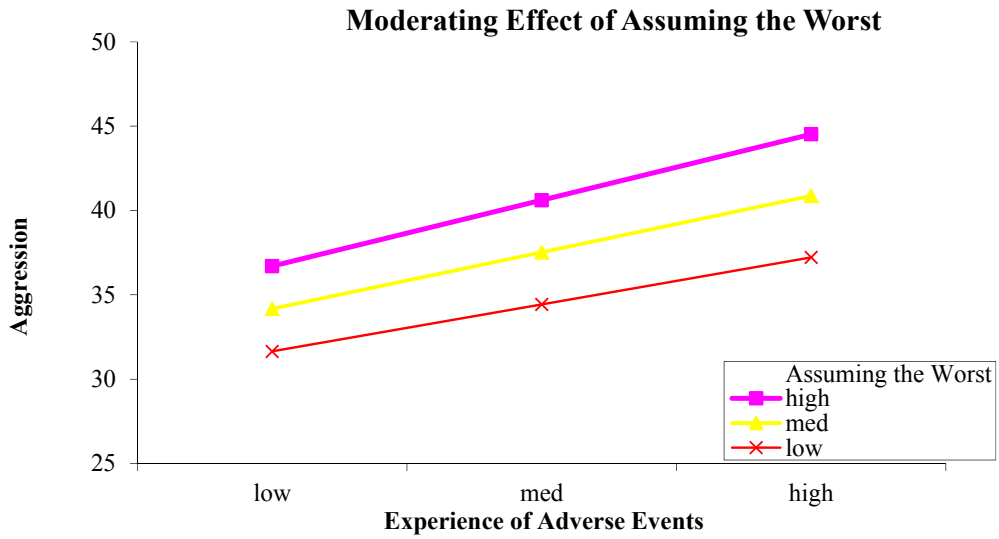

Figure 71. Moderating effect of assuming the worst in predicting aggression among adolescents

Table 34 presents results for moderating role of self-serving cognitive errors in relationship between experience of adverse life events and aggression among adolescents. Model 1 of the table shows moderation effect of self-centeredness. Values of interaction term indicate that self-centeredness significantly moderated ($B = .002$, $t = 2.01$, $p < .05$) the

relationship between experience of adverse life events and aggression among adolescents with explaining 23% of variance (R^2 = .23, F (3, 659) = 72.14, p < .001) in aggression. Mod graph (Figure 68) elaborates these results and suggests that self-centeredness boosted the relationship between experience of adverse life events and aggression. Slopes of the plot indicate that as the level of self-centeredness increased, it exacerbated the effect of adverse life experiences on aggressive behavior of adolescents.

Blaming others was another significant moderator (B = .001, t = 2.33, p < .05) with explaining 19% of collective variance (R^2 = .19, F (3, 659) = 48.72, p < .001) in aggressive behavior of adolescents. Making these findings more comprehensive, mod graph (Figure 69) suggests that blaming others boosted the relationship between experience of adverse life events and aggression. Slopes clearly show that impact of adverse life events got intensified with the increasing level of blaming others.

Mislabeling also served as a significant moderator (B = .003, t = 2.80, p < .01) along with contributing 25% of joint variance (R^2 = .25, F (3, 659) = 105.16, p < .001) in aggression. Extending these results, mod graph (Figure 70) reveals that mislabeling aggravated the effect of adverse life experience on aggressive behavior of adolescents.

Assuming the worst also showed significant moderation (B = .003, t = 2.20, p < .05) in the model along with accounting for 19% of joint variance (R^2 = .25, F (3, 659) = 105.16, p < .001) in aggression. Further illustrating the results mod graph (Figure 71) explains that assuming the worst strengthened the relationship between experience of adverse life events and aggression among adolescents. Slopes clearly depict that increasing the level of assuming the worst elevated the effect of adverse life experiences.

Table 35

Moderating effect of Self-Serving Cognitive Errors on Social Withdrawal among Adolescents (N = 663)

					Social Withdrawal	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		15.11	.20	74.98	.000	[14.72, 15.51]
EALE		.05	.04	12.02	.000	[.04, .06]
SC		-.21	.004	-5.51	.000	[-.29, -.14]
EALE × SC		-.002	.001	-2.90	.004	[-.004, -.001]
R^2	.17					
F	59.06				.000	
Constant		15.08	.20	74.07	.000	[14.68, 15.48]
EALE		.05	.004	11.36	.000	[.04, .05]
BO		-.13	.02	-5.31	.000	[-.17, -.08]
EALE × BO		-.002	.001	-3.85	.000	[-.003, -.001]
R^2	.16					
F	57.57				.000	
Constant		15.01	.22	69.48	.000	[14.58, 15.43]
EALE		.04	.004	9.09	.000	[.03, .05]
ML		.14	.05	2.73	.006	[.04, .25]
EALE × ML		-.001	.001	-.69	.491	[-.003, .001]
R^2	.11					
F	40.17				.000	
Constant		15.10	.20	73.96	.000	[14.70, 15.50]
EALE		.04	.004	10.84	.000	[.04, .05]
AW		-.19	.05	-3.93	.000	[-.28, -.09]
EALE × AW		-.005	.001	-4.79	.000	[-.007, -.003]
R^2	.15					
F	51.26				.000	

*p>.05= Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, SC = Self-Centeredness, BO = Blaming Others, ML = Mislabeling, AW = Assuming the Worst

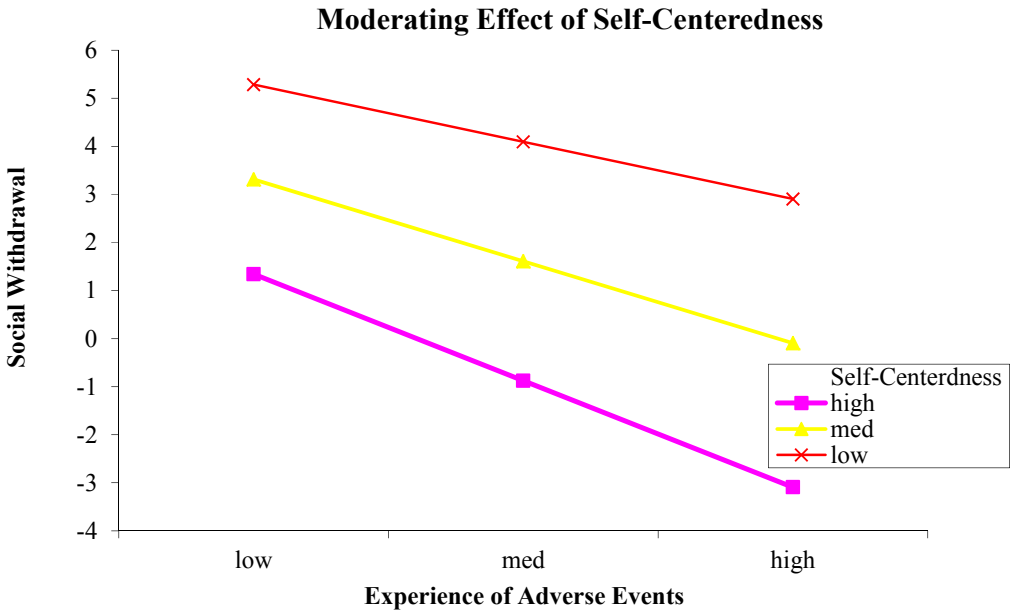

Figure 72. Moderating effect of self-centeredness in predicting social withdrawal among adolescents

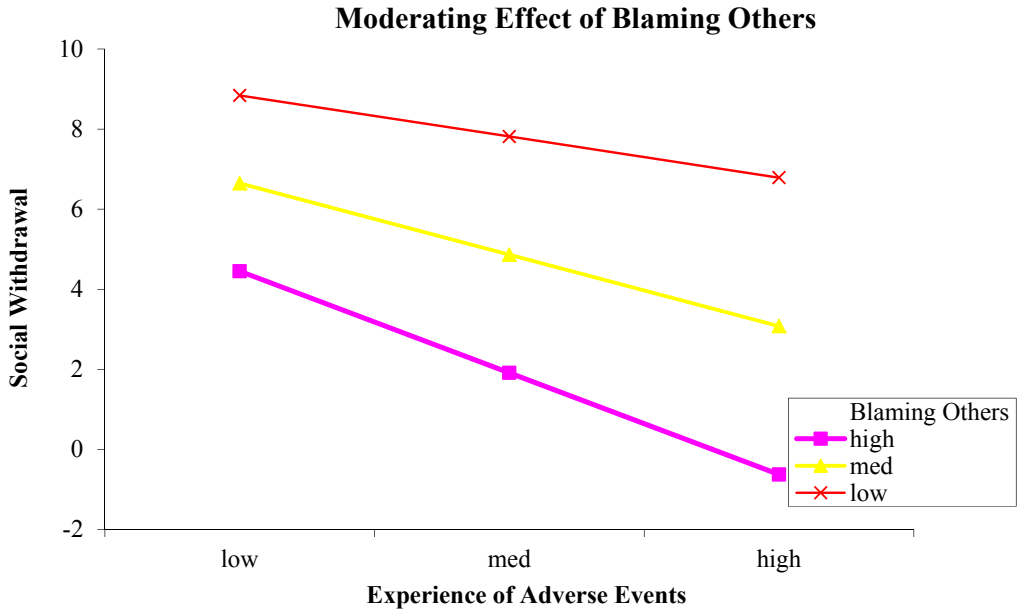

Figure 73. Moderating effect of blaming others in predicting social withdrawal among adolescents

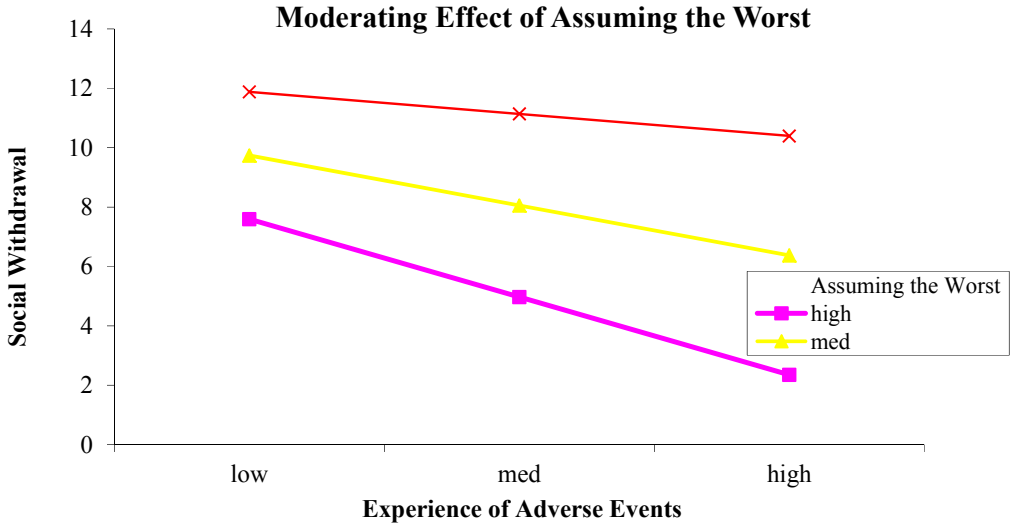

Figure 74. Moderating effect of assuming the worst in predicting social withdrawal among adolescents

Table 35 highlights the results for moderating role of self-serving cognitive errors in relationship between experience of adverse life events and social withdrawal among adolescents. Model 1 of the table shows moderating power of self-centeredness. Values of interaction term suggest self-centeredness a significant moderator (B = -.002, t = -2.90, $p < .01$) with accounting for 17% of variance ($R^2 = .17$, F (3, 659) = 59.06, $p < .001$) in social withdrawal. These results are further elaborated through mod graph (Figure 72) which reveals that self-centeredness weakened the relationship between experience of adverse life events and social withdrawal among adolescents. Slopes of the plot clearly indicate that as the level of self-centeredness increased, the impact of adverse life experiences got minimized.

Blaming others also served as a significant moderator (B = -.002, t = -3.58, $p < .001$) with explaining 16% of variance ($R^2 = .16$, F (3, 659) = 57.57, $p < .001$) in social

withdrawal. Mod graph (Figure 73) further elucidates this effect through slopes which depict that blaming others palliated the impact of adverse life experiences on social withdrawal behavior. As the level of social withdrawal increased, the impact of adverse life experiences decreased in intensity.

Model 3 of the table reveals that mislabeling did not explain significant moderation effect ($B = -.001$, $t = -.69$, $p > .05$) in the relationship between experience of adverse life events and social withdrawal among adolescents.

A significant interaction term ($B = -.005$, $t = -4.79$, $p < .001$) in model 4 of the table shows moderating power of assuming the worst and explains 15% of variance ($R^2 = .15$, $F(3, 659) = 51.26$, $p < .001$) in social withdrawal. Mod graph (Figure 74) makes these findings more evident by revealing that assuming the worst buffered the relationship between experience of adverse life events and social withdrawal. Slopes of the plot indicate that increase in the level of assuming the worst minimized the effect of adverse life experience.

Table 36

Moderating effect of Self-Serving Cognitive Errors on Somatic Complaints among Adolescents (N = 663)

					Somatic Complaints	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		7.79	.12	63.71	.000	[7.55, 8.03]
EALE		.03	.003	11.24	.000	[.03, .04]
SC		-.19	.02	-8.64	.000	[-.24, -.15]
EALE × SC		-.001	.001	-1.26	.207	[-.002, .0003]
R^2	.20					
F	67.27				.000	
Constant		7.78	.12	63.84	.000	[7.55, 8.02]
EALE		.03	.003	10.72	.000	[.02, .03]
BO		-.13	.01	-9.42	.000	[-.16, -.10]
EALE × BO		-.001	.0003	-2.12	.034	[-.001, .000]
R^2	.20					
F	68.36				.000	
Constant		7.73	.13	57.31	.000	[7.46, 7.99]
EALE		.02	.003	7.88	.000	[.02, .03]
ML		.06	.04	1.74	.082	[-.008, .13]
EALE × ML		.001	.001	.94	.348	[-.001, .002]
R^2	.09					
F	29.66				.000	
Constant		7.82	.13	61.72	.000	[7.57, 8.07]
EALE		.03	.003	9.55	.000	[.02, .03]
AW		-.17	.03	-5.67	.000	[-.22, -.11]
EALE × AW		-.003	.001	-4.23	.000	[-.004, -.001]
R^2	.16					
F	41.18				.000	

*p>.05= Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, SC = Self-Centeredness, BO = Blaming Others, ML = Mislabeling, AW = Assuming the Worst

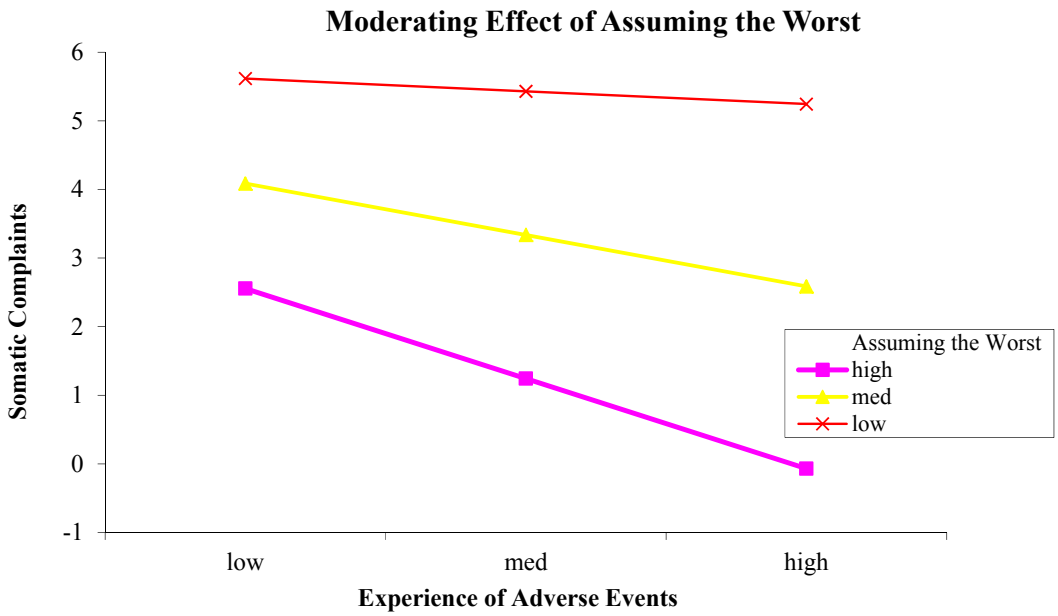

Figure 75. Moderating effect of assuming the worst in predicting somatic complaints among adolescents

Table 36 displays results for moderating role of self-serving cognitive errors in relationship between experience of adverse life events and somatic complaints among adolescents. Findings shows that all types of self-serving cognitive errors showed a non-significant moderation effect ($p > .05$) except assuming the worst. Model 4 of the table shows significant interaction effect ($B = -.003$, $t = -4.23$, $p < .001$) along with accounting for 16% of variance ($R^2 = .16$, $F (3, 659) = 41.18$, $p < .001$) in somatic complaints. Mod graph (Figure 75) further elaborates that assuming the worst buffered the effect of adverse life experiences on somatic complaints among adolescents.

Table 37

Moderating effect of Self-Serving Cognitive Errors on Academic Problems among Adolescents (N = 663)

					Academic Problems	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		17.64	.29	58.87	.000	[17.05, 18.23]
EALE		.06	.006	9.10	.000	[.04, .07]
SC		-.09	.06	-1.59	.112	[-.21, .02]
EALE × SC		-.001	.001	-.004	.352	[-.004, .001]
R^2	.09					
F	28.40				.000	
Constant		17.60	.29	59.09	.000	[17.02, 18.19]
EALE		.05	.01	8.84	.000	[.04, .07]
BO		-.05	.04	-1.15	.249	[-.13, .03]
EALE × BO		-.001	.001	-.59	.549	[-.002, .001]
R^2	.09					
F	28.99				.000	
Constant		17.63	.30	58.56	.000	[17.04, 18.22]
EALE		.04	.006	7.24	.000	[.03, .06]
ML		.53	.09	5.91	.000	[.35, .70]
EALE × ML		-.002	.02	-.98	.327	[-.005, .002]
R^2	.14					
F	45.51				.000	
Constant		17.68	.29	59.87	.000	[17.09, 18.26]
EALE		.05	.006	8.50	.893	[.04, .06]
AW		.01	.08	.13	.000	[-.15, .17]
EALE × AW		.004	.002	2.13	.000	[-.008, -.0003]
R^2	.09					
F	34.55				.000	

p>.05= Non-significant, ***$p < .001$

Note: EALE = Experience of Adverse Life Event, SC = Self-Centeredness, BO = Blaming Others, ML = Mislabeling, AW = Assuming the Worst

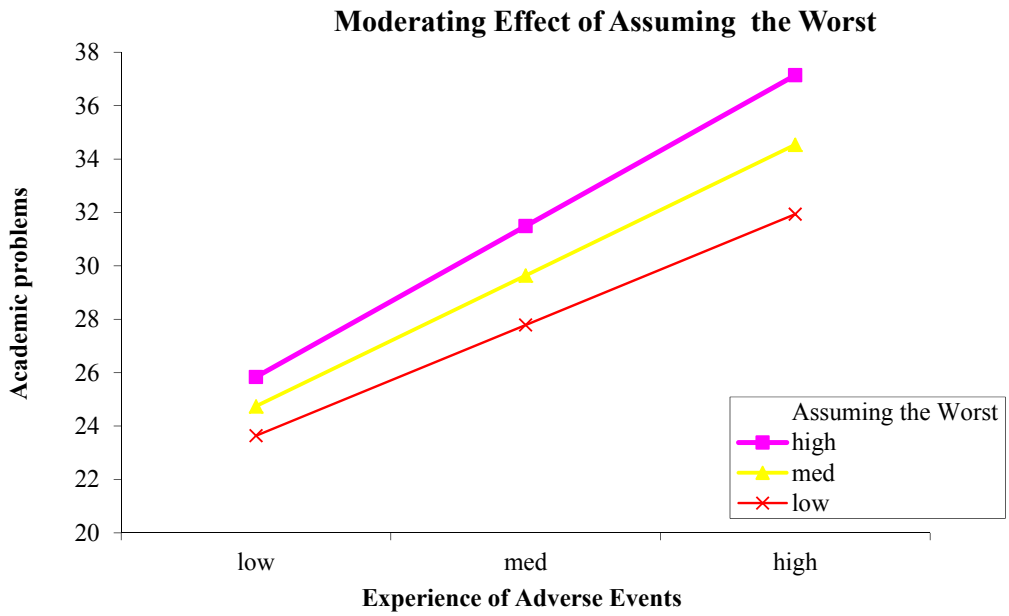

Figure 76. Moderating effect of assuming the worst in predicting academic problems among adolescents

Table 37 highlights results for moderating role of self-serving cognitive errors in relationship between experience of adverse life events and academic problems among adolescents. Findings reveal that none of the self-serving cognitive errors explained significant moderation in the model except assuming the worst. Model 4 of the table suggest assuming the worst a significant moderator (B = .004, t = 2.13, $p < .001$) along with contributing 9% of variance ($R^2 = .09$, F (3, 659) = 34.55, $p < .001$) in academic problems. Mod graph (Figure 76) further illustrates that assuming the worst exacerbated the effect of adverse life experiences on academic problems among adolescents.

Table 38

Moderating effect of Self-Serving Cognitive Errors on Feelings of Rejection among Adolescents (N = 663)

					Feelings of Rejection	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		9.56	.17	54.48	.000	[9.22, 9.90]
EALE		.04	.004	11.42	.000	[.03, .04]
SC		-.23	.03	-6.62	.000	[-.30, -.16]
EALE × SC		-.001	.001	-1.07	.282	[-.002, .001]
R^2	.17					
F	56.49				.000	
Constant		9.55	.17	54.63	.000	[9.21, 9.89]
EALE		.04	.004	10.45	.000	[.03, .04]
BO		-.14	.02	-6.16	.000	[-.18, -.09]
EALE × BO		-.0007	.0005	-1.38	.167	[-.002, .0003]
R^2	.15					
F	49.74				.000	
Constant		9.50	.18	50.81	.000	[9.14, 9.87]
EALE		.03	.004	8.41	.000	[.03, .04]
ML		.07	.05	1.38	.168	[-.03, .17]
EALE × ML		.0004	.001	.30	.762	[-.002, .002]
R^2	.09					
F	28.02				.000	
Constant		9.57	.18	53.68	.000	[9.21, 9.92]
EALE		.04	.004	9.51	.000	[.03, .04]
AW		-.16	.04	-3.71	.000	[-25, -.07]
EALE × AW		-.002	.001	-1.98	.047	[-.004, .000]
R^2	.12					
F	36.13				.000	

*p>.05= Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, SC = Self-Centeredness, BO = Blaming Others, ML = Mislabeling, AW = Assuming the Worst

Table 38 shows results for moderating role of self-serving cognitive errors and values indicate that none of the self-serving cognitive errors accounted for significant moderation in the association of adverse life experiences and feelings of rejection.

Table 39

Moderating effect of Personality Traits on Anxiousness among Adolescents (N = 663)

					Anxiousness	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		24.77	.39	63.26	.000	[24.004, 25.54]
EALE		.04	.008	5.27	.000	[.03, .06]
NEU		.46	.04	11.15	.000	[.38, .54]
EALE × NEU		.006	.001	6.07	.000	[.004, .007]
R^2	.28					
F	92.75				.000	
Constant		24.37	.38	63.69	.000	[23.62, 25.12]
EALE		.04	.01	4.55	.000	[.02, .05]
EXT		-.56	.04	-15.34	.000	[-.63, -.49]
EALE × EXT		-.003	.001	-3.97	.000	[-.005, -.002]
R^2	.34					
F	159.92				.000	
Constant		27.52	.57	48.52	.000	[26.40, 28.63]
EALE		.09	.01	7.17	.000	[.07, .13]
OPEN		-.47	.06	-8.53	.000	[-.58, -.36]
EALE × OPEN		-.004	.001	-3.58	.000	[-.006, -.002]
R^2	.39					
F	210.26				.000	
Constant		27.41	.54	50.57	.000	[26.35, 28.48]
EALE		.13	.01	11.57	.000	[.11, .16]
AGRE		-.30	.06	-5.13	.000	[-.42, -.19]
EALE × AGRE		-.004	.001	-3.08	.002	[-.007, -.002]
R^2	.34					
F	129.92				.000	
Constant		27.02	.57	47.76	.000	[25.91, 28.13]
EALE		.11	.01	8.54	.000	[.08, .13]
CONS		-.41	.05	-7.94	.000	[-.51, -.31]
EALE × CONS		-.002	.001	-1.90	.058	[-.0001, .004]
R^2	.37					
F	178.95				.000	

*p>.05= Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, NEU = Neuroticism, EXT = Extraversion, OPEN = Openness, AGRE = Agreeableness, CONS = Conscientiousness

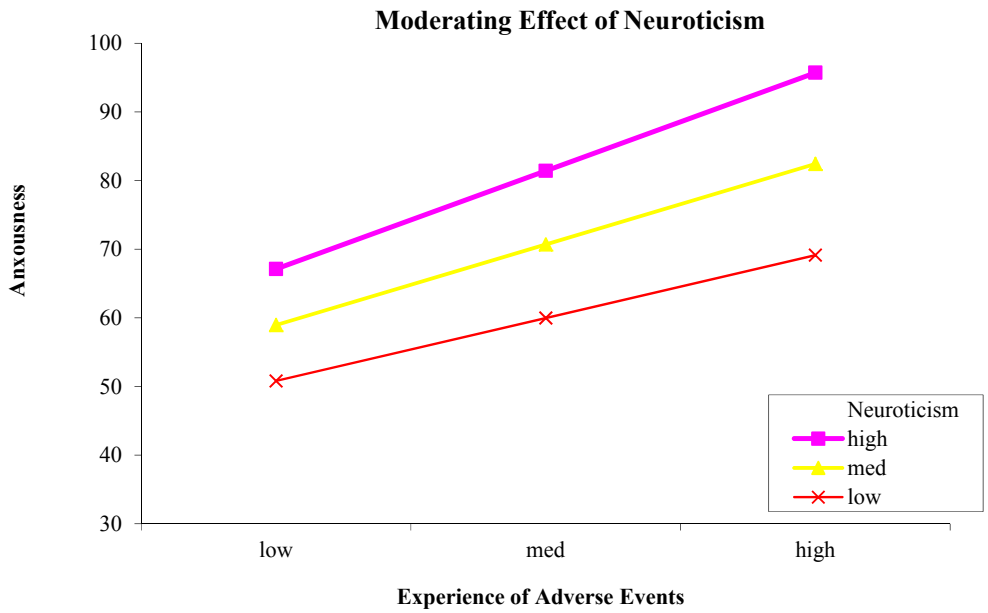

Figure 77. Moderating effect of neuroticism in predicting anxiousness among adolescents

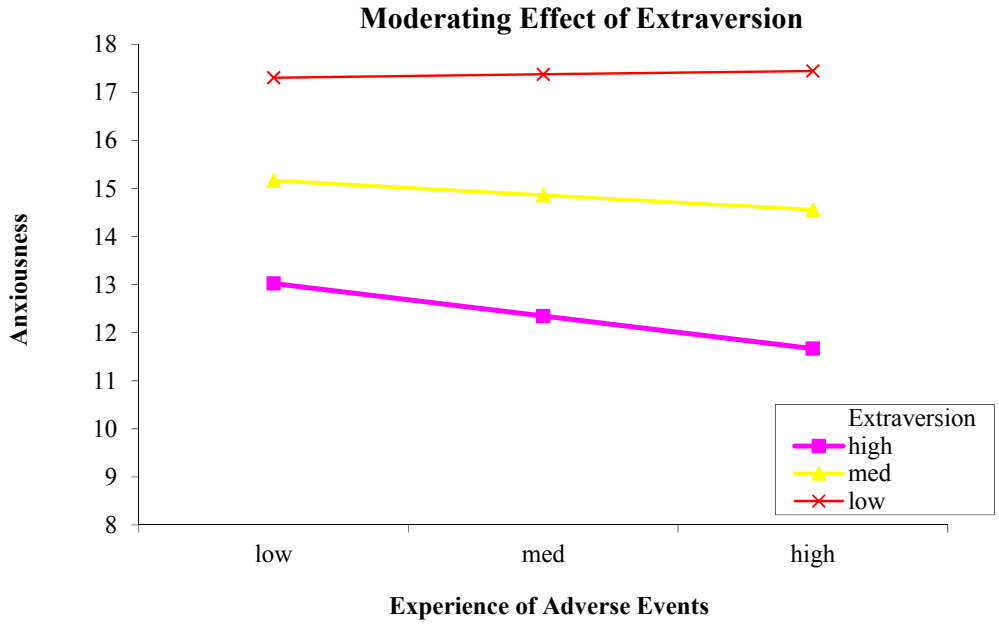

Figure 78. Moderating effect of extraversion in predicting anxiousness among adolescents

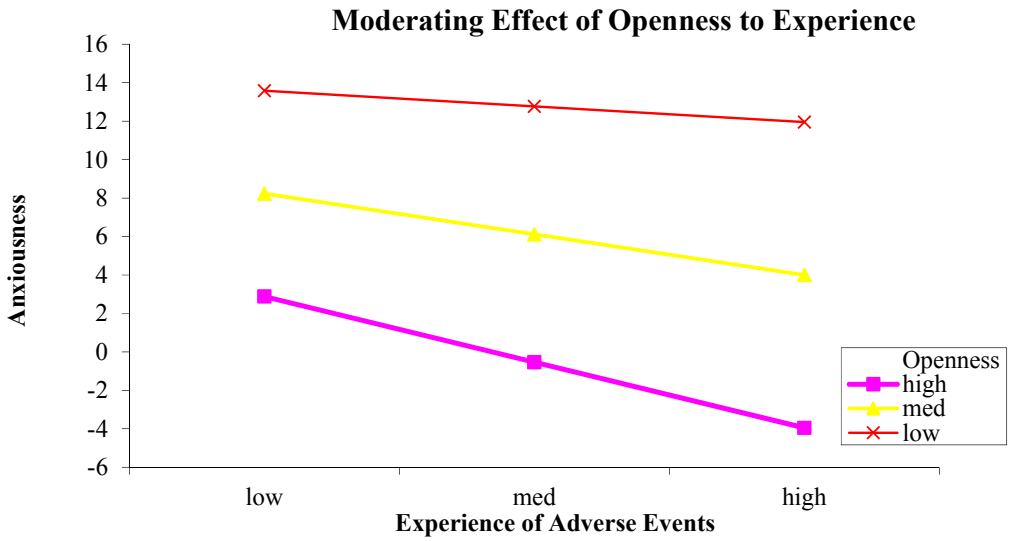

Figure 79. Moderating effect of Openness to experience in predicting anxiousness among adolescents

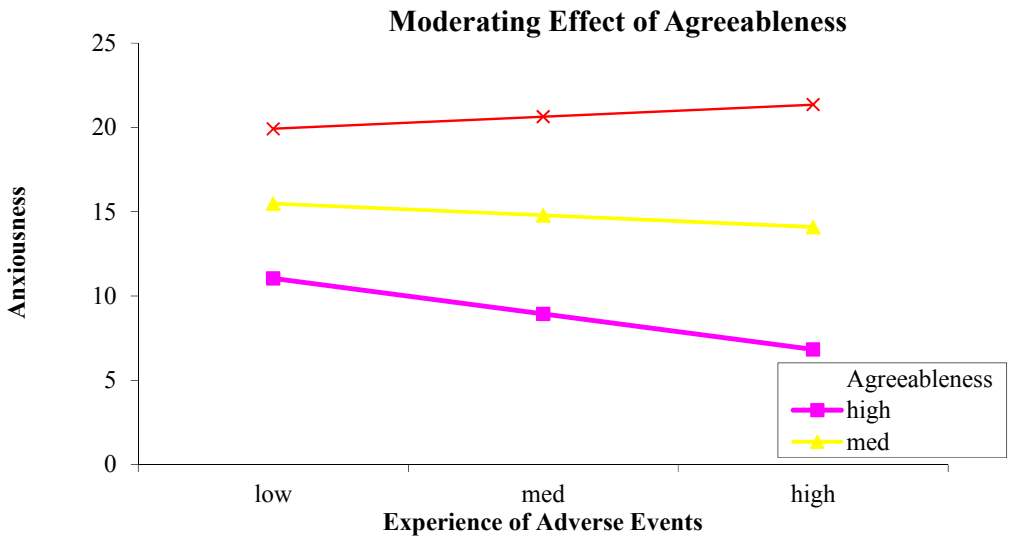

Figure 80. Moderating effect of agreeableness in predicting anxiousness among adolescents

Table 39 shows results for moderating role of personality traits in relationship between experience of adverse life events and anxiousness among adolescents. Model 1 of the table highlights the moderation effect of neuroticism. Significant interaction term between neuroticism and experience of adverse life events (B = .006, t = 6.07, p < .001)

reveals neuroticism as a significant moderator with explaining 28% of variance ($R^2 = .28$, $F (3, 659) = 92.75$, $p < .001$) in anxiousness. Mod graph (Figure 77) further elaborates this effect by suggesting that neuroticism boosted the relationship between experience of adverse life events and anxiousness among adolescents. Slopes indicate that increase in the level of neuroticism elevated the effect of adverse life experience.

Extraversion also significantly moderated ($B = -.003$, $t = -3.97$, $p < .001$) the effect of adverse life experiences along with contributing 34% of variance ($R^2 = .34$, $F (3, 659) = 159.92$, $p < .001$) in anxiousness. Making this effect evident, interaction plot (Figure 78) indicates that extraversion buffered the effect of adverse life experiences on anxiousness. Slopes depict that high and medium levels of extraversion alleviated the effect of adverse life events whereas low level of extraversion did not account for any significant change in the model.

For openness, interaction term shows significant moderating effect ($B = -.004$, $t = -3.58$, $p < .001$) along with producing 39% of variance ($R^2 = .39$, $F (3, 659) = 210.26$, $p < .001$) in anxiousness. Mod graph (Figure 79) elucidates these results by suggesting that openness attenuated the relationship between experience of adverse life events and anxiousness among adolescents. Slopes of the graph depict that as the level of openness increased the effect of adverse life experiences faded.

Agreeableness also served as a significant moderated ($B = -.004$, $t = -3.08$, $p < .01$) and collectively, with experience of adverse events, explained 34% variance ($R^2 = .34$, $F (3, 659) = 129.92$, $p < .001$) in anxiousness. Mod graph (Figure 80) further illustrates these findings and suggests that agreeableness weakened the relationship between experience of adverse life events and anxiousness among adolescents. Slopes of the graph depict that high level of agreeableness attenuated the effect of adverse life experiences on anxiousness

whereas the low level of the trait boosted this effect. However no significant change was observed when agreeableness was at medium level.

Model 5 of the table shows moderating effect of conscientiousness. Interaction term suggests that conscientiousness did not account for significant moderation ($p > .05$) in the relationship between experience of adverse life events and anxiousness among adolescents.

Table 40

Moderating effect of Personality Traits on Aggression among Adolescents (N = 663)

					Aggression	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		23.42	.23	100.39	.000	[22.96, 23.88]
EALE		.05	.005	9.06	.000	[.04, .06]
NEU		.09	.03	3.36	.000	[04, .14]
EALE × NEU		.002	.001	3.28	.001	[.001, .004]
R^2	.14					
F	27.83				.000	
Constant		23.32	.23	100.51	.000	[22.86, 23.78]
EALE		.04	.005	7.97	.000	[.03, .05]
EXT		-.03	.02	-1.08	.279	[-.02, .07]
EALE × EXT		-.002	.001	-3.15	.000	[-.003, -.001]
R^2	.11					
F	24.15				.000	
Constant		24.84	.24	104.04	.000	[24.37, 25.31]
EALE		.03	.006	5.43	.000	[.02, .04]
OPEN		-.25	.03	-9.31	.000	[-.31, -.20]
EALE × OPEN		-.003	.0005	-5.65	.000	[-.004, -.002]
R^2	.35					
F	103.86				.000	
Constant		24.60	.23	105.14	.000	[24.14, 25.06]
EALE		.06	.005	11.69	.000	[.05, .07]
AGRE		-.09	.03	-3.44	.000	[-.15, -.04]
EALE × AGRE		-.003	.001	-4.05	.000	[-.004, -.001]
R^2	.25					
F	78.67				.000	
Constant		24.72	.25	99.15	.000	[24.23, 25.21]
EALE		.04	.006	7.27	.000	[.03, .06]
CONS		-.19	.03	-.7.23	.000	[-.24, -.14]
EALE × CONS		-.003	.001	-4.81	.000	[-.004, -.002]
R^2	.32					
F	93.36				.000	

*p>.05= Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, NEU = Neuroticism, EXT = Extraversion, OPEN = Openness, AGRE = Agreeableness, CONS = Conscientiousness

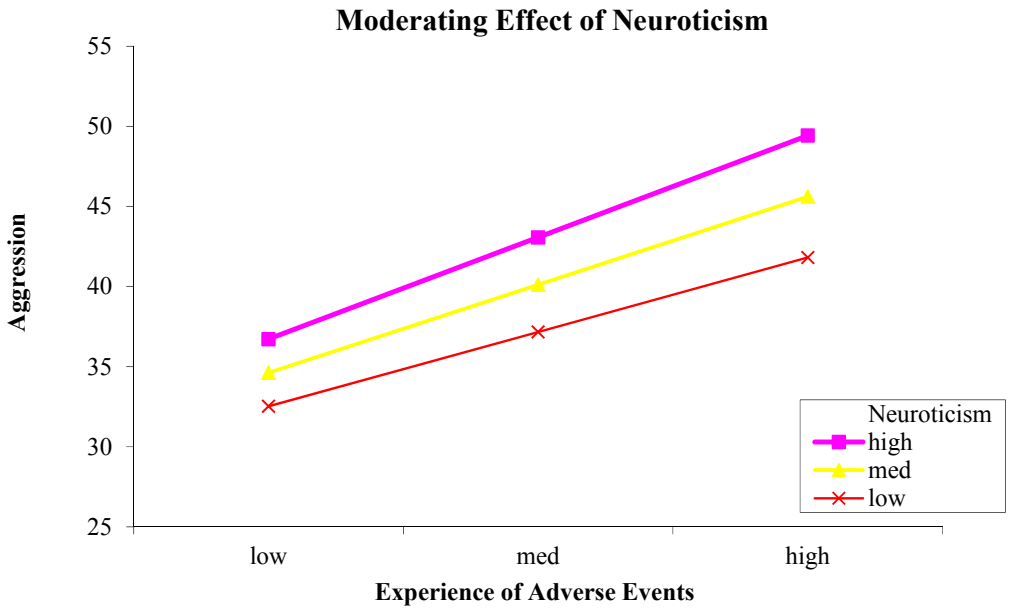

Figure 81. Moderating effect of neuroticism in predicting aggression among adolescents

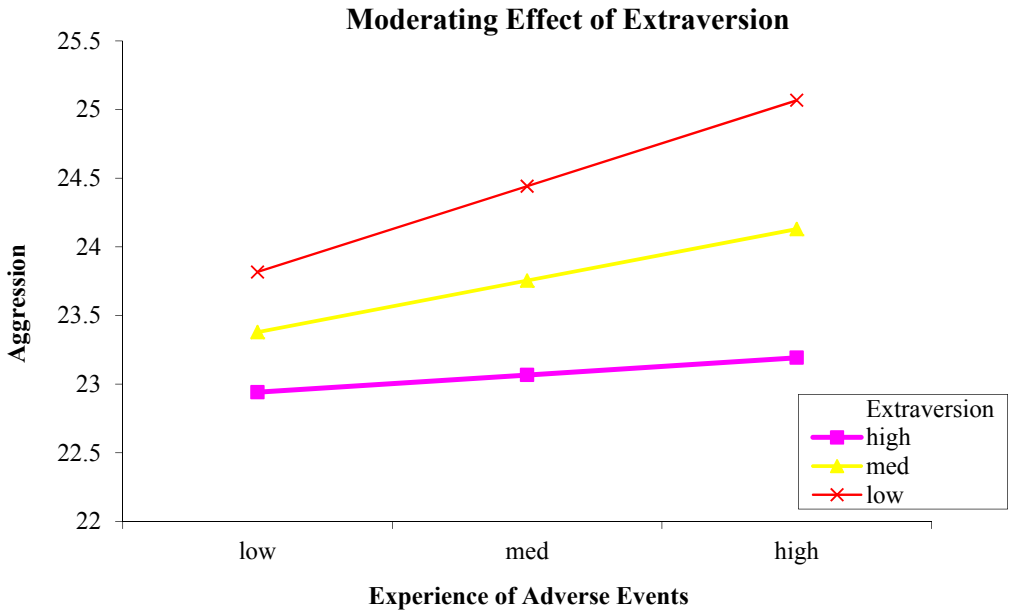

Figure 82. Moderating effect of extraversion in predicting aggression among adolescents

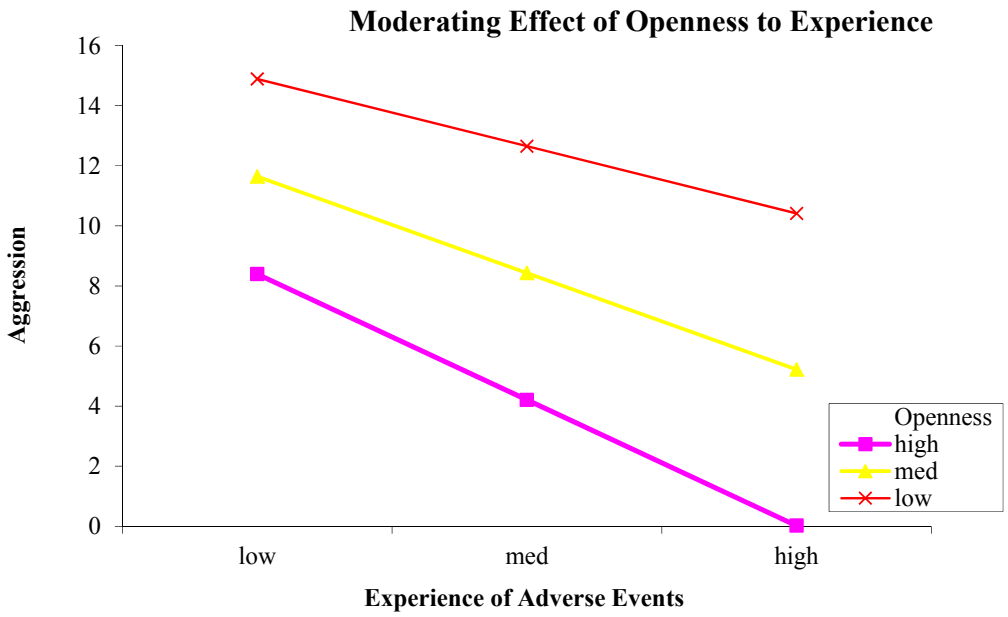

Figure 83. Moderating effect of openness to experience in predicting aggression among adolescents

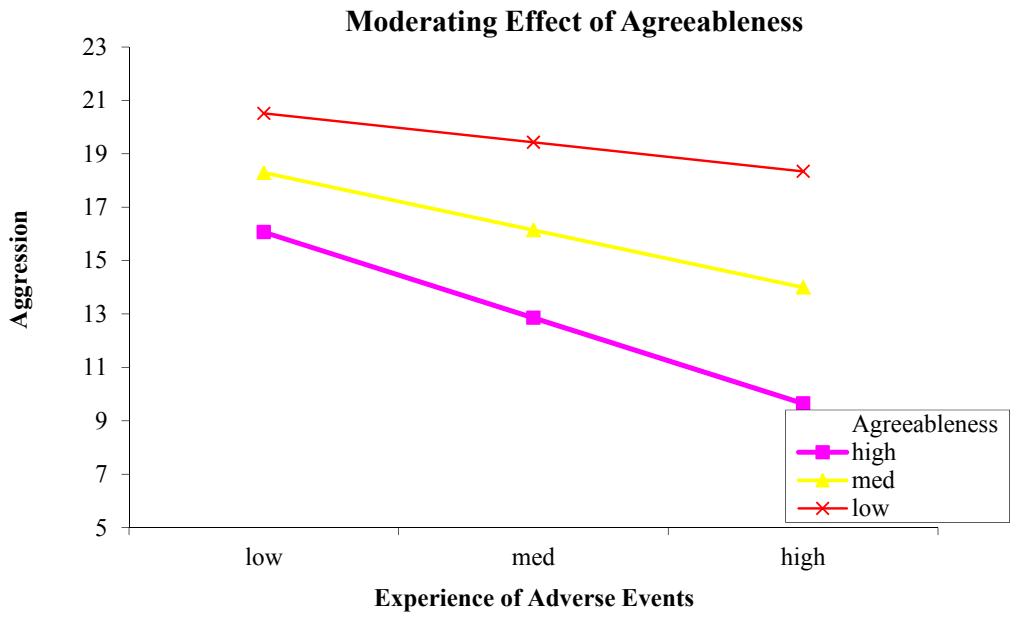

Figure 84. Moderating effect of agreeableness in predicting aggression among adolescents

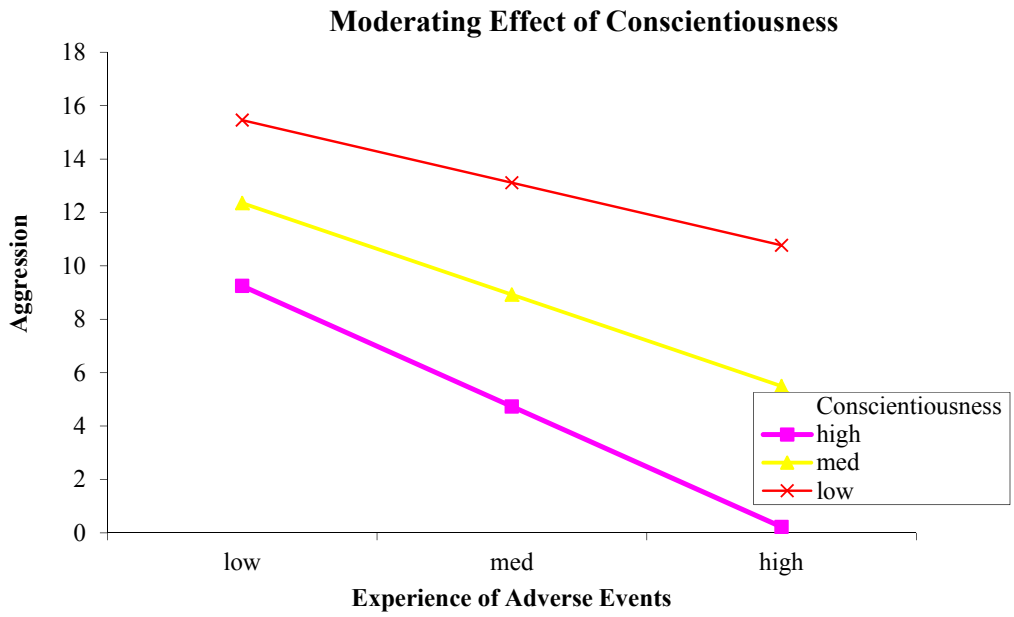

Figure 85. Moderating effect of conscientiousness in predicting aggression among adolescents

Table 40 displays results for moderating role of personality traits in relationship between experience of adverse life events and aggression among adolescents. Model 1 of the table shows moderating effect of neuroticism. Values of interaction term indicate that neuroticism significantly moderated (B = .002, t = 3.28, p < .01) the effect of adverse life experiences along with contributing 14% of (R^2 = .14, F (3, 659) = 27.83, p < .001) variance in aggressive behavior of adolescents. Mod graph (Figure 81) elaborates these findings by suggesting that neuroticism boosted the relationship between experience of adverse life events and aggression among adolescents. Slopes of the graph indicate that as the level of neuroticism increased the effect of adverse life experiences also escalated.

Model 2 of the table depicts extraversion as a significant moderator (B = -.002, t = -3.15, p < .001) and the values suggest that extraversion and experience of adverse life events collectively explained 11% of variance (R^2 = .11, F (3, 659) = 24.15, p < .001) in aggression. Mod graph (Figure 82) further illustrates this effect by suggesting at high,

medium and low levels of extraversion. Slopes indicate that when extraversion was at medium or low level, it escalated the effect of adverse life experiences on aggression. However when extraversion was high, it did not contributed a significant effect in the model.

Values of model 3 in the tables reveal that openness also significantly moderated (B = -.003, t = -5.65, $p < .001$) the effect of adverse life experiences with explaining 35% of variance ($R^2 = .35$, F (3, 659) = 103.86, $p < .001$) in aggression. Mod graph (Figure 83) explicates these results by showing that openness buffered the relationship between experiences of adverse life events and aggression among adolescents. Slopes indicate that as the level of openness increased it alleviated the impact of adverse life events.

For agreeableness, interaction term suggested a significant moderation effect (B = -.003, t = -4.05, $p < .001$) along with contributing 25% of variance ($R^2 = .25$, F (3, 659) = 78.67, $p < .001$) in adolescents' aggressive behavior. Further elaborating the findings, mod graph (Figure 84) depicts that agreeableness buffered the relationship between experience of adverse life events and aggression. Slopes indicate that increase in the level of agreeableness attenuated the effect of adverse life experiences on aggression.

Conscientiousness, as depicted in model 5 of the table, also showed a significant moderation (B = -.003, t = -4.81, $p < .001$). Values show that conscientiousness and experience of adverse life events collectively produced 32% of variance ($R^2 = .32$, F (3, 659) = 93.36, $p < .001$) in aggression. Mod graph (Figure 85) illustrates these findings and shows that agreeableness buffered the effect of adverse life experiences on aggressive behavior of adolescents. Slopes indicate that increase in conscientiousness decreases the effect of adverse life experiences.

Table 41

Moderating effect of Personality Traits on Social Withdrawal among Adolescents (N = 663)

					Social Withdrawal	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		15.49	.20	76.05	.000	[15.09, 15.89]
EALE		.02	.004	5.82	.000	[.02, .03]
NEU		.23	.02	10.84	.000	[.19, .27]
EALE × NEU		.003	.0004	7.30	.000	[.002, .004]
R^2	.27					
F	95.42				.000	
Constant		15.26	.21	74.18	.000	[14.86, 15.67]
EALE		.02	.004	5.20	.000	[.01, .03]
EXT		-.26	.02	-12.02	.000	[-.30, -.22]
EALE × EXT		-.002	.0004	-4.05	.000	[-.003, -.001]
R^2	.29					
F	108.75				.000	
Constant		18.76	.29	62.85	.000	[18.17, 19.34]
EALE		.04	.007	6.58	.000	[.03, .06]
OPEN		-.23	.03	-8.12	.000	[-.29, -.17]
EALE × OPEN		-.004	.0005	-7.28	.000	[-.005, -.003]
R^2	.32					
F	146.31				.000	
Constant		18.57	.29	63.79	.000	[17.99, 19.14]
EALE		.07	.006	11.73	.017	[.06, .08]
AGRE		-.08	.03	-2.39	.000	[-..14, -.01]
EALE × AGRE		-.004	.001	-5.59	.000	[-.006, -.003]
R^2	.25					
F	94.64				.000	
Constant		18.60	.31	59.51	.000	[17.98, 19.21]
EALE		.06	.007	8.81	.000	[.05, .07]
CONS		-.14	.03	-.4.83	.000	[-.20, -.08]
EALE × CONS		-.003	.001	-5.70	.000	[-.005, -.002]
R^2	.28					
F	114.44				.000	

*p>.05= Non-significant, ***p* < .001

Note: EALE = Experience of Stressful Life Event, NEU = Neuroticism, EXT = Extraversion, OPEN = Openness, AGRE = Agreeableness, CONS = Conscientiousness

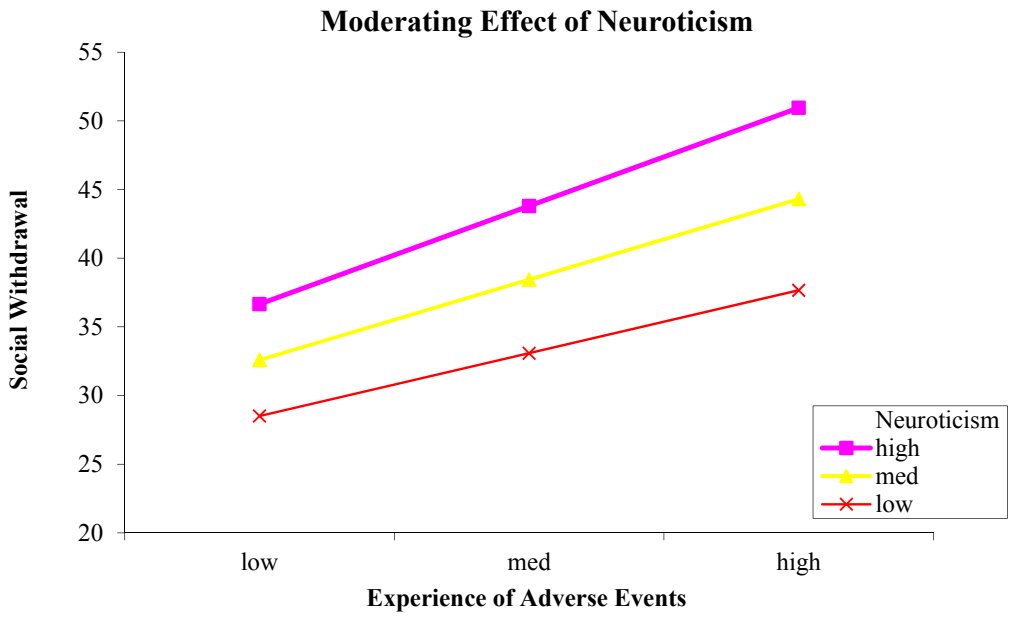

Figure 86. Moderating effect of neuroticism in predicting social withdrawal among adolescents

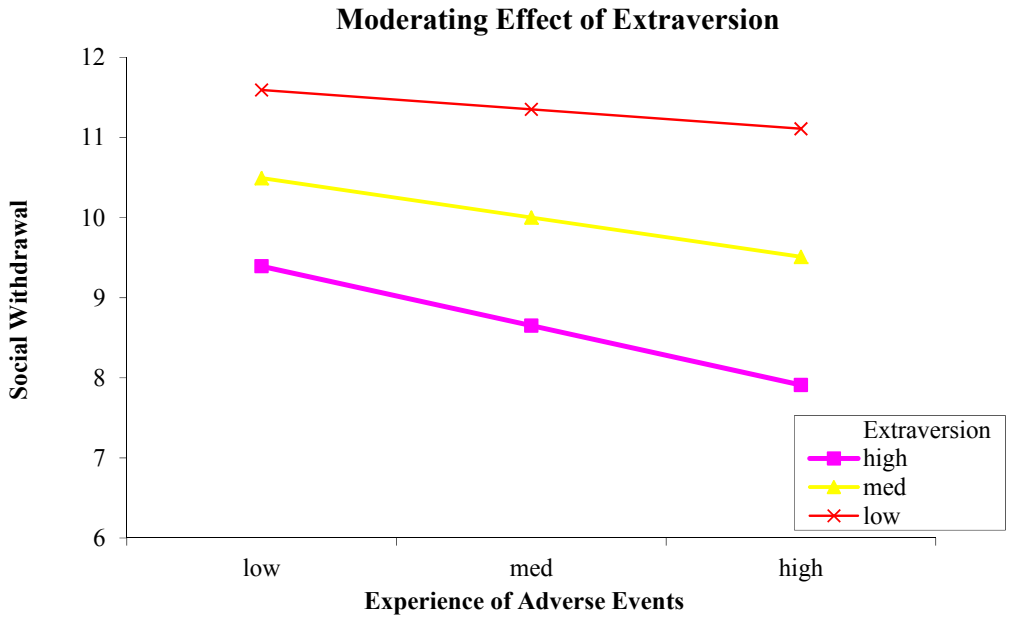

Figure 87. Moderating effect of extraversion in predicting social withdrawal among adolescents

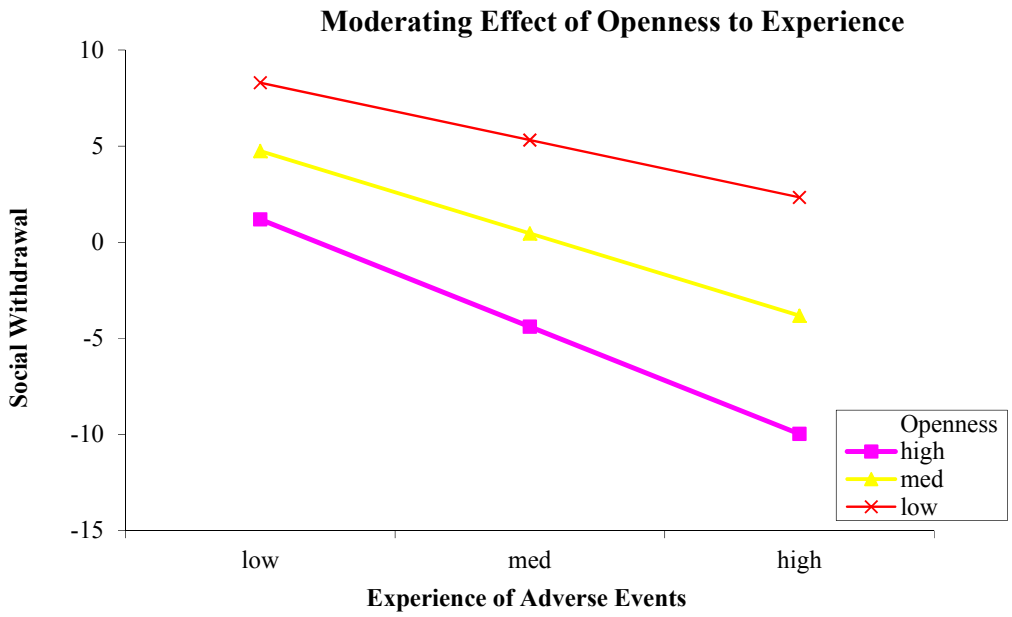

Figure 88. Moderating effect of openness to experience in predicting social withdrawal among adolescents

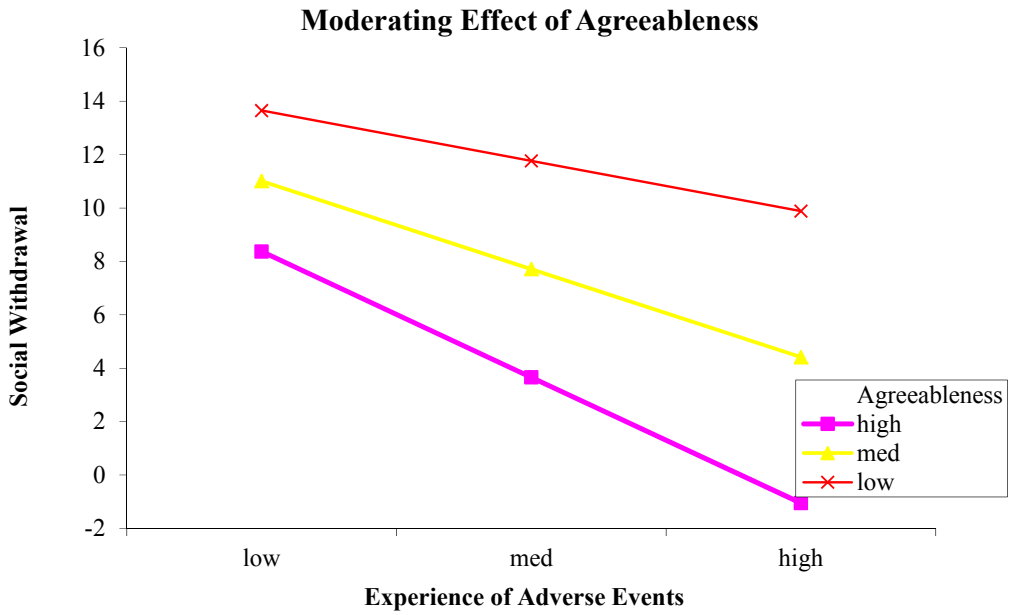

Figure 89. Moderating effect of agreeableness in predicting social withdrawal among adolescents

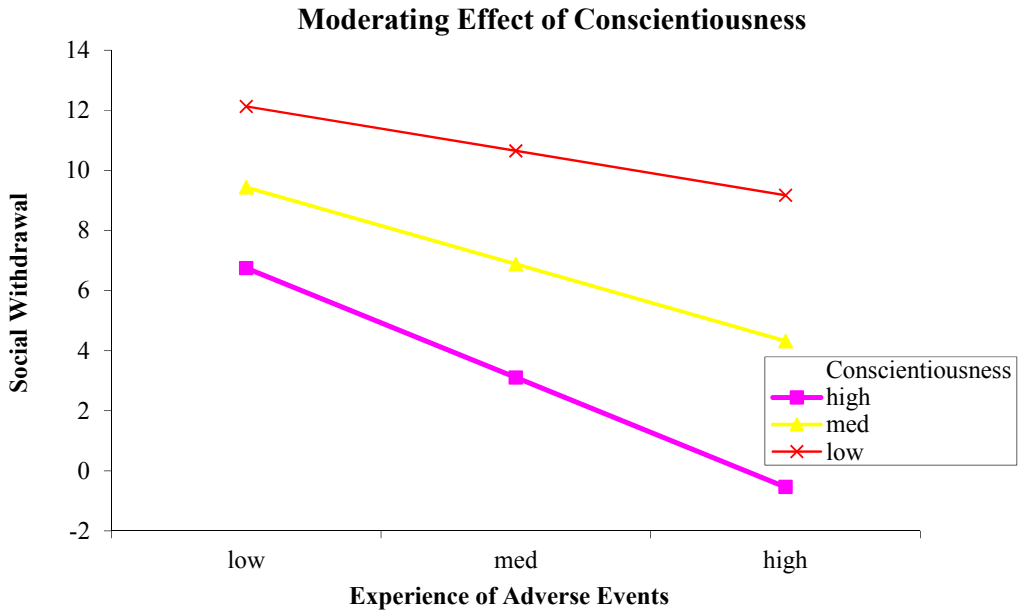

Figure 90. Moderating effect of conscientiousness in predicting social withdrawal among adolescents

Table 41 shows results for moderating role of personality traits in relationship between experience of adverse life events and social withdrawal among adolescents. Model 1 of the table highlights the moderation effect of neuroticism. Significant interaction term between neuroticism and experience of adverse life events (B = .003, t = 7.30, p < .001) reveals neuroticism as a significant moderator with explaining 27% of variance (R^2 = .27, F (3, 659) = 95.42, p < .001) in social withdrawal. Mod graph (Figure 86) further elaborates this effect by suggesting that neuroticism boosted the relationship between experience of adverse life events and social withdrawal among adolescents. Slopes indicate that increase in the level of neuroticism elevated the effect of adverse life experience.

Model 2 of the table depicts extraversion as a significant moderator (B = -.002, t = -4.05, p < .001) and the values suggest that extraversion and experience of adverse life events collectively explained 29% of variance (R^2 = .29, F (3, 659) = 108.75, p < .001) in social withdrawal. Mod graph (Figure 87) further illustrates this effect by suggesting at

high, medium and low levels of extraversion. Slopes indicate that increase in the level of extraversion weakened the effect of adverse life experiences.

For openness, interaction term shows significant moderating effect (B = -.004, t = -7.28, p < .001) along with producing 32% of variance (R^2 = .32, F (3, 659) = 146.31, p < .001) in social withdrawal. Mod graph (Figure 88) elucidates these results by suggesting that openness buffered the relationship between experience of adverse life events and social withdrawal among adolescents. Slopes of the graph depict that as the level of openness increased the effect of adverse life experiences faded.

For agreeableness, interaction term suggested a significant moderation effect (B = -.004, t = -5.59, p < .001) along with contributing 25% of variance (R^2 = .25, F (3, 659) = 94.64, p < .001) in social withdrawal. Further elaborating the findings, mod graph (Figure 89) depicts that agreeableness buffered the relationship between experience of adverse life events and social withdrawal. Slopes indicate that increase in the level of agreeableness attenuated the effect of adverse life experiences on social withdrawal.

Interaction term in model 5 depict that conscientiousness also showed significant moderation effect (B = -.003, t = -5.70, p < .001) on the impact of adverse life experiences with explaining 28% variance (R^2 = .28, F (3, 659) = 114.44, p < .001) in social withdrawal. Making these findings more obvious, mod graph depicts (Figure 90) that conscientiousness buffered the relationship between experience of adverse life events and social withdrawal. Slopes indicate that as the level of conscientiousness increased it alleviated the effect of adverse life experiences.

Table 42

Moderating effect of Personality Traits on Somatic Complaints among Adolescents (N = 663)

					Somatic Complaints	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		8.05	.13	63.14	.000	[7.79, 8.29]
EALE		.01	.003	4.91	.000	[.008, .02]
NEU		.13	.01	10.24	.000	[.10, .15]
EALE × NEU		.002	.0003	6.25	.000	[.001, .002]
R^2	.24					
F	77.84				.000	
Constant		7.88	.13	62.67	.000	[7.64, 8.13]
EALE		.01	.003	3.98	.000	[.006, .02]
EXT		-.17	.01	-.14.24	.000	[-.19, -.14]
EALE × EXT		-.001	.0003	-3.31	.001	[-.001, -.0004]
R^2	.28					
F	123.88				.000	
Constant		8.29	.18	46.86	.000	[7.95, 8.64]
EALE		.003	.004	.70	.000	[-.006, .01]
OPEN		-.09	.02	-4.54	.484	[-.12, -.05]
EALE × OPEN		-.001	.0004	-2.27	.023	[-.002, -.0001]
R^2	.07					
F	21.80				.000	
Constant		8.22	.16	50.66	.000	[7.90, 8.54]
EALE		.01	.004	3.40	.000	[.006, .02]
AGRE		-.02	.02	-.98	.328	[-.06, .02]
EALE × AGRE		-.001	.0004	-1.91	.057	[-.002, -.000]
R^2	.04					
F	9.55				.000	
Constant		8.12	.18	44.58	.000	[7.76, 8.45]
EALE		.008	.005	1.76	.000	[-.001, .02]
CONS		-.05	.02	-2.76	.079	[-.09, -.02]
EALE × CONS		-.0003	.0004	-.69	.487	[-.001, .001]
R^2	.05					
F	11.58				.000	

p>.05= Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, NEU = Neuroticism, EXT = Extraversion, OPEN = Openness, AGRE = Agreeableness, CONS = Conscientiousness

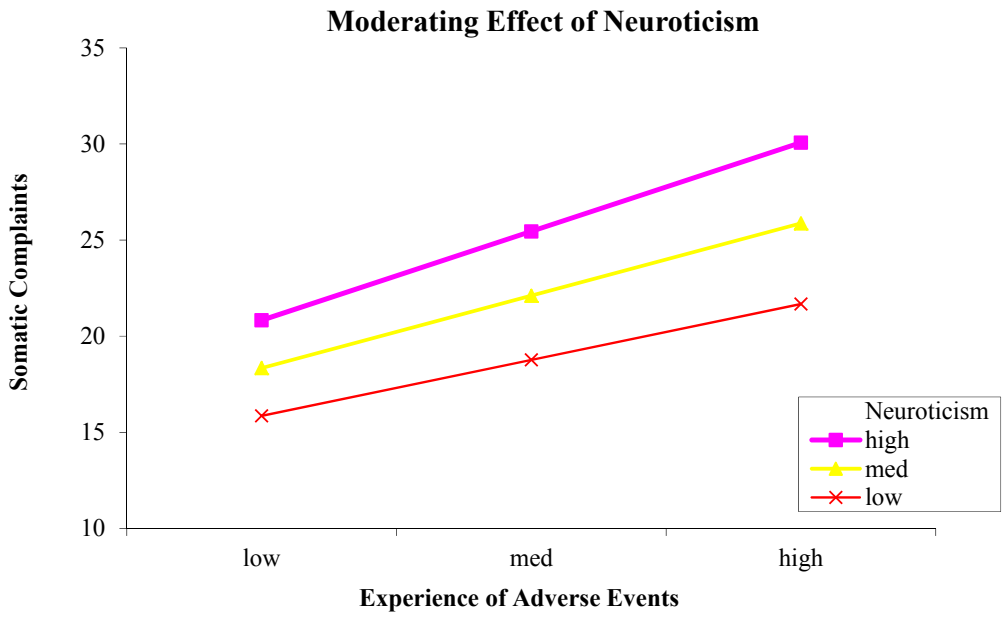

Figure 91. Moderating effect of neuroticism in predicting somatic complaints among adolescents

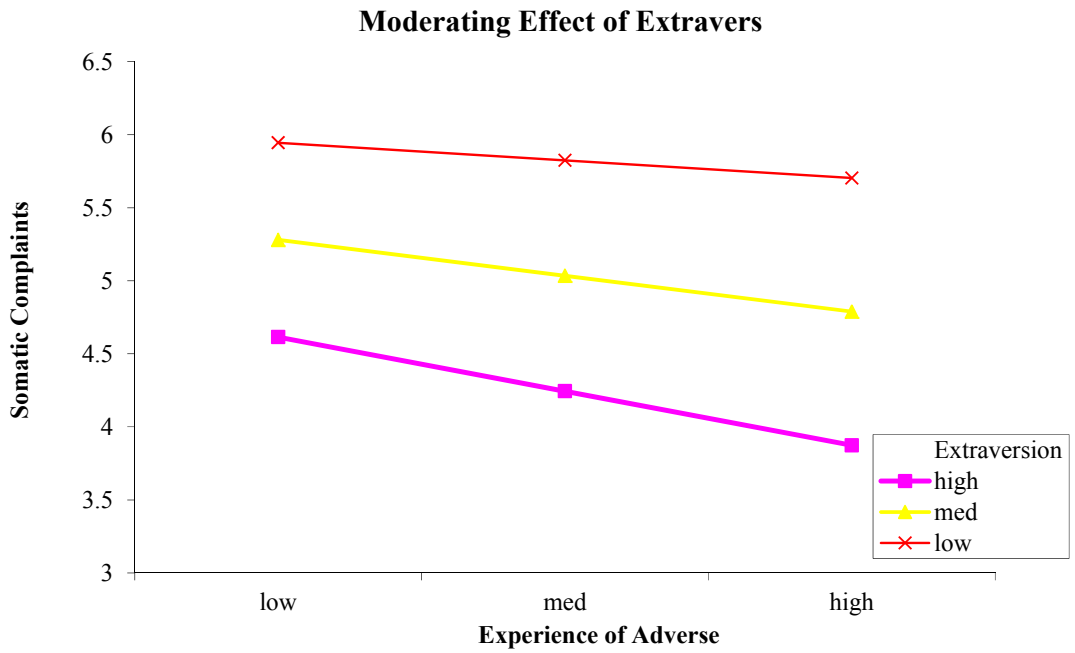

Figure 92. Moderating effect of extraversion in predicting somatic complaints among adolescents

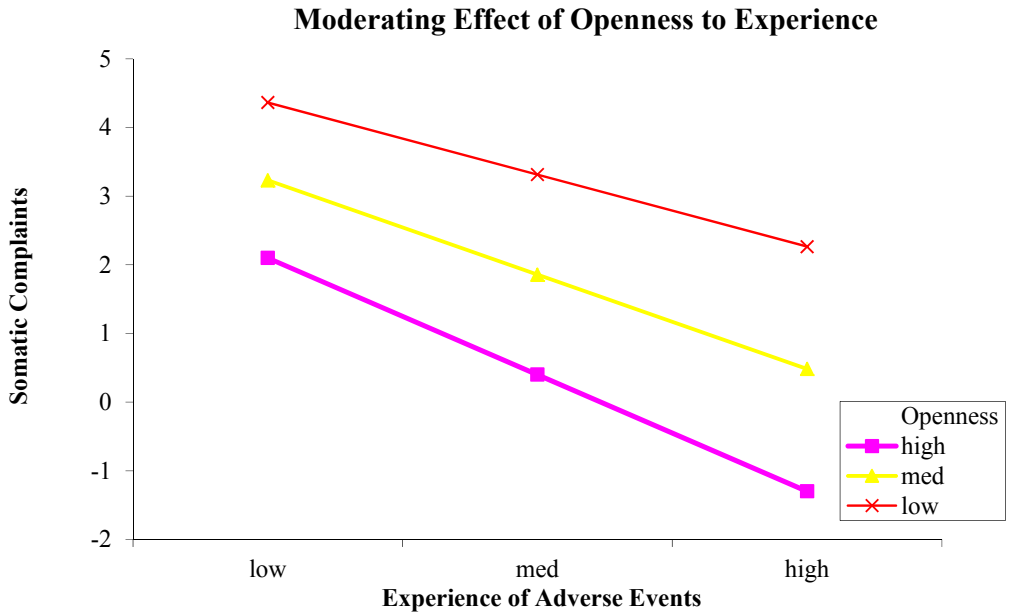

Figure 93. Moderating effect of openness to experience in predicting somatic complaints among adolescents

Table 42 displays results for moderating role of personality traits in relationship between experience of adverse life events and somatic complaints among adolescents. Moderation effect of neuroticism is reported in model 1 of the table. A significant interaction term indicates that neuroticism significantly moderated (B = .002, t = 6.25, p < .001) the effect of adverse life events along with accounting for 24% of variance (R^2 = .24, F (3, 659) = 77.84, p < .001) in somatic complaints. Mod graph (Figure 91) elaborates this effect by suggesting that neuroticism booted the effect of adverse life events on somatic complaints. Slopes of the graph indicate that as the level of neuroticism increased the impact of adverse life events on somatic complaints intensified.

Model 2 reveals that extraversion also served as a significant moderator (B = -.001, t = -3.31, p < .01) with explaining 28% of variance (R^2 = .28, F (3, 659) = 123.88, p < .001) in somatic complaints. Mod graph (Figure 92) further illustrates these results by revealing

that extraversion buffered the relationship between experience of adverse life events and somatic complaints. Slopes indicate that increase in the level of extraversion weakened the effect of adverse life experiences.

A significant interaction term in model 3 depicts a significant moderation effect (B = -.001, t = -2.27, $p < .05$) for openness along with accounting for 7% of variance (R^2 = .07, F (3, 659) = 21.80, $p < .001$) in somatic complaints. Extending these findings, mod graph (Figure 93) elaborates that openness buffered the relationship between experience of adverse life events and somatic complaints. Slopes indicate that as the level of openness increased, the effect of adverse life experiences on somatic complaints minimized.

Values displayed in model 4 and 5 of the table reveal that agreeableness and conscientiousness did not account for significant moderation ($p > .05$) in the relationship between experience of adverse life events and somatic complaints.

Table 43

Moderating effect of Personality Traits on Academic Problems among Adolescents (N = 663)

					Academic Problems	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		18.38	.31	59.36	.000	[17.77, 18.98]
EALE		.04	.007	6.19	.000	[.03, .05]
NEU		.15	.04	3.77	.000	[.07, .23]
EALE × NEU		.005	.001	56.21	.000	[.004, .007]
R^2	.17					
F	39.46				.000	
Constant		18.05	.31	58.17	.000	[17.44, 18.66]
EALE		.03	.007	4.22	.000	[.02, .04]
EXT		-.32	.03	-9.98	.000	[-.38, -.26]
EALE × EXT		-.003	.001	-4.38	.000	[-..005, -.002]
R^2	.24					
F	94.87				.000	
Constant		15.06	.19	76.35	.000	[14.67, 15.45]
EALE		.05	.005	10.73	.000	[.04, .06]
OPEN		-.16	.02	-8.39	.000	[-.20, -.13]
EALE × OPEN		-.001	.0004	-1.20	.231	[-.001, .0003]
R^2	.45					
F	199.94				.000	
Constant		15.29	.18	83.77	.000	[14.93, 15.65]
EALE		.06	.004	15.41	.000	[.06, .07]
AGRE		-.10	.02	-4.94	.000	[-.14, -.06]
EALE × AGRE		-.001	.001	-.95	.343	[-.001, .001]
R^2	.41					
F	169.30				.000	
Constant		15.05	19	77.33	.000	[14.67, 15.43]
EALE		.05	.005	11.12	.000	[.04, .06]
CONS		-.17	.02	-8.67	.000	[-.21, -.13]
EALE × CONS		-.001	.0004	-1.32	.186	[-.001, .0003]
R^2	.46					
F	203.05				.000	

*p>.05= Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, NEU = Neuroticism, EXT = Extraversion, OPEN = Openness, AGRE = Agreeableness, CONS = Conscientiousness

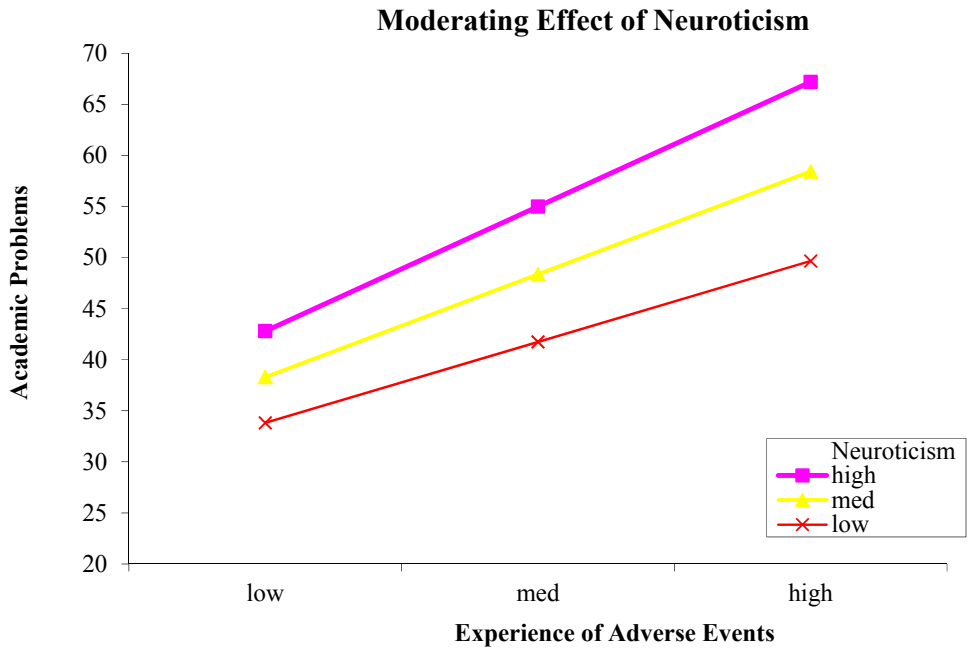

Figure 94. Moderating effect of neuroticism in predicting academic problems among adolescents

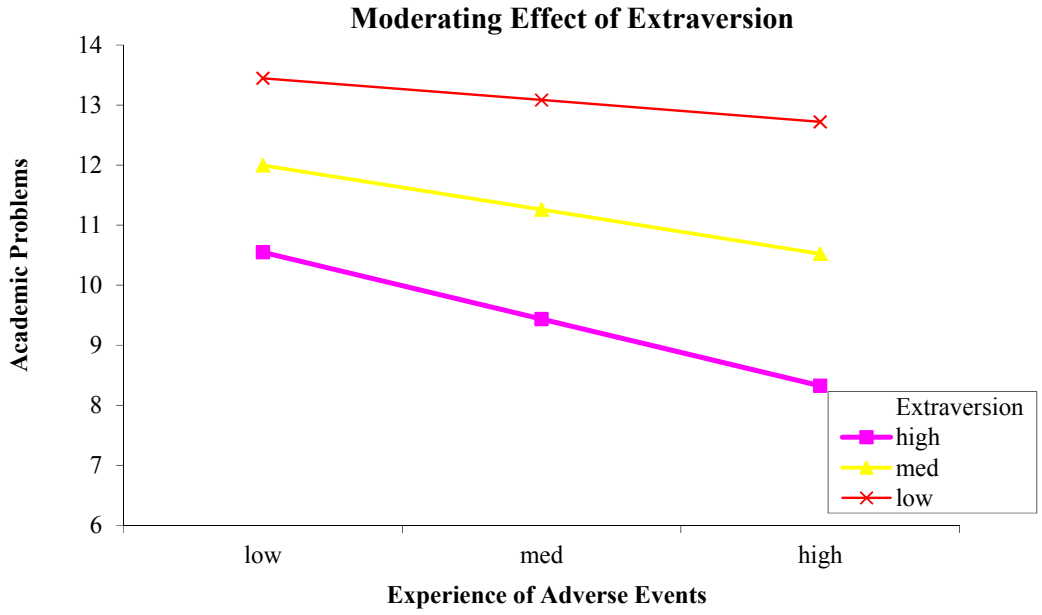

Figure 95. Moderating effect of extraversion in predicting academic problems among adolescents

Table 43 shows results for moderating role of personality traits in relationship between experience of adverse life events and academic problems among adolescents. Model 1 shows moderating effect of neuroticism. Interaction term suggest that neuroticism significantly moderated (B = .005, t = 6.21, p < .001) the effect of adverse life experience along with contributing 17% of variance (R^2 = .17, F (3, 659) = 39.46, p < .001) in academic problems. Mod graph (Figure 94) explicates these findings by suggesting that neuroticism boosted the relationship between experience of adverse life vents and academic problems. Slopes indicate that increase in the level of neuroticism exacerbated the effect of adverse life experiences on academic problems.

Extraversion also served as a significant moderator (B = -.003, t = -4.38, p < .001) and collectively, with experience of adverse life events, explained 24% variance (R^2 = .24, F (3, 659) = 94.87, p < .001) in academic problems. Mod graph (Figure 95) further elucidates this effect by suggesting that extraversion buffered the relationship between experience of adverse life events and academic problems. Slopes of the graph depict that as the level of extraversion increased, it alleviated the effect of adverse life experiences.

Values of model 3, 4, and 5 indicate that openness, agreeableness and conscientiousness did not produced significant moderation (p > .05) in the relationship between experience of adverse life events and academic problems.

Table 44

Moderating effect of Personality Traits on Feelings of Rejection among Adolescents (N = 663)

					Feelings of Rejection	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		9.84	.19	51.51	.000	[9.47, 10.22]
EALE		.02	.004	5.22	.000	[.01, .03]
NEU		.16	.02	7.68	.000	[.12, .19]
EALE × NEU		.002	.001	4.58	.000	[.001, .003]
R^2	.20					
F	59.77				.000	
Constant		19.29	.52	36.94	.000	[18.26, 20.31]
EALE		.04	.01	3.34	.000	[.01, .06]
EXT		-.31	.04	-6.99	.000	[-.39, -.22]
EALE × EXT		-.005	.001	-4.58	.000	[-.007, -.003]
R^2	.18					
F	63.35				.000	
Constant		20.19	.48	41.66	.000	[19.23, 21.14]
EALE		.05	.01	4.62	.000	[.03, .07]
OPEN		-.25	.05	-5.58	.000	[-.34, -.16]
EALE × OPEN		-.008	.001	-9.18	.000	[-.01, -.006]
R^2	.21					
F	82.15				.000	
Constant		19.59	.47	41.92	.000	[18.67, 20.51]
EALE		.08	.01	9.09	.000	[.06, .10]
AGRE		-.01	.05	-.15	.879	[-.09, .11]
EALE × AGRE		-.008	.001	-6.75	.000	[-.01, -.005]
R^2	.15					
F	54.04				.000	
Constant		19.94	50	39.66	.000	[18.96, 20.93]
EALE		.07	.01	6.61	.000	[05, .09]
CONS		-.13	.05	-2.88	.004	[-.22, -.04]
EALE × CONS		-.007	.001	-7.94	.000	[-.01, -.005]
R^2	.18					
F	68.28				.000	

*p>.05= Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, NEU = Neuroticism, EXT = Extraversion, OPEN = Openness, AGRE = Agreeableness, CONS = Conscientiousness

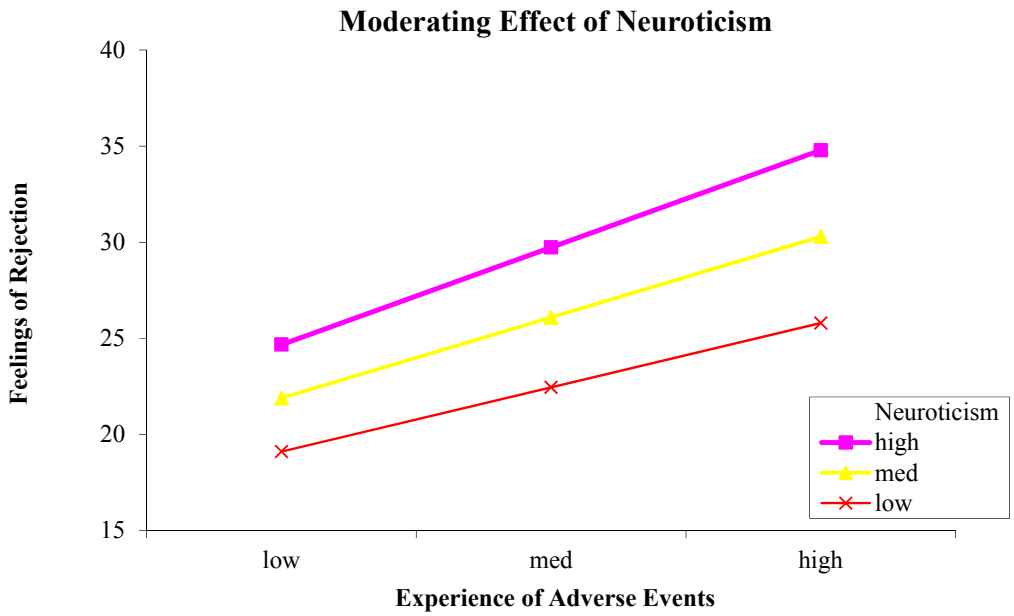

Figure 96. Moderating effect of neuroticism in predicting feelings of rejection among adolescents

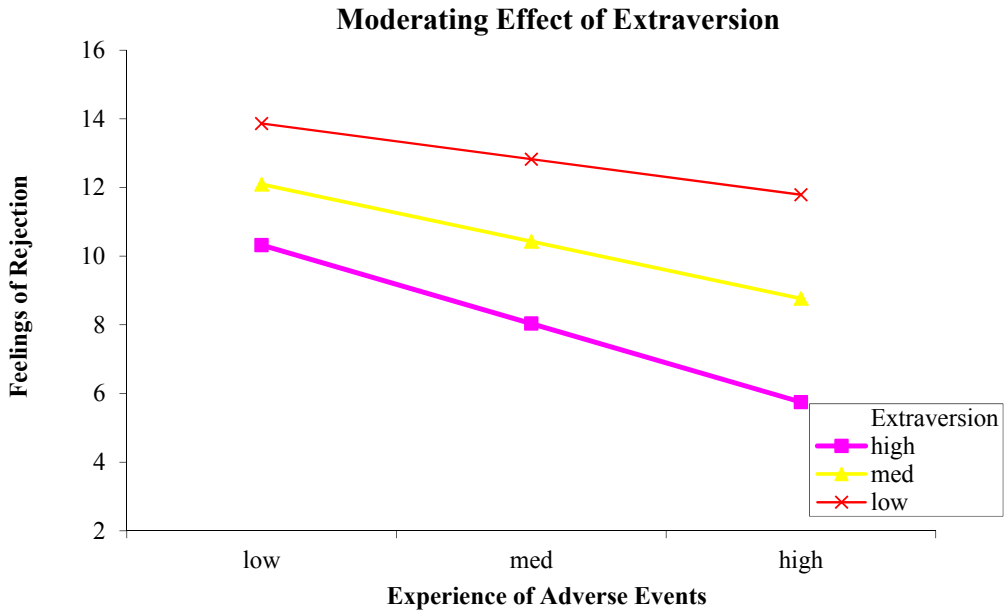

Figure 97. Moderating effect of extraversion in predicting feelings of rejection among adolescents

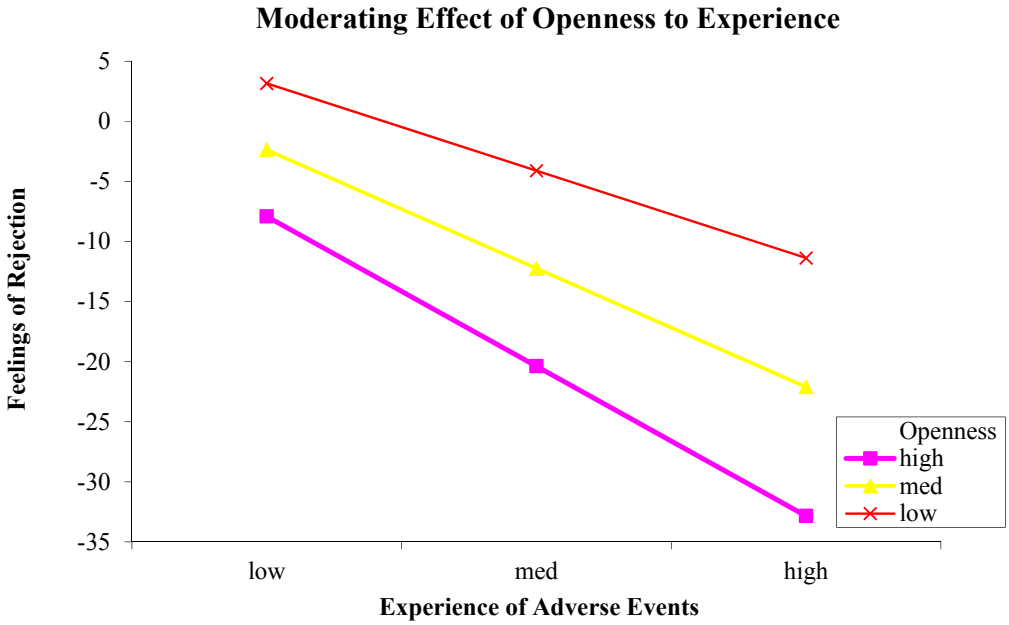

Figure 98. Moderating effect of openness to experience in predicting feelings of rejection among adolescents

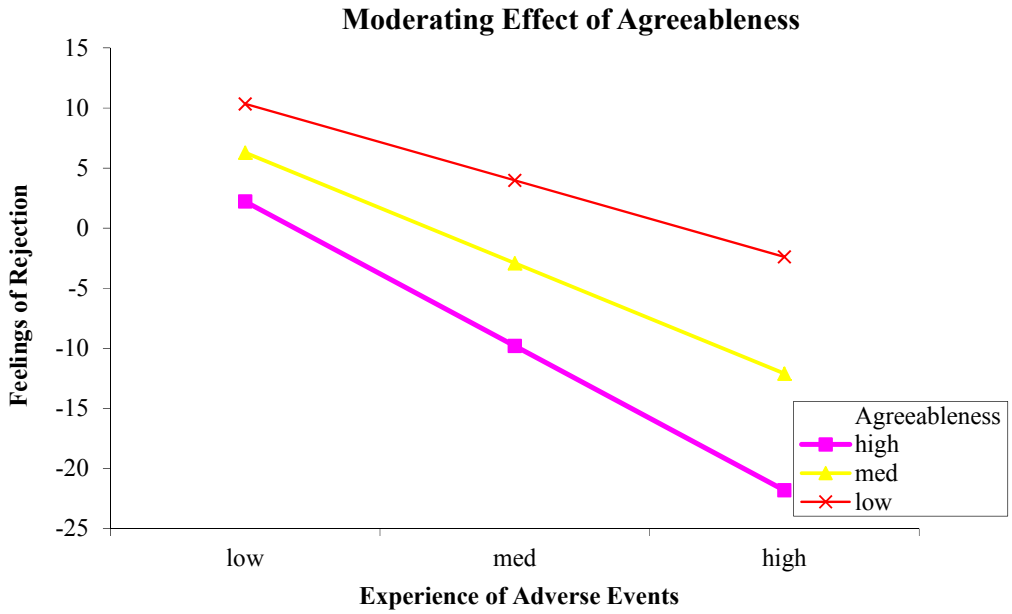

Figure 99. Moderating effect of agreeableness in predicting feelings of rejection among adolescents

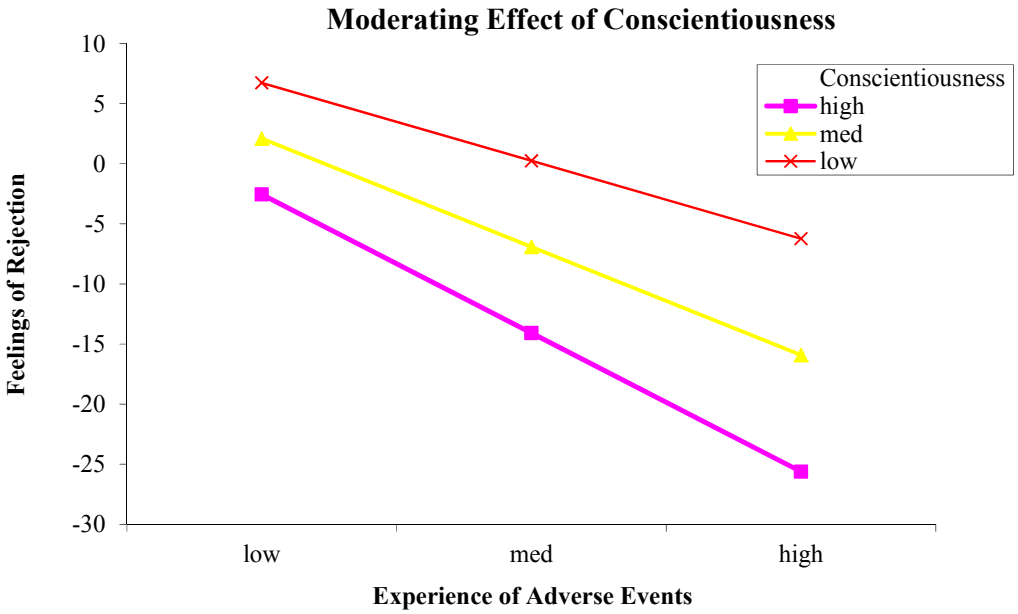

Figure 100. Moderating effect of conscientiousness in predicting feelings of rejection among adolescents

Table 44 displays results for moderating role of personality traits in relationship between experience of adverse life events and feelings of rejection among adolescents. Model 1 of the table shows moderating effect of neuroticism. Values of interaction term indicate that neuroticism significantly moderated (B = .002, t = 4.58, $p < .001$) the effect of adverse life experiences along with contributing 20% of ($R^2 = .20$, F (3, 659) = 59.77, $p < .001$) variance in feelings of rejection among adolescents. Mod graph (Figure 96) elaborates these findings by suggesting that neuroticism boosted the relationship between experience of adverse life events and feelings of rejection among adolescents. Slopes of the graph indicate that as the level of neuroticism increased the effect of adverse life experiences also escalated.

Extraversion also significantly moderated (B = -.005, t = -4.58, $p < .001$) the effect of adverse life experiences along with contributing 18% of variance ($R^2 = .18$, F (3, 659) = 65.35, $p < .001$) in feelings of rejection. Making this effect evident, interaction plot (Figure

97) indicates that extraversion buffered the effect of adverse life experiences on feelings of rejection. Slopes depict that increase in the level of extraversion alleviated the effect of adverse life events.

Values of model 3 in the tables reveal that openness also significantly moderated (B = -.008, t = -9.18, $p < .001$) the effect of adverse life experiences with explaining 21% of variance ($R^2 = .21$, F (3, 659) = 82.15, $p < .001$) in feelings of rejection. Mod graph (Figure 98) explicates these results by showing that openness buffered the relationship between experiences of adverse life events and feelings of rejection among adolescents. Slopes indicate that as the level of openness increased it alleviated the impact of adverse life events.

Agreeableness also served as a significant moderated (B = -.008, t = -6.75, $p < .001$) and collectively, with experience of adverse events, explained 15% variance ($R^2 = .15$, F (3, 659) = 54.04, $p < .001$) in feelings of rejection. Mod graph (Figure 99) further illustrates these findings and suggests that agreeableness weakened the relationship between experience of adverse life events and feelings of rejection among adolescents. Slopes of the graph depict that agreeableness attenuated the effect of adverse life experiences on anxiousness. Slopes depict that as the level of openness increased, the effect of adverse life events got faded.

Conscientiousness, as depicted in model 5 of the table, also showed a significant moderation (B = -.007, t = -7.94, $p < .001$). Values show that conscientiousness and experience of adverse life events collectively produced 18% of variance ($R^2 = .18$, F (3, 659) = 68.28, $p < .001$) in feelings of rejection. Mod graph (Figure 100) illustrates these findings and shows that agreeableness buffered the effect of adverse life experiences on feelings of rejection among adolescents. Slopes indicate that increase in conscientiousness decreases the effect of adverse life experiences.

Table 45

Means, SDs and t values of Study Variables based on Gender (N=663)

	Boys (n = 435)		Girls (n = 228)				95%CI		
							LL	UL	
Variables	M	SD	M	SD	*t*	*p*			*Cohen's d*
IALE	100.22	44.21	112.36	40.57	-3.54	.000	-19.04	-5.24	.29
ANX	19.53	8.04	32.19	10.55	-15.86	.000	-14.23	-11.09	1.35
AGG	23.30	6.26	22.61	4.45	1.48	.101	-.22	1.61	.13
SW	12.99	4.68	18.79	5.53	-13.49	.000	-6.63	-4.95	1.13
SC	6.62	2.99	9.92	3.42	-12.95	.000	-3.82	-2.77	1.03
AP	15.90	7.69	20.77	7.36	-7.97	.000	-6.07	-3.67	.65
FR	7.63	3.67	13.11	4.96	-14.73	.000	-6.22	-4.75	1.26
VOC	19.41	9.19	23.80	10.37	5.58	.000	2.84	5.93	.45
VR	9.97	3.27	11.09	3.55	4.08	.000	.58	1.67	.33
NUM	21.56	7.62	19.85	7.22	2.84	.005	.53	2.89	.23
INFO	18.28	5.54	17.05	5.36	2.78	.006	.36	2.10	.23
NVA	31.06	5.86	27.14	8.86	6.02	.000	2.78	5.04	.52
CATA	12.78	4.63	19.36	7.78	-11.72	.000	-7.68	-5.47	1.03
PERS	14.98	5.13	22.47	7.74	-13.18	.000	-8.61	-6.37	1.41
SA	12.89	4.47	17.91	6.41	-10.57	.000	-5.96	-4.09	1.07
OG	12.43	4.69	20.15	8.34	-12.95	.000	-8.89	-6.55	1.14
SC	5.14	.59	4.63	.64	10.11	.000	.42	.62	.83
BO	4.77	.82	4.14	.81	9.49	.000	.50	.76	.77
ML	1.58	.46	1.36	.33	6.92	.000	.15	.28	.55
AW	1.59	.42	1.31	.29	6.95	.000	.14	.25	.78
NEU	35.68	9.46	43.65	8.42	-11.09	.000	-9.39	-6.56	.89
EXT	16.23	2.73	14.58	2.86	7.11	.000	1.19	2.11	.59
OPEN	36.23	7.11	31.71	7.35	7.54	.000	3.34	5.69	.63
AGRE	36.65	7.75	36.24	8.88	.59	.542	-.90	1.72	.05
CONS	40.82	7.19	37.53	9.80	4.48	.000	1.85	4.74	.38

***p<.001, **p<.01; df = 661

Note: IALE=Impact of Adverse Life Events, ANX=Anxiety, AGG=Aggression, SW=Social Withdrawal, SC=Somatic Complaints, FR=Feeling of Rejection, AP=Academic Problems, VOC= Vocabulary, VR=Verbal Reasoning, NA=Numerical Reasoning, INFO=Information, NVA Nonverbal Ability, CATAS=Catastrophizing, PERS=Personalization, SA=Selective Abstraction, OG=Over Generalization, AW=Assuming the Worst, BO=Blaming Others, SC=Self-Centered, ML=Mislabeling, AR=Anomalous Response, PF=Positive Filters, NEU=Neuroticism, EXTR=Extraversion, OPEN=Openness, AGRE= Agreeableness, CONS=Conscientiousness

Table 45 shows gender differences for all the study variables. Values in the table indicate that impact of adverse life events was significantly higher on girls as compared to boys (p = .001). Similarly girls showed significantly higher level of emotional and behavioral problems as compared to boys except aggression. For aggression, no significant gender differences emerged in the sample. For cognitive abilities, boys showed

significantly higher level of Numerical Reasoning, Information, and nonverbal cognitive ability as compared to girls ($p < .01, .001$) whereas girls scored significantly higher on vocabulary and verbal reasoning abilities. As far cognitive errors are concerned, girls committed significantly greater number of ($p < .001$) self-debasing cognitive errors (i.e. catastrophizing, personalization, selective abstraction and over generalization) than boys whereas boys had higher levels of self-serving cognitive errors (self-centeredness, blaming other, mislabeling, assuming the worst) as compared to girls ($p < .001$). On personality traits, girls showed significantly high level of neuroticism whereas boys significantly differed from girls with higher levels of extraversion, openness and conscientiousness ($p < .001$). On agreeableness, no significant differences occurred between the two groups.

Table 46 below shows group differences on all the study variables based on family system. Values indicate that impact of adverse life events was significantly greater on adolescents for joint family system as compared to those from nuclear family system ($p < .05$). Results further reveal that adolescents from joint family system had significantly higher levels of emotional and behavioral problems i.e. anxiousness, aggression, social withdrawal and feelings of rejection ($p < .05$) than those from nuclear family system. However for somatic complaints and academic problems, no significant differences emerged between the two groups. For cognitive abilities, nuclear family system group showed significantly higher level of all types of verbal and nonverbal cognitive abilities (i.e. vocabulary, verbal reasoning, Information, and nonverbal ability) as compared to their counterparts ($p < .01, .05$) except Numerical Reasoning which showed no significant differences across groups. Regarding cognitive errors, adolescents with joint family system committed significantly greater number of ($p < .001, .01$) self-debasing cognitive errors (i.e. catastrophizing, personalization, selective abstraction and over generalization) than those from nuclear family system whereas no significant differences emerged ($p > .05$) on

self-serving cognitive errors (self-centeredness, blaming other, mislabeling, assuming the worst) across groups. Similarly, personality traits did not account for significant differences between adolescents from nuclear or joint family system ($p > .05$).

Table 46

Means, SDs and t values of Study Variables based on Family System (N=663)

	Nuclear (n = 311)		Joint (n = 348)				95%CI		
Variables	M	SD	M	SD	*t*	*p*	*LL*	*UL*	*Cohen's d*
IALE	99.90	42.32	108.38	43.95	-2.52	.012	-15.08	-1.88	.20
ANX	22.85	10.94	24.80	10.67	-2.31	.021	-3.61	-.29	.18
AGG	22.51	5.62	23.59	5.77	-2.43	.015	-1.95	-.21	.19
SW	14.47	5.77	15.43	5.62	-2.17	.030	-1.84	-.09	.17
SC	7.49	3.48	8.02	3.53	-1.95	.051	-1.07	.003	.15
AP	17.42	7.65	17.79	8.18	-.59	.550	-1.59	.85	.05
FR	9.14	4.87	9.91	4.91	-2.01	.045	-1.52	-.02	.16
VOC	23.80	9.95	20.92	10.24	3.67	.000	1.34	4.43	.29
VR	11.11	3.40	10.35	3.53	2.78	.006	.22	1.28	.22
NUM	21.45	7.41	20.54	7.62	1.54	.124	-.25	2.06	.12
INFO	18.57	5.24	17.20	5.66	3.42	.001	.54	2.21	.25
NVA	30.38	7.37	29.11	7.18	2.23	.026	.15	2.38	.17
CATA	14.01	6.47	16.05	6.71	-3.97	.000	-3.05	-1.03	.31
PERS	16.54	6.92	18.51	7.18	-3.57	.000	-3.04	-.88	.28
SA	13.73	5.45	15.45	5.88	-3.91	.000	-2.59	-.86	.30
OG	14.22	6.87	15.91	7.41	-3.03	.002	-2.79	-.60	.24
SC	4.99	.64	4.95	.68	.89	.372	-.06	.15	.06
BO	4.61	.85	4.49	.86	1.82	.069	-.01	.25	.14
ML	1.53	.45	1.48	.41	1.28	.200	-.02	.11	.12
AW	1.43	.41	1.44	.38	-.41	.679	-.07	.05	.03
NEU	38.34	9.95	38.51	9.86	-.22	.828	-1.68	1.35	.02
EXT	15.54	2.96	15.79	2.81	-1.09	.276	-.69	.19	.09
OPEN	34.20	7.60	35.15	7.42	-1.61	.107	-2.10	.21	.13
AGRE	36.00	8.06	39.94	8.36	-1.49	.138	-2.19	.31	.48
CONS	39.25	8.16	40.03	8.50	-1.19	.235	-2.05	.50	.09

*$p<.05$; df = 657

Note: IALE=Impact of Adverse Life Events, ANX=Anxiety, AGG=Aggression, SW=Social Withdrawal, SC=Somatic Complaints, AP=Academic Problems, FR=Feeling of Rejection, VOC= Vocabulary, VR=Verbal Reasoning, NA=Numerical Reasoning, INFO=Information, NVA Nonverbal Ability, CATAS=Catastrophizing, PERS=Personalization, SA=Selective Abstraction, OG=Over Generalization, AW=Assuming the Worst, BO=Blaming Others, SC=Self-Centered, ML=Mislabeling, AR=Anomalous Response, PF=Positive Filters, NEU=Neuroticism, EXTR=Extraversion, OPEN=Openness, AGRE= Agreeableness, CONS=Conscientiousness

Table 47

Age-wise Comparison on Nonverbal Cognitive Ability and Impact of Adverse Life Events (N = 663)

	Early (N=105)		Middle (N=416)		Late (N=142)					Mean		95% CI	
	M	*SD*	*M*	*SD*	*M*	*SD*	F	η^2	i-j	(i-j)	SE	LL	UL
NVA	27.57	9.31	30.26	6.36	30.42	7.03	8.03**	.02	E<M	2.69**	.70	1.05	4.34
									E<L	2.85**	.93	.67	5.02
IALE	102.62	41.58	115.09	45.88	96.94	44.54	6.32**	.02	E<M	12.47**	4.18	2.66	22.29
									M>L	18.15**	5.54	5.15	31.15

**$p<.01$; $p<.001$

Note: NVA = Nonverbal Ability; ISLE = Impact of Adverse Life Events

Table 48

Income-wise Comparison on Nonverbal Cognitive Ability and Impact of Adverse Life Events (N = 585)

	Low (N=167)		Middle (N=234)		High (N=184)					Mean		95% CI	
	M	*SD*	*M*	*SD*	*M*	*SD*	F	η^2	i-j	(i-j)	SE	LL	UL
NVA	29.88	6.01	30.38	5.62	30.58	6.24	.68	.002					
IALE	109.53	44.34	101.76	40.72	96.40	41.51	4.30*	.02	L>H*	13.13	4.49	2.57	23.68

*$p<.05$

Note: NVA = Nonverbal Ability; IALE = Impact of Adverse Life Events

Table 47 shows results of univariate analysis to find out mean differences on nonverbal cognitive ability and impact of adverse life events between early, middle, and late adolescents. Mean values show that significant group differences occurred on nonverbal cognitive ability (F (2,660) = 8.03, $p<.001$) between early middle and late adolescence groups. A post-hoc analysis was further computed to find out within-group differences and the findings revealed that the level of nonverbal ability was significantly lower ($p<.001$) in early adolescence group as compared to middle and late age adolescents; whereas no significant differences emerged between middle and late adolescence groups. The table further shows results for impact of adverse life events on early, middle, and late adolescence groups; and the values demonstrate significant group differences as F(2, 660) = 6.32, $p<.001$. A post-hoc analysis was further computed to explore within-group differences which revealed that middle age group showed significantly higher level of the impact of adverse life events as compared to early and late adolescence groups ($p<.01$); however, there are no significant differences on impact of adverse life events between early and late age groups.

Table 48 shows results of univariate analysis to find out mean differences on nonverbal cognitive ability and impact of adverse life events between low, middle, and high income groups of adolescents. Mean values indicate that no significant differences occurred on nonverbal cognitive ability between each of the income group. For impact of adverse life events, univariate analysis showed significant differences across three groups of income (F(2, 582) = 4.30, $p<.05$). A post-hoc analysis was further carried out to explore within-group differences which revealed that low income group had significantly higher level of the impact of adverse life events as compared to high income groups ($p<.01$); however, there no significant differences emerged between low and middle and middle and high income groups.

Table 49

Means and Standard Deviations and Summary Statistics for Multivariate Analysis of Age for Study Variables (N = 663)

	Early (n=105)		Middle (n=416)		Late (n=142)				
	M	SD	M	SD	M	SD	λ	η²	F
SCPS							.89**		
ANX	21.61	9.15	25.90	11.49	19.66	7.99		.06	21.70**
AGG	21.23	5.22	23.66	5.87	22.67	5.26		.02	8.21**
SW	13.81	4.93	15.83	5.91	13.37	5.06		.04	13.06**
SC	7.26	3.21	8.34	3.63	6.41	2.93		.05	18.13**
AP	14.98	7.28	19.21	8.37	14.72	5.34		.07	25.42**
FR	8.09	4.62	10.55	5.14	7.55	3.28		.08	27.09**
VA							.96**		
VOC	20.33	10.36	22.69	9.85	23.34	11.04		.01	3.53*
VR	9.84	3.64	10.88	3.38	11.20	3.56		.02	6.03**
NUM	18.64	7.36	21.65	7.38	21.40	7.77		.03	8.90**
INFO	16.92	5.36	18.07	5.53	18.27	5.52		.01	2.71
CNCEQ							.88**		
CATA	15.61	6.62	15.95	6.72	11.97	5.65		.06	20.32**
PERS	17.68	6.30	18.43	7.39	14.91	6.11		.04	13.53**
SA	15.22	5.70	14.79	5.71	13.66	5.74		.01	2.75
OG	14.96	6.55	16.21	7.57	11.87	5.36		.06	20.34**
HIT-Q							.92**		
SC	4.88	.59	4.91	.72	5.19	.46		.03	10.88**
BO	4.37	.85	4.54	.92	4.74	.68		.02	5.53**
ML	1.44	.40	1.54	.47	1.45	.32		.01	3.72*
AW	1.40	.42	1.42	.38	1.48	.40		.004	1.43
NEO-FFI							.91**		
NEU	38.50	7.78	38.10	11.16	38.94	7.16		.001	.38
EXT	16.37	2.69	15.16	2.75	16.64	3.09		.05	18.13**
OPEN	35.54	6.78	34.23	8.07	37.05	6.94		.01	2.80
AGRE	36.92	8.66	36.00	8.38	37.05	6.94		.003	1.14
CONS	40.75	7.93	38.45	8.46	42.96	6.99		.05	16.84**

**$p<.001$, non-sig. = $p>.05$

Note: SCPS = School Children Problem Scale, ANX = Anxiety, AGG = Aggression, SW = Social Withdrawal, SC = Somatic Complaints, FR = Feelings of Rejection, AP = Academic Problems, VA = Verbal Ability, VOC = Vocabulary, VR = Verbal Reasoning, NA = Numerical Reasoning, INFO = Information, CNCEQ = Children Negative Cognitive Errors Questionnaire, CATA = Catastrophizing, PERS = Personalization, SA = Selective Abstraction, OG = Over Generalization, HIT-Q = How I Think Questionnaire, SC = Self-Centeredness, BO = Blaming Others, ML = Mislabeling, AW = Assuming the Worst, NEO-FFI = Neuroticism Extraversion Openness-Five Factor Inventory, NEU = Neuroticism, EXT = Extraversion, OPEN = Openness, AGRE = Agreeableness, CONS = Conscientiousness

One-way multivariate analyses of variance were computed (Table 49) to examine mean differences between different age groups (early, middle and late adolescence) on study variables including emotional and behavioral problems, verbal cognitive abilities, cognitive errors and personality traits. Model 1 of the table shows statistically significant age differences on emotional and behavioral problems $F(12, 1310) = 6.47$, $p < .001$; $\lambda = .89$, partial $\eta^2 = .06$. Separate univariate analyses further confirmed these significant differences ($p < .01$) between early, middle and late adolescence on anxiousness $F(2, 660) = 21.70$, $p < .001$, aggression $F(2, 660) = 8.21$, $p < .001$, social withdrawal $F(2, 660) = 13.06$, $p < .001$, somatic complaints $F(2, 660) = 18.13$, $p < .001$, academic problems $F(2, 660) = 25.42$, $p < .001$ and feelings of rejection $F(2, 660) = 27.09$, $p < .001$.

Model 2 displays results of significant multivariate effects of age on verbal cognitive abilities among adolescents $F(8, 1314) = 3.52$, $p < .001$; $\lambda = .96$, partial $\eta^2 = .02$. Separate univariate analyses further endorsed these results by suggesting significant differences on vocabulary $F(2, 660) = 3.53$, $p < .05$, verbal reasoning $F(2, 660) = 6.03$, $p < .01$, and Numerical Reasoning $F(2, 660) = 8.90$, $p < .001$ among early, middle and late adolescence age groups. However univariate analysis suggested a non-significant effect of age on Information $F(2, 660) = 21.70$, $p < .001$ across three groups.

Model 3 of the table reveals significant difference on self-debasing cognitive errors ($F(8, 1314) = 10.54$, $p < .001$; $\lambda = .88$, partial $\eta^2 = .06$) between early, middle and late adolescence groups. Univariate test further confirmed these results and revealed significant age differences on each of the cognitive errors i.e. catastrophizing $F(2, 660) = 20.32$, $p < .001$, personalization $F(2, 660) = 13.53$, $p < .001$, and overgeneralization $F(2, 660) = 24.34$, $p < .001$. However no significant age differences were observed on selective abstraction $F(2, 660) = 2.75$, $p > .05$ between any of the groups.

Age differences for self-serving cognitive errors are given in model 4 of the table. Values reveal significant overall effect of age on self-serving cognitive errors $F(8, 1314) = 7.43$, $p < .001$; $\lambda = .92$, partial $\eta^2 = .04$. Separate univariate test supported these findings and revealed significant differences on self-centeredness $F(2, 660) = 10.88$, $p < .001$, blaming other $F(2, 660) = 5.53$, $p < .01$, and mislabeling $F(2, 660) = 3.72$, $p < .05$ between early, middle and late adolescence groups. However age did not contribute for any significant difference for assuming the worst $F(2, 660) = 1.43$, $p > .05$ between any of the groups.

Last model of the table reveals multivariate effect of age for personality traits. Values in the model suggest a significant overall effect of age on personality traits $F(10, 1288) = 6.34$, $p < .001$; $\lambda = .91$. However univariate analysis showed significant mean difference only for extraversion $F(2, 648) = 18.13$, $p < .001$ and conscientiousness $F(2, 648) = 16.48$, $p < .001$ across different age groups whereas no significant age differences occurred for neuroticism, openness and agreeableness.

Table 50

Post Hoc Analyses for Mean Differences in Emotional and Behavioral problems across different Age Groups (N = 663)

Variables	(I) Age Group	(J) Age Group	Mean Difference	S.E.	*p*	95% CI LL	95% CI UL
ANX	Early	Middle	-4.29	1.15	.001	-6.98	-1.60
		Late	1.95	1.35	.319	-1.22	5.12
	Middle	Late	6.24	1.02	.000	3.85	8.64
AGG	Early	Middle	-2.43	.62	.000	-3.88	-.98
		Late	-1.44	.72	.118	-3.15	.27
	Middle	Late	.99	.55	.168	-.30	2.28
SW	Early	Middle	-2.02	.61	.003	-3.46	-.59
		Late	.44	.72	.812	-1.25	2.13
	Middle	Late	2.47	.54	.000	1.19	3.74
SC	Early	Middle	-1.08	.37	.011	-1.96	-.20
		Late	.85	.44	.132	-.19	1.88
	Middle	Late	1.93	.33	.000	1.15	2.71
AP	Early	Middle	-4.23	.84	.000	-6.19	-2.26
		Late	.26	.98	.962	-2.05	2.57
	Middle	Late	4.49	4.49	.000	2.74	6.23
FR	Early	Middle	-2.46	.52	.000	-3.67	-1.25
		Late	.54	.61	.651	-.89	1.96
	Middle	Late	3.00	.46	.000	1.92	4.08

***p<.001, **p<.01, *p<.05, p>.5 = non-sing

Note: CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit, S.E. = Standard Error, ANX = Anxiety, AGG = Aggression, SW = Social Withdrawal, SC = Somatic Complaints, FR = Feelings of Rejection

Table 50 highlights Tukey HSD post hoc findings for differences between different age groups on emotional and behavioral problems. Values indicate that mean scores of anxiousness were statistically significantly different between early and middle groups of adolescents ($p < .01$) and between early and late groups ($p < .001$) but not between middle and late age groups ($p > .05$). For aggression, significant mean differences were found

between early and middle adolescents ($p < .001$) but not between early and late groups or between middle and late adolescence groups ($p > .05$). On social withdrawal, mean difference were significant between early and middle adolescence groups ($p < .01$) and between early and late adolescence group ($p < .001$) whereas no significant differences emerged between middle and late adolescence groups ($p > .05$). Post hoc table shows significant age differences for somatic complaints also. Values show that somatic complaints significantly differed between early and middle adolescence groups ($p < .05$) and between middle and late age groups ($p < .001$) but not between early and late age groups ($p > .05$). As far academic problems are concerned, statistically significant age differences occurred between early and middle adolescence ($p < .001$) and between middle and late adolescence age groups ($p < .001$). However early and late age groups did not differ significantly on academic problems ($p > .05$). Similar pattern occurred for feelings of rejection as significant differences were shown between early and middle adolescence groups ($p < .001$) and between middle and late adolescence groups ($p < .001$) but not between early and late age groups ($p > .05$). These findings can be illustrated through Table 49 which clearly shows that middle adolescence group showed greater numbers of all types of emotional and behavioral problems as compared to early and late adolescence groups.

Table 51

Post Hoc Analyses for Mean Differences Verbal Cognitive Abilities across different Age Groups (N = 663)

Variables	(I) Age Group	(J) Age Group	Mean Difference	S.E.	*p*	95% CI	
						LL	UL
VOC	Early	Middle	-2.36	.99	.045	.04	4.68
		Late	-.3.01	1.31	.056	-.06	6.08
	Middle	Late	-.65	1.11	.827	-1.95	3.26
VR	Early	Middle	-1.04	.34	.006	-1.83	-.25
		Late	-1.36	.45	.007	.25	1.83
	Middle	Late	-.32	.38	.675	-1.21	.57
NA	Early	Middle	-3.01	.72	.000	1.32	4.71
		Late	-2.76	.96	.011	.51	5.01
	Middle	Late	.25	.81	.95	-2.16	1.65

***p<.001, **p<.01, *p<.05, p>.5 = non-sing

Note: CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit, S.E. = Standard Error, VOC = Vocabulary, VR = Verbal Reasoning, NA = Numerical Reasoning

Table 51 presents findings of Post Hoc test regarding mean differences on verbal cognitive abilities between early, middle and late adolescence groups. Results suggest that early and middle age groups significantly differed on vocabulary ($p < .05$) whereas no significant differences occurred between early and late age groups ($p > .05$) and middle and late age groups of adolescence ($p > .05$). For verbal reasoning, significant mean differences emerged between early and middle group ($p < .01$) and middle and late age groups ($p < .01$) of adolescents while differences between middle and late age groups were non-significant ($p > .05$). Similar trends of differences were shown for Numerical Reasoning as significant age differences occurred on Numerical Reasoning between early and middle age groups ($p < .001$) and between early and late age groups ($p < .05$) of adolescents while no significant difference were explained between middle and late groups of adolescents ($p > .05$).

Table 52

Post Hoc Analyses for Mean Differences on Self-Debasing Cognitive Errors across different Age Groups (N = 663)

Variables	(I) Age Group	(J) Age Group	Mean Difference	S.E.	*p*	95% CI	
						LL	UL
CATA	Early	Middle	-.34	.71	.883	-2.00	1.33
		Late	3.64	.84	.000	1.67	5.60
	Middle	Late	3.98	.63	.000	2.49	5.46
PERS	Early	Middle	-.76	.76	.581	-2.55	1.03
		Late	2.77	.89	.006	.66	4.88
	Middle	Late	3.52	.68	.000	1.93	5.12
OG	Early	Middle	-1.24	.76	.234	-3.04	.55
		Late	3.09	.90	.002	.97	5.20
	Middle	Late	4.33	.68	.000	2.74	5.93

***p<.001, **p<.01, *p<.05, p>.5 = non-sing

Note: CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit, S.E. = Standard Error, VOC = CATA = Catastrophizing, PERS = Personalization, OG = Over Generalization

Table 52 provides results of Post Hoc test concerning age differences on self-debasing cognitive errors between early, middle and late adolescence groups. Values suggest significant age differences on catastrophizing between early and late adolescence groups (p < .001) and between middle and late age groups (p < .001) whereas no significant differences were found between early and middle adolescence groups (p > .05). Similar findings were observed for personalization. Values reveal significant differences between early and late adolescence groups (p < .001) and between middle and late age groups (p < .001) but not between early and middle age group early and late adolescence groups (p < .001) and between middle and late age groups (p > .05) of adolescents. Last model of the table highlights mean differences of age for over generalization. Values suggest that scores of over generalization were significantly different between early and late adolescence (p < .001) and between middle and late adolescence groups (p < .001) but

not between early and middle age groups ($p > .05$). Recalling mean scores reported in Table (49), values clearly indicate that middle adolescence group committed greater number of all types of self-debasing cognitive errors as compared to early and late adolescence age groups.

Table 53

Post Hoc Analyses for Mean Differences on Self-Serving Cognitive Errors across different Age Groups (N = 663)

Variables	(I) Age Group	(J) Age Group	Mean Difference	S.E.	*p*	95% CI	
						LL	UL
SC	Early	Middle	-.03	.07	.92	-.19	.14
		Late	-.31	.08	.001	-.50	-.11
	Middle	Late	-.28	.06	.000	-.43	-.13
BO	Early	Middle	-.17	.09	.185	-.39	.06
		Late	-.37	.11	.003	-.63	-.10
	Middle	Late	-.20	.08	.049	-.39	-.0004
ML	Early	Middle	-.10	.05	.084	-.21	.01
		Late	-.01	.06	.978	-.14	.11
	Middle	Late	.09	.04	.083	-.01	.19

***p<.001, **p<.01, *p<.05, p>.5 = non-sing
Note: CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit, S.E. = Standard Error, SC = Self-Centeredness, BO = Blaming Others, ML = Mislabeling

Table 53 displays findings of Post Hoc test for mean differences on self-serving cognitive errors between early, middle and late adolescence groups. Values in the table highlight a statistically significant difference on self-centeredness between early and late adolescence groups ($p < .01$) and between middle and late age groups ($p < .001$) but there is a non-significant difference between early and middle groups of adolescence ($p > .05$). Similar difference pattern was found for blaming others as there is significant difference on this error between early and late adolescence groups ($p < .01$) and between middle and late age groups ($p < .05$) but not between early and middle groups of adolescence ($p >$

.05). For mislabeling no significant differences were observed between either of the age groups ($p > .05$). Mean values reported in Table 49 illustrate that self-centeredness and blaming others were higher in the late adolescence group than early or middle adolescence groups.

Table 54

Post Hoc Analyses for Mean Differences in Personality Traits across different Age Groups (N = 663)

Variables	(I) Age Group	(J) Age Group	Mean Difference	S.E.	*p*	95% CI	
						LL	UL
EXT	Early	Middle	1.21	.31	.000	.49	1.94
		Late	-.27	.37	.744	-1.13	.59
	Middle	Late	-1.48	.28	.000	-2.14	-.83
CONS	Early	Middle	2.30	.89	.026	.22	4.38
		Late	-2.21	1.05	.090	-4.68	.26
	Middle	Late	-4.51	.80	.000	-6.40	-2.63

***$p<.001$, **$p<.01$, *$p<.05$, $p>.5$ = non-sing

Note: CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit, S.E. = Standard Error, EXT = Extraversion, CONS = Conscientiousness

Table 54 demonstrates findings of Post Hoc test regarding mean difference on personality traits between early, middle and late adolescence age groups. Results show significant differences for extraversion between early and middle adolescence groups ($p < .001$) and between middle and late adolescence groups ($p < .001$) but no significant differences were found between early and late ($p > .05$) age groups. Similar trend was observed for conscientiousness as there are significant mean differences between early and middle adolescence groups ($p < .001$) and between middle and late adolescence groups ($p < .001$) but not between early and late ($p > .05$) age groups. Mean values in Table 49 shows that early and late adolescence groups showed higher level of extraversion and conscientiousness as compared to middle age groups whereas no visible difference were found between early and late adolescence groups.

Table 55

Means and Standard Deviations and Summary Statistics for Multivariate Analysis of for Study Variables based on Income (N = 579)

	Low (n=167)		Middle (n=234)		High (n=184)				
	M	SD	M	SD	M	SD	Wilks' λ	Partial η²	F
SCPS							.86**		
ANX	24.15	10.59	26.32	11.29	21.33	10.46		.04	10.91**
AGG	23.68	5.58	23.74	5.74	21.85	5.59		.02	6.88**
SW	15.22	5.54	16.21	5.73	13.09	5.61		.05	16.02**
SC	7.77	3.59	8.59	3.44	6.85	3.33		.04	13.18**
AP	16.42	7.22	19.88	7.75	17.28	8.87		.03	10.52**
FR	9.34	4.78	10.53	5.05	9.03	5.10		.02	5.34**
VA							.94**		
VOC	21.71	10.29	21.99	9.68	24.93	10.03		.02	5.99**
VR	10.43	3.46	10.93	3.39	11.24	3.47		.01	2.45
NUM	20.01	7.69	21.84	7.53	22.05	7.28		.01	3.98*
INFO	17.60	5.61	17.79	5.56	18.78	5.45		.01	2.40
CNCEQ							.94**		
CATA	14.80	6.22	16.42	6.72	13.60	5.88		.04	10.49*
PERS	17.50	6.19	17.94	7.82	16.79	6.49		.005	1.41
SA	14.39	5.59	15.32	5.90	13.35	4.11		.02	7.13**
OG	14.92	6.67	16.52	7.52	13.68	6.52		.03	8.66**
HIT-Q							.99*		
SC	5.004	.59	4.93	.73	4.93	.66		.003	.75
BO	4.60	.73	4.52	.96	4.53	.85		.001	.40
ML	1.48	.42	1.52	.49	1.50	.39		.002	.48
AW	1.48	.40	1.44	.41	1.41	.39		.005	1.54
NEO-FFI							.91**		
NEU	39.71	8.42	38.15	10.57	36.36	11.24		.02	4.54*
EXT	15.69	2.88	15.00	2.76	16.04	3.06		.02	6.74**
OPEN	34.10	8.36	34.37	7.94	35.25	7.01		.004	1.02
AGRE	34.37	8.58	36.69	8.28	36.74	7.55		.02	5.78**
CONS	38.38	8.12	38.40	8.53	40.74	8.03		.02	4.81**

**$p<.001$, non-sig. = $p>.05$

Note: SCPS = School Children Problem Scale, ANX = Anxiety, AGG = Aggression, SW = Social Withdrawal, SC = Somatic Complaints, AP = Academic Problems, FR = Feelings of Rejection, VA = Verbal Ability, VOC = Vocabulary, VR = Verbal Reasoning, NA = Numerical Reasoning, INFO = Information, CNCEQ = Children Negative Cognitive Errors Questionnaire, CATA = Catastrophizing, PERS = Personalizing, SA = Selective Abstraction, OG = Over Generalization, HIT-Q = How I Think Questionnaire, SC = Self-Centeredness, BO = Blaming Others, ML = Mislabeling, AW = Assuming the Worst, NEO-FFI = Neuroticism Extraversion Openness-Five Factor Inventory, NEU = Neuroticism, EXT = Extraversion, OPEN = Openness, AGRE = Agreeableness, CONS = Conscientiousness

Table 55 highlights the findings of multivariate analyses of variance to study mean differences between different income groups (early, middle and late adolescence) on emotional and behavioral problems, verbal cognitive abilities, cognitive errors and personality traits. Model 1 of the table shows statistically significant differences on emotional and behavioral problems $F(12, 1154) = 7.53$, $p < .001$; $\lambda = .94$, partial $\eta^2 = .07$ between low, middle and high income groups. Individual univariate analyses further endorsed these significant differences between three income groups on anxiousness $F(2, 582) = 10.91$, $p < .001$, aggression $F(2, 582) = 6.88$, $p < .01$, social withdrawal $F(2, 582) = 16.02$, $p < .001$, somatic complaints $F(2, 582) = 13.18$, $p < .001$, academic problems $F(2, 582) = 10.52$, $p < .001$ and feelings of rejection $F(2, 582) = 5.34$, $p < .01$.

Model 2 displays results of significant multivariate effects of income on verbal cognitive abilities among adolescents $F(8, 1158) = 4.55$, $p < .001$; $\lambda = .94$, partial $\eta^2 = .03$. Separate univariate analyses further endorsed these results by suggesting significant differences on vocabulary $F(2, 582) = 5.99$, $p < .01$ and Numerical Reasoning $F(2, 582) = 3.98$, $p < .05$ among low, middle and high income groups. However univariate analysis suggested a non-significant effect of income on verbal reasoning $F(2, 660) = 2.45$, $p > .05$ and Information abilities $F(2, 582) = 2.40$, $p > .05$ across three groups.

Model 3 of the table reveals significant difference on self-debasing cognitive errors ($F(8, 1158) = 4.31$, $p < .001$; $\lambda = .94$, partial $\eta^2 = .03$) between low, middle and high income groups. Univariate test further supported these results and revealed significant differences on three of the cognitive errors i.e. catastrophizing $F(2, 582) = 10.49$, $p < .001$, selective abstraction $F(2, 582) = 7.13$, $p < .01$, and overgeneralization $F(2, 582) = 8.66$, $p < .001$ between three of the income groups. However no significant differences were observed regarding income on personalization $F(2, 582) = 1.41$, $p > .05$ between any of the groups.

Age differences for self-serving cognitive errors are given in model 4 of the table. Values reveal significant overall effect of income on self-serving cognitive errors $F(8, 1158) = 2.43$, $p < .05$; $\lambda = .99$, partial $\eta^2 = .02$. However separate univariate test showed that income did not contribute for significant difference for any of the self-serving cognitive errors *(*$p > .05$) between low, middle and high income groups.

Last model of the table reveals multivariate effect of different levels of income for personality traits. Values in the model suggest a significant overall effect of income on personality traits $F(10, 1144) = 5.68$, $p < .001$; $\lambda = .91$, partial $\eta^2 = .05$. Univariate analysis further supported significant mean difference for neuroticism $F(2, 576) = 4.54$, $p < .05$, extraversion $F(2, 576) = 6.74$, $p < .01$, agreeableness $F(2, 576) = 5.78$, $p < .01$, and conscientiousness $F(2, 576) = 4.81$, $p < .001$ across different groups of income whereas no significant differences emerged for openness.

Table 56

Post Hoc Analyses for Mean Differences in Emotional and Behavioral problems across different Income Groups (N = 663)

Variables	(I) Income Group	(J) Income Group	Mean Difference	S.E.	*p*	95% CI	
						LL	UL
ANX	Low	Middle	-2.17	1.10	.119	-4.75	.41
		High	2.82	1.16	.040	.10	5.54
	Middle	High	4.99	1.07	.000	2.48	7.50
AGG	Low	Middle	-.06	.57	.995	-1.40	1.29
		High	1.83	.60	.007	.42	3.25
	Middle	High	.189	.56	.002	.58	3.20
SW	Low	Middle	-.99	.57	.194	-2.33	.35
		High	2.13	.60	.001	.71	3.54
	Middle	High	3.12	.56	.000	1.81	4.42
SC	Low	Middle	-.82	.35	.050	-1.64	.00
		High	.92	.37	.033	.06	1.79
	Middle	High	1.74	.34	.000	.95	2.55
AP	Low	Middle	-3.47	.81	.000	-5.36	-1.57
		High	-.86	.85	.569	-2.87	1.14
	Middle	High	2.60	.79	.003	.75	4.45
FR	Low	Middle	-1.19	.51	.049	-2.38	-.01
		High	.31	.53	.831	-.94	1.56
	Middle	High	1.50	.49	.007	.35	2.66

***p<.001, **p<.01, *p<.05, p>.5 = non-sing

Note: CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit, S.E. = Standard Error, ANX = Anxiety, AGG = Aggression, SW = Social Withdrawal, SC = Somatic Complaints, AP = Academic Problems, FR = Feelings of Rejection

Table 56 presents findings of Post Hoc analysis concerning mean differences on emotional and behavioral problems between low, middle and high income groups. Results manifest that there are significant differences on anxiousness between low and high income groups (p < .05) and between middle and high income groups (p < .001) whereas no

significant differences were observed between low and middle income groups ($p > .05$). Similar trend emerged for aggressive behavior as significant differences on aggression were found between low and high income groups ($p < .001$) and between middle and high income groups($p < .001$). However low and middle income groups did not differed in aggression ($p > .05$). Same pattern of group differences occurred in social withdrawal as well. Values in the table reveal that there were statistically significant differences on social withdrawal between low and high income groups ($p < .01$) and between middle and high income groups ($p < .001$) but not between low and middle income groups ($p > .05$). Similar differences were found for somatic complaints. For academic problems, significant differences occurred between low and middle income groups ($p < .001$) and between middle and high income groups ($p < .01$) but not between low and high income groups ($p > .05$). On feelings of rejection, there were significant differences between low and middle income groups ($p < .05$) and between middle and high income groups ($p < .01$) but not between low and high income groups ($p > .05$). Overall mean values reported in Table 55 elucidate that middle income group showed the highest level of all types of emotional and behavioral problems while high income group showed the minimum levels of these problems.

Table 57

Post Hoc Analyses for Mean Differences Verbal Cognitive Abilities across different Income Groups (N = 663)

Variables	(I) Income Group	(J) Income Group	Mean Difference	S.E.	*p*	95% CI	
						LL	UL
VOC	Low	Middle	-.28	1.01	.958	-2.65	2.09
		High	-3.23	1.07	.007	-5.73	-.72
	Middle	High	-2.94	.98	.008	-5.26	-.64
NA	Low	Middle	-1.83	.76	.043	-3.62	-.05
		High	-2.04	.80	.029	-3.93	-.16
	Middle	High	-.21	.74	.954	-1.95	1.52

***p<.001, **p<.01, *p<.05, p>.5 = non-sing

Note: CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit, S.E. = Standard Error, VOC = Vocabulary, NA = Numerical Reasoning

Table 57 displays results of Post Hoc test for mean differences on verbal cognitive abilities between low, middle and high income groups. Model 1 shows that there were statistically significant differences on vocabulary between low and high income groups income groups ($p < .01$) and between middle and high income groups ($p < .01$) but not between low and middle income groups ($p > .05$). For Numerical Reasoning, significant mean differences were found between low and income groups ($p < .05$) and between middle and high income groups ($p < .05$) but not between low and high income groups ($p > .05$). Mean values given in Table 55 elucidate and endorse these differences by suggesting that adolescents from high income groups had higher level of all types of verbal cognitive abilities as compare to adolescents from low or middle income groups.

Table 58

Post Hoc Analyses for Mean Differences on Self-Debasing Cognitive Errors across different Income Groups (N = 663)

Variables	(I) Income Group	(J) Income Group	Mean Difference	S.E.	*p*	95% CI	
						LL	UL
CATA	Low	Middle	-1.62	.64	.031	-3.13	-.12
		High	1.20	.68	.176	-.38	2.79
	Middle	High	2.82	.62	.000	1.36	4.29
SA	Low	Middle	-.93	.54	.194	-2.19	.33
		High	1.04	.57	.159	-.29	2.37
	Middle	High	1.97	.52	.001	.74	3.20
OG	Low	Middle	-1.60	.71	.062	-3.26	.06
		High	1.24	.75	.222	-.52	2.99
	Middle	High	2.84	.69	.000	1.22	4.45

***p<.001, **p<.01, *p<.05, p>.5 = non-sing

Note: CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit, S.E. = Standard Error, VOC = CATA = Catastrophizing, SA = Selective Abstraction, OG = Over Generalization

Table 58 shows the findings of Post Hoc test for mean differences on self-debasing cognitive errors between low middle and high income groups. Values in the table reveal

that there statistically significant difference on catastrophizing between low and high income groups ($p < .05$) and between middle and high income groups ($p < .001$) but not between low and middle income groups ($p > .05$). Similar findings were found for over generalization. For selective abstraction, middle and high income groups differed significantly ($p < .01$) but no significant differences emerged between low and middle or low and high income groups ($p > .05$). Overall mean values reported in Table 55 illustrate these group differences by indicating that middle income group committed higher level of cognitive errors as compared to other two groups.

Table 59

Post Hoc Analyses for Mean Differences in Personality Traits across different Income Groups (N = 579)

Variables	(I) Income Group	(J) Income Group	Mean Difference	S.E.	*p*	95% CI	
						LL	UL
NEU	Low	Middle	1.56	1.04	.288	-.87	3.99
		High	3.31	1.10	.008	.73	5.90
	Middle	High	1.75	1.02	.197	-.64	4.14
EXT	Low	Middle	.69	.29	.047	.01	1.36
		High	-.35	.31	.487	-.37	1.09
	Middle	High	-1.04	.53	.001	-1.73	-.35
AGRE	Low	Middle	-2.32	.88	.020	-4.43	-.30
		High	-2.37	.81	.004	-4.50	-.68
	Middle	High	-.05	.83	.96	-2.17	1.72
CONS	Low	Middle	-.02	.82	1.00	-1.91	1.95
		High	-2.09	.89	.022	-4.45	-.27
	Middle	High	-2.07	.84	.015	-4.31	-.37

***p<.001, **p<.01, *p<.05, p>.5 = non-sing

Note: CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit, S.E. = Standard Error, NEU = Neuroticism, EXT = Extraversion, AGRE = Agreeableness, CONS = Conscientiousness

Table 59 reveals results of Post Hoc analysis for mean differences on personality traits among low, middle and high income groups. Values of mean difference demonstrate that low and high income groups differed significantly ($p < .01$) on neuroticism whereas no significant differences occurred between low and middle income groups and between middle and high income groups ($p > .05$). On extraversion dimension, significant mean differences were found between low and middle income groups ($p < .01$) and between middle and high income groups ($p < .05$) but not between low and high income groups ($p > .05$). For agreeableness dimension, significant mean differences emerged between low and high income groups ($p < .05$) and between middle and high income groups ($p < .01$) but no between low and middle income groups ($p < .05$). Values further show that there were significant mean differences on conscientiousness between low and middle income groups ($p < .05$) and between low and high income groups ($p < .05$) but not between middle and high income groups ($p < .05$). Overall mean values reported in Table 55 show that low income group had higher level of neuroticism as compared to other two groups whereas on extraversion, agreeableness and conscientiousness high income group had higher scores as compared to low and middle income groups.

Discussion

Main study was purported to examine the power of adverse life events, cognitive abilities (i.e., verbal and nonverbal), cognitive errors (i.e., self-debasing and self-serving), and personality traits to predict emotional and behavioral problems of adolescents. The study also aimed to find the moderating effect of cognitive abilities (i.e., verbal and nonverbal), cognitive errors (i.e., self-debasing and self-serving), and personality traits in explaining the association between experience of adverse life events and adolescents' emotional and behavioral problems. Another objective of main study was to explore group differences for demographics (i.e., age, gender, income, and family system) on all the study variables.

Factor Structure of CNCEQ and HIT-Q

As decided in the pilot study, the factor structures of CNCEQ and HIT-Q were recomputed (Table 13) in the main study to assess the fitness of both models. Results of the main study approved the four-factor model of CNCEQ and six-factor model of HIT-Q as the values of RMSEA (.07) lie in acceptable range and fit indices are greater than .90 suggesting good model fit for both of the measures. For model fit of CNCEQ, findings get partial support from Karakaya et al. (2007) who confirmed three factors: personalizing, catastrophizing and selective abstraction while overgeneralization was ascertained to be conglomerated under these three factors. The findings of the present study, however, show a discrepancy with most of the studies probed into the factor structure of CNCEQ (i.e., Kingery et al., 2009; Maric et al., 2011; Stewart et al., 2004). The reason behind this inconsistency may be the lingual and methodological issues during the process of translation and adaptation. Although, there exists a consensus regarding the universality of cognitive errors, however culture and language are the crucial constituents in shaping the

cognitive processes. Moreover semantic understanding and expression of these thought patterns can also vary across cultures. A rigorous knowledge of the cultural norms is a requisite for the amelioration in CNCEQ as a valid and universal measure of cognitive functioning among youth. To sum up, along with the CFA findings, good internal consistency and high reliability coefficients of Urdu version of CNCEQ also show that the measure is reliable and appropriate to use with Pakistani adolescents. These findings are consistent with the original questionnaire (Leitenberg et al., 1986).

Model fit of HIT-Q is now in line with previous validation studies (i.e., Gibbs et al., 2001; Fernandez et al., 2013; Nas et al., 2008; Plante et al., 2012) hence strengthen and reinforce our confidence in using HIT-Q to assess self- self-serving cognitive errors of Pakistani adolescents.

Predictive Role of the Study Variables for Emotional and Behavioral Problems

To meet the objectives and test the hypotheses of the study, linear and multiple regression analyses were computed to study the impact of adverse life experiences, cognitive abilities (verbal and nonverbal), cognitive errors (self-debasing and self-serving), and personality traits (neuroticism, extraversion, openness, agreeableness, and conscientiousness) on emotional and behavioral problems of adolescents.

Adolescence, being a critical and transitional developmental phase, is marked by several changes including physical maturation, emerging sexuality, family conflicts and dysfunction, fiscal hardships, and authoritarian communal norms and need for autonomy as well as multiple sources of stress. Exposure to these stressors, if not handled rightly, can have a negative impact on adolescents' health and may jeopardize them for frequent physical and psychological symptoms (Evans, 2003; Hayat, 2011; Kazdin, 2000).

These symptoms, occurring more frequently in school children, are usually classified in terms of ‘internalizing and externalizing’ or ‘emotional and behavioral’

problems (Achenbach & Edelbrock, 1978). Internalizing or emotional problems include overly absorbed and inhibited emotions or covert behaviors such as anxiety, social alienation, and somatic symptoms (Baker, Grant, & Morlock, 2008; Evans 2003). Externalizing behavioral problems, on the contrary, have been defined as unrestrained overt expressions of emotions e.g. aggressive and disruptive behavior, defiance, hyperactivity, and conduct tendencies (Gunther, Drukker, Feron & Os, 2007; Merrell, 2003; Zahn-Waxler, Klimes-Dougan, & Slattery, 2000).

Saleem & Mehmood (2011) reported 8% to 16% ratio for emotional and behavioral problems among secondary school children where anxiousness (16%) and rejections feelings (15%) were the most prevalent problems. These statistics endorse previous results that prevalence of emotional and behavioral problems among children and adolescents are growing with an alarming rate (Achenbach, Dumenci, & Rescorla, 2002; Al-Gelban, 2007; Collishaw, Maughan, Goodman, & Pickles, 2004). It is also accepted far and wide that these difficulties, if not addressed timely and remain unheeded, may have devastating effect not only on child's psychological health but extends to academic, social, and professional arenas later in life (e.g., Hughes, Lourea-Waddell, & Kendall , 2008; Mash & Wolfe, 2005; Nock & Kazdin, 2002; Turner, Finkelhor, & Ormrod, 2010).

Among the many aetiological factors (Muris, Mayer, Reinders, & Wesenhagen, 2011), adverse life events have been promised as the chief predictors of both internalizing and externalizing problems (Kumpulainen, Räsänen, & Puura, 1998; Kim et al., 2003) and numerous studies have confirmed this assumption by revealing a positive relationship between the experience of adverse life events and problem behaviors i.e., conduct problems, (Gunther et al., 2007) anxiety, and depression (Verhulst et al, 2003). In Pakistan, although a number of researches have been carried out to study emotional and behavioral problems of adolescents (i.e., Saleem & Mehmood, 2011, 2012, 2015; Samad, Hollis,

Prince, & Goodman, 2005; Syed & Husseein, 2009; Syed, Hussein, & Mahmud, 2007) but the phenomenon has been hardly studied in the context of adverse life experiences. The main study was primarily intended to examine the impact of stressful life events on emotional and behavioral problems of adolescents. The first hypothesis of main study also states that experience of adverse life events predict emotional and behavioral problems among adolescents.

Results of the study (Table 15) supported this assumption by revealing that adverse life experiences positively predicted emotional and behavioral problems among adolescents. These findings are in line with previously reported literature as well as other data in hand (i.e., Cicchetti & Toth, 2005; McMahon, Grant, Compas, Thurm, & Ey, 2003; Shaw, 2003) theorizing that various life stressors i.e., sexual abuse, parental conflict and divorce, physical or emotional neglect, maltreatment, and exposure to war related traumas and extremism have devastating effect on psychological and emotional health of children and adolescent and may lead to grievous mental health problems including post-traumatic stress disorder, depression, anxiety and social alienation. However, literature (i.e., Rutter, 2006, 2007), at the same time, also highlights that people have different reactions to the same traumatic experiences depending upon multiple social and personal factors e.g. social support, resilience, personality traits, and cognitive abilities (Gottfredson & Deary, 2004; Grant et al., 2006; Updegraff & Taylor, 2000).

The link between adolescent psychopathology and cognitive abilities or academic abilities has been well documented and this evidence is mostly based upon the researches demonstrating cognitive ability as a buffer zone against emotional and behavioral difficulties among school children. These findings have been established by the studies using clinical samples (Hollander & Hebborn-Brass, 1989; Loney, Frick, Ellis, & McCoy, 1998) as well as the studies based upon general population (Flouri et al., 2012; Manikam,

Matson, Coe, & Hillman, 1995). Moreover, a stable and consistent relationship has been observed between the two constructs over time (Anderson, Anderson, Northam, Jacobs, & Mikiewicz, 2002; Dietz, Lavigne, Arend, & Rosenbaum, 1997; Kusche, Cook, & Greenberg, 1993).

However, a substantial discrepancy has been found regarding the causal path of this relationship. One school of thought (i.e., Jorm, Share, Maclean, & Matthews, 1986; Palfrey, Levine, Walker, & Sullivan, 1985) postulates that emotional and behavioral problems function as the source factors of cognitive deficits and academic underachievement among adolescents. While others (e.g., Halonen, Aunola, Ahonen, & Nurmi, 2006; Miles & Stipek, 2006) theorize that poor cognitive abilities or low intellectual abilities lead to emotional and behavioral outcomes in children and adolescents. Parallel to these arguments, some researchers (e.g., Morgan et al., 2008; Trzesniewski et al., 2006) appreciate a reciprocal model proposing an inverse relationship between the both.

Based upon the second paradigm next hypothesis of the main study stated that verbal and nonverbal cognitive abilities negatively predict emotional and behavioral problems among adolescents. Findings of the study (Table 16) partially affirmed this assumption and found that verbal cognitive abilities (vocabulary, verbal reasoning, Numerical Reasoning and Information) had a significant negative impact on emotional and behavioral problems of adolescents. These results are quite congruent with the existing literature i.e. two longitudinal studies (Sato et al., 2016; van Os, Jones, Lewis, Wadsworth, & Murray, 1997) based upon general population found a causal link between lower level of cognitive abilities and developmental psychopathology. These researches exhibited that cognitive deficits originating at childhood age result in non-psychotic psychopathologies in later years (Sato et al., 2016; van Os et al., 1997).

Studies have further elaborated that children and adolescents identified with poor intellectual abilities, developmental delays (Guralnick & Groom, 1987), and under achievements (Becker & Luthar, 2002) are usually vulnerable to experience low self-esteem, disapproval, and peer rejection (Bellanti & Bierman, 2000) which, in turn, may lead towards problem behaviors (Suresh, Ayyappan, Nandini, & Ismail, 2015) including conduct tendencies (Sato et al., 2016), emotional difficulties (Singh & Sharma, 2012), social alienation (Parker & Asher, 1987) etc. Some researchers have also highlighted attention and hyperactivity problems among children and adolescents with intellectual and cognitive deficits (Sato, 2016; Singh & Sharma, 2012).

Second hypothesis also hold that nonverbal cognitive ability negatively predict emotional and behavioral problems among adolescents. Contrary to the existing data, results of the main study (Table 17) did not support this assumption. Previous studies have drawn opposite conclusion e.g. a study with a community sample of 4000 pairs of twins (Plomin, Price, Eley, Dale, & Stevenson, 2002) reported a moderate negative association between nonverbal cognitive ability and emotional and behavioral difficulties. In their study Plomin et al. (2002) concluded that lower level of nonverbal cognitive ability is a risk factor of problem behaviors among school going children. Similar findings have been reported in later studies (Flouri et al., 2012; Flouri & Panourgia, 2011; Flouri & Tzavidis, 2010) as well. However, the reason behind these inconsistent findings may be the curriculum devised for secondary school children in Pakistan.

Curriculum is, in fact, the fundamental pathway to achieve the set objectives of education in a society. The Curricula designed in the education system of Pakistan is too superannuated to satisfy the contemporary educational demands and the international standards as well. Being a traditional out-fashioned tool it just compels the students for rote memorization of certain facts and figures while does not acknowledge the holistic

growth and development of the learners. It puts greater emphasis on confirming the ideology of teachers with the typical reward and punishment system and does not incorporates the psychological, philosophical as well as sociological foundations of education. It neither prepares them for practical life nor polishes them for research with scientific knowledge and reflective observation; but just focuses on memorizing the theoretical concepts.

Above all, it is devoid of the creative learning practices which enhance the nonverbal abilities of apprentices. These abilities may include abstract reasoning, spatial abilities, diagrammatical skill, and puzzle solving which cultivate and refine the problem solving ability of children and train them to cope with the everyday stressors and resultant mental health problems effectively. Keeping all these facts in mind, the findings of the current study are quite justified and compatible with the education system of secondary schools in Pakistan. Since this nonverbal cognitive ability was not the part of their learning therefore it did not account any significant effect in explaining emotional and behavioral problems of adolescents.

Third hypothesis of the study stated that self-debasing and self-serving cognitive errors lead to emotional and behavioral problems among adolescents. Cognitive errors, according to cognitive behavior therapist, are the reality distorting thoughts which reinforce negative emotions (Rehna et al., 2012*)* and lead individual to misinterpret any event in the environment and ultimately result in disturbed emotions. Based upon this assumption, existing literature (Garnefski, Kraaij, & Spinhoven, 2001; Garnefski, Kraaij, & Spinhoven, 2002) has made a clear distinction between thinking errors which are self-targeted in nature (i.e., self-blaming, catastrophizing, rumination, and over generalization) and those which are negatively biased towards others (i.e., other-blaming, rationalization, and self-centeredness etc.). Expatiating further, researches have drawn specificity of the

self-degrading thinking errors (personalizing, rumination, and catastrophizing) with internalizing symptoms including anxiety, depression, and withdrawal tendencies (Epkins, 2000; Garnefski et al., 2001, 2002; Garnefski, Boon, & Kraaij, 2003; Garnefski, Teerds, Kraaij, Legerstee, & van den Kommer, 2003).

Findings of the study, again, partially supported this hypothesis by suggesting that self-debasing cognitive errors (catastrophizing, personalizing, selective abstraction, and over generalization) positively predicted (Table 18) all of the problem behaviors except aggression; as aggression was negatively predicted by these type of thinking errors. However, self-serving cognitive errors (self-centeredness, blaming others, mislabeling, assuming the worst) showed a significant negative impact (Table 19) on all problems but positively predicted aggression among adolescents.

Findings of the self-debasing cognitive errors are very much alike with the researches previously reported (e.g., Aldao et al., 2010; Cannon & Weems, 2010; Leung & Poon, 2001; Weems & Silverman, 2006; Weems & Stickle, 2005) postulating that maladaptive thought patterns which are self-degrading in nature pave the way for problem behaviors, particularly internalizing problems in young children and adolescents. Explicating the underlying process, studies have reported that common difficulties in the process of emotional regulation (Lupien, McEwen, Gunnar & Heim, 2009) i.e., difficult cognitive reworking, expressive suppression, or internalization of the negative emotions regarding stress lead to problem behaviors with strong emotional symptoms (Aldao et al., 2010).

For self-serving cognitive errors, the results (Table 19) did not fully support our hypothesis. The study found that self-serving cognitive errors (self-centeredness, blaming others, mislabeling, and assuming the worst) positively predicted aggression and academic problems among adolescents but negatively predicted emotional problems. Self-serving

cognitive error, also referred to as self-serving bias, can be defined as a process based upon perceptions and cognitions in order to protect and boost self-esteem (Gibbs, 2003) or it may be defined in terms of attribution where individual tend to assign success to one's own abilities and ascribes failures more readily to situational factors (Dodge, 2010; Forsyth, 2007). In doing so, individuals, in fact, tries to protect their ego from external threats and psychological harms associated with his own behavior or environmental pressure and prove themselves as virtuous and civilized persons (Gibbs, 2003).

Although contrary to the set hypothesis; findings of the study get empirical support from a number of researches (i.e., Barriga et al., 2001; Fernandez et al., 2013; Garnefski et al., 2005) theorizing that individual with aggressive behaviors, conduct tendencies, moral disengagement, committing domestic violence, and other offences hold distinct type of thought patterns of their wrongdoings (Cattani, 2015; Langton, 2007). These thoughts, for instance, include ascribing blame to others for their own misconducts or rationalizing the consequences of such actions which are strong predictors of aggressive and antisocial behaviors (Andreu & Peña, 2013; Barriga et al., 2009; Capuano, 2011; Plante et al., 2012; Van der Velden et al., 2010). Consistent to these findings, a contemporary theory of aggression (Sestir & Bartholow, 2007) also postulated that adolescents' aggressive behaviors have a strong link with selfish and criminogenic thoughts which lead to adult recidivism later in life (Gendreau, Little, & Goggin, 1996).

Since self-serving cognitive distortions are cathartic in nature with an overt expression therefore these errors are associated with externalizing or behavioral problems such as aggression and conduct tendencies (Andreu & Peña, 2013; Barriga, et al., 2009; Capuano, 2011; Fernandez et al., 2013; Nas et al., 2008; Plante et al., 2012; Van der Velden et al., 2010) more closely rather than emotional problems which lie on the opposite extreme and constitute behaviors that are inwardly directed and more absorbing in nature

such as depressive symptoms, anxiousness and social withdrawal (Garnefski et al., 2005; Leitenberg et al., 1986).

Another significant dimension that may perform a significant role in explaining problems behaviors is the 'personality' of adolescents. The last few decades have enormously furthered our comprehension and discernment regarding different aspects of individual personality e.g. the way one feels, thinks, and behaves (John et al., 2008). A scholarly level unanimity has emerged in organizing certain behavioral aspects into broader and generalized traits (personality traits), the way these traits modify or vary over time (personality development), and also the way these relatively enduring characteristics impact different spheres of one's life. In the last decade personality research has not only focused the adult personality dimensions (Caspi et al., 2005) but a notable attention has also been paid to understand and explain personality traits of children and adolescents. More specifically, literature has established a strong association between personality traits and emotional and behavioral problems of adolescents (Cooper et al., 2000; Hoyle et al., 2000; Loukas et al., 2000; Tackett, Kushner, Herzhoff, Smack, & Reardon, 2014; Widiger & Lowe, 2008).

Relatedly, fourth hypothesis of the study held that neuroticism lead to emotional and behavioral problems among adolescents. Findings of the study (Table 20) fully supported this postulation and found that neuroticism strongly predicted emotional and behavioral problems among adolescents. These findings can be supported with the help of numerous studies based upon personality-psychopathology hypothesis. These studies (Barbaranelli, Caprara, Rabasca, & Pastorelli, 2003, Eisenberg, Smith, Sadovsky, & Spinrad, 2004; Muris et al., 2005; Muris, Winands, & Horselenberg, 2003) have manifested a central role of neuroticism in understanding the aetiology of child and adolescent psychopathology including anxiety, depression, aggression, withdrawal, and

substance disorders (Barlett & Anderson, 2012; Gomez & Francis, 2003; Kotov, Gamez, Schmidt, & Watson, 2010; Malouff, Thorsteinsson, & Schutte, 2005; Ormel, Oldehinkel, & Brilman, 2001; Ruiz, Pincus, & Schinka, 2008). Similar conclusions have been drawn in other studies (Calkins & Fox, 2002, Lonigan, Vasey, & Phillips, 2001; Muris & Ollendick, 2005; Watson et al., 2005) that neuroticism temperament or negative emotionality has been observed as a noted risk factor in developing emotional and behavioral problems of adolescents.

Next hypothesis of the study indicated that extraversion, openness, agreeableness, and conscientiousness personality traits have a negative impact on emotional and behavioral problems of adolescents. Findings of the present research (Table 20) supported this assumption and revealed that extraversion and agreeableness had a significant negative impact on all of the problem behaviors of adolescents. However, openness and conscientiousness predicted some of the problem behaviors with significant effect while for other these traits remained non-significant factors. Empirical justifications can be drawn from previous studies to support these findings i.e. Kotov et al. (2010) found in a meta-analysis that extraversion and agreeableness were negative predictors adolescent psychopathology where low level of these two traits resulted in anxiety, depression and withdrawal behaviors among adolescents. Similarly other studies found that extraverts, being sociable, self-confident, talkative and enthusiastic (Sharpe & Desai, 2001), experience low level of aggression (Barlett & Anderson, 2012; Sharpe & Desai, 2001), anxiety, social alienation, and depressive symptoms (Gothelf, Aharonovsky, Horesh, Carty, & Apter, 2004; Kotov et al., 2010; Manders, Scholte, Janssens, & Debruyn, 2006).

Similarly, adolescents with high trait of agreeableness hold the virtues of adaptability, supportive, compliance, trustworthiness, and good-nature (John & Srivastava, 1999); that is why they are less likely to indulge in problem behaviors e.g. aggressive or

conduct behaviors (Gleason, Jensen- Campbell, & Richardson, 2004; Tackett et al., 2014), or emotional problems i.e. social alienation, anxiousness, or other symptomatology (Soto & Tackett, 2015). Conscientiousness has also been reported for contributing a negative impact on emotional and behavioral problems of children and adolescents (Settles et al., 2012; Sharpe & Desai, 2001; Tackett, 2006) but in the current study it did not explained a significant impact on most of the problem behaviors.

Conscientiousness is a trait holding the characteristics of being responsible, organized, careful, vigilant, and dependable (John & Srivastava, 1999) but adolescents in Pakistani society are not much polished and groomed at this developmental level. Pakistani children and adolescents are largely dependent on parents for their economic, social, and academic needs and being socialized in a restrictive environment with greater compliance expected. They are less likely to exercise their will and take responsibilities and decisions at their own until they reach the age of early adulthood. Being stuck in 'identity vs. role confusion' stage, their conscientious trait is not much evident at this age; rather it starts getting mature at the end of adolescence period and keeps maturing in adulthood. This trajectory has also been supported by a number of researches (Bleidorn et al., 2013; Denissen et al., 2013; Roberts & Wood, 2006) that the trait of conscientiousness is prominent at the beginning of adolescence period then it suppresses throughout this period and regain maturity at early adulthood because the factors supporting this aspect of personality development are stronger and more prominent at later age.

Openness was a significant negative predictor of anxiousness, withdrawal, and somatic symptoms but it did not produced any significant variance in explaining other problematic behaviors including aggression, academic problems and rejection feelings among adolescents. Literature, in hand, too does not provide any consistent findings with respect to relationship between openness to experience and problem behaviors of

adolescents. John and Srivastava (1999) reported that people high on openness to experience trait are predominantly rewarded with intellect, creativity, cultural sophistication, open-mindedness, and progressive nature and these traits have been reported to be unrelated to aggressive impulses (Gleason et al., 2004). Similarly, Widiger and Trull (1992) reported a negative association between openness and emotional problems of youth however other researches (Klimstra et al., 2009; Klimstra, Modlin, Coppola, Lloyd, & Suster, 2010) have found non-significant impact of openness trait on emotional or behavioral domains of adolescent psychopathology.

Moderating Role of Cognitive Factors and Personality Traits

Moderation analyses were carried out by using Process Macro (Hayes, 2013) in order to examine the role of cognitive abilities (verbal and nonverbal), cognitive errors (self-debasing and self-serving), and personality traits (neuroticism, extraversion, openness, agreeableness, and conscientiousness) in the relationship between adverse life experiences and emotional and behavioral problems of adolescents.

Among the many factors, stress is the chief and the strongest predictor of adolescent psychopathology (Grant et al., 2006) which has been given a central focus in numerous theoretical models i.e., diathesis stress and cognitive vulnerability models (Abramson et al., 1978; Beck, 1967; Dodge, 1986; Horowitz, 1979; Williams, Watts, MacLeod, & Mathews, 1988) for the origin and perseverance of psychopathology or maladjusted behaviors (Ingram & Luxton, 2005; Ladd & Troop-Gordon, 2003; Shih, Abela, & Starrs, 2009). Adverse or stressful events of life are, in fact, distinct quantifiable situations or environments that carry negative impact (from mild to extremely severe) including school difficulties, relationship conflicts, health issues, and in severe cases parental divorce or death, sexual abuse, rape, or assault (Cisler et al., 2012; Trickey, Siddaway, Meiser-Stedman, Serpell, & Field, 2012). Furthermore, these adverse

experience in adolescence period are linked with the manifestation and elevation of psychological disorders i.e. emotional outcomes and behavioral disruptions (Cuthbert & Kozak, 2013; Farb, Irving, Anderson, & Segal, 2015; Farmer & Kashdan, 2015; Insel et al., 2010; Morris & Rottenberg, 2015).

Notwithstanding, it is widely accepted that individuals respond to the sensitivity, severity, and the type of stress in totally distinct manner as, with the passage of time, some individuals become overly sensitive to stress whereas others remain resilient and take that stressor as a challenge and fight to prove their abilities and strengths. This variation has numerous practical implications to understand individual variability in the onset and persistence of psychopathology. To understand this variability, literature suggests that there are some predisposed and intrapersonal traits (intellectual growth, personality traits, or cognitive paradigms) that have striking effects on the severity and magnitude of maladjusted behaviors of adolescents (Ingram & Luxton, 2005; Ladd & Troop-Gordon, 2003; Shih et al., 2009). These dispositions vary to a greater extent in children and adolescents; thus some children, with maladaptive traits, are more vulnerable to maladjustments and develop psychopathology more readily than others. These traits usually serve as moderators and may exacerbate or alleviate the effect of environmental stressors on psychosocial adjustment (Belsky, Bakermans-Kranenburg, & van Ijzendoorn, 2007). However, studies highlighting these traits have rarely focused various forms of emotional and behavioral problems individually but studied these traits either in the context of adolescent psychopathology or in terms of internalizing and externalizing problems.

In short, the above data suggest that psychopathology fallouts from an active and dynamic interaction between adversities and a multitude of risk and protective factors (as cited in Muris et al., 2007). Cognitive ability or intellectual growth is one such

intrapersonal factor that may have a cushioning effect in the relation between adverse experiences and resultant psychopathology. Researches have shown that intellectual competence or high cognitive ability is characterized with refined abilities of attention, creativity, logic, and comprehension which help in effective emotional regulation (Bradley et al., 2010). Based upon these studies, the present study hypothesized (hypotheses 6) that verbal (Vocabulary, verbal reasoning, Numerical Reasoning, and Information) and nonverbal cognitive abilities buffer the effect of adverse life experiences on emotional and behavioral problems of adolescents. Results of the study partially supported this hypothesis as a significant moderation effect was shown for verbal cognitive abilities but nonverbal ability did not account significant moderations effect in the model.

For verbal cognitive abilities, previous studies (i.e., McLoyd, 1998) have drawn some association with specific types of adversities and subsequent maladjustment. Explaining the variation in response to contextual risk, these studies develop an argument that this variability largely depends upon the degree of resilience which is predominantly characterized by a high level of cognitive abilities (Gottfredson & Deary, 2004; Grant et al., 2006; Masten et al., 1999). These studies have generally targeted school aged children to study the predictive effect of cognitive abilities on problem behaviors. For moderating role, although, two studies (Flouri et al., 2012; Flouri, Tzavidis, & Kallis, 2010) have highlighted a buffering effect of cognitive abilities on adolescent psychopathology, but these studies have focused only one specific type of adversity i.e. family related adversity and neighborhood related stressors and did not take cumulative life stress into account.

Other researchers have studied specific abilities in the context of problematic behaviors such as language ability (i.e., expression, reasoning, and vocabulary) has been widely linked with the onset and development of adolescent psychopathology. These studies (Beitchman et al., 2001; Brownlie et al., 2004; Lynam, Moffitt, & Stouthamer-

Loeber, 1993) identified that such cognitive deficits have been found to result in behavioral difficulties such as aggressiveness, delinquency, and conduct problems in adolescents. Studies further elaborate that the poor quality of these cognitive abilities leads to poor interpersonal relations and likely peer rejection which, in turn, activate other internalizing symptoms e.g., anxiety, social alienation, and depressive problems (Nelson, Benner, Lane, & Smith, 2004; Rourke, Young, & Leenaars, 1989). Some other studies have also established similar argument to explain association between mathematical problems and internalizing problems of adolescents (Lin, Morgan, Farkas, Hillemeier, & Cook, 2013; Morgan et al., 2008; Nelson et al., 2004). At the same time a few researchers (Trzesniewski et al., 2006) tried to link this association with environmental stressors.

The other side of the coin holds that individuals with higher cognitive abilities i.e. vocabulary, mathematics, or verbal reasoning are gifted with high energy level, better impulse control, and good problem solving abilities which minimize the likelihood of psychiatric problems (Cederblad, Dahlin, Hagnell, & Hansson, 1995). Researchers further linked these abilities with the neural activation in the brain (van Elk, van Schie, Zwaan, & Bekkering, 2010) because verbal abilities are language based reasoning abilities which is primarily processed in frontal lobe area in the brain (Horn, Pisoni, & Miyamoto, 2006) involving the process of self-regulation (Beer, Pisoni, & Kronenberger, 2008). That is why; adolescents with higher cognitive abilities have mature and positive self-regulation which help them better cope with stressful environment by managing the cognitive load carried by the adverse situation.

Nonverbal cognitive ability did account significant moderation in relation between adverse life experiences and adolescents' emotional and behavioral problems. As previously discussed that nonverbal abilities (i.e., perceptual abilities, diagrammatic abilities, abstract reasoning etc.) are not incorporated in the curriculum of education system

in Pakistan neither these abilities are learned in the family settings, hence no significant effect of this ability found in the present study.

Horowitz (1979), in his model of cognitive reworking proposed that experience of traumatic or adverse life events results in psychological maladjustment or pathology in children and adolescents. After the onset of distress or psychopathology, some individuals start a process of difficult reworking on trauma related thoughts and this reworking gradually fit such distortive thoughts into a long-term and stable framework. This cognitive fabric boosts the effect of trauma and increases the distress manifold and also makes them increasingly susceptible and sensitized to other adversities that may arise in that situation. These cognitive disruptions have been referred to as cognitive errors (Barriga et al., 2000; Beck, 1985) and classified as self-debasing (negatively biased towards one's own self) and self-serving (positively biased towards one's own self) errors. These cognitive distortions have been studied as moderators in present study as the study hypothesized self-debasing and self-serving cognitive errors boost the effect of adverse life experiences on adolescents' emotional and behavioral problems.

Findings of the study suggested that self-debasing cognitive errors (catastrophizing, personalizing, selective abstraction, and over generalization) significantly boosted the effect of adverse life experiences on each of the emotional and behavioral problems except somatic complaints. These studies are quite in line, rather endorsing Horowitz's notion that maladaptive and distorted cognitions exacerbate the disruptive emotions and behaviors, once a trauma is experienced. Other researchers have also verified this argument that self-debasing cognitive errors play a dominant role in exhibiting and maintaining emotional and behavioral problems such as anxiety, depression, withdrawal, and social rejection (Aldao et al., 2010; Cannon & Weems, 2010; Gualtieri & Morgan, 2008; Habib & Naz, 2015; Flouri & Panourgia, 2011; Kingery et al.,

2009; Maric et al., 2013; Pereira et al., 2012; Weems & Silverman, 2006). Beck himself argued that some individuals have dispositions to blame themselves, when confronted with a stressor, think the most awful consequences, and generalize the negativity to every similar or dissimilar situation. These tendencies multitude the distress they experience after that negative event or trauma.

In fact, these cognitive deficits carry negative, irrational, biased, and unrealistic interpretations of experiences and environment. Moreover individuals with such negative mindset hold self-deprecating negative obsessions which ultimately cause a significant negative impact on emotions and behaviors. In view of cognitive model of psychopathology (Beck et al. 1979), these deficits develop in childhood period as a result of negative information processing with even little conscious awareness. Moreover children usually fail to notice and value them initially (i.e., some children blame themselves for every negative experience) but gradually these deficits transform into stable negative schemas and negative cognitive reappraisal (Daleiden & Vasey, 1997; Horowitz, 1979; Muris & Field, 2008; Watts & Weems, 2006). Thus individual, holding such schemata, evaluate situation in a more ambiguous and complicated manner and express more emotional and behavioral problems when encountered with some form of trauma, threat or stressful event.

However, for somatic complaints, self-debasing cognitive distortions did not show a significant moderating effect. Moss-Morris and Petrie (1997), in their study on "cognitive distortions of somatic symptoms," also found that self-defeating cognitive errors draw a positive link more with anxiety and depression but not with somatic complaints. These bodily symptoms, according to Moss-Morris and Petrie have a unique association with somatic cognitive errors (SCE) which particularly focus on negative thoughts related to physical illness and pain. These findings have been recently endorsed

in two (Benvenuti, Buodo, Mennella, & Palomba, 2015; Bridwell et al., 2014) conducted on depressive disorder. These researchers concluded that self-defeating cognitive errors are positively linked with the cognitive-affective symptoms (hopelessness, helplessness, suicidal ideation etc.) of depression but not with somatic symptoms of the disorder (e.g., fatigue or loss of energy). Aforementioned studies help supporting the current findings that cognitive errors, linked with emotional symptomatology, will less likely to play a role in explaining physical symptoms produced in response to stress.

Furthermore studies have drawn a specificity of self-debasing cognitive errors with emotional symptoms (Cannon & Weems, 2010; Leung & Poon, 2001; Weems & Silverman, 2006; Weems & Stickle, 2005) as both are self-targeting in nature; perhaps that is why these errors negatively moderated aggressive behavior (a pattern of externalizing symptomatology) of adolescents in the current study. Fernandez et al. (2013) and Garnefski et al. (2005) also concluded that aggression and other externalizing problems have distinct type of cognitive biasness which is negatively targeted towards other people. Following these studies, the present study assumed that self-serving cognitive errors (self-centeredness, blaming others, mislabeling, and assuming the worst), being negative in nature, boost the effect of adverse life experiences on emotional and behavioral problems of adolescents. Results of the study supported this notion only for aggressive behavior and academic problems but not for others. For emotional problems, these errors emerged as protective factors by alleviating the impact of adverse life experiences on emotional problems.

Since “cognitive distortions” is a multifaceted and complex phenomenon hence there is no consensual definition of the concept given in the literature. In criminological research, these distortions have been defined as “offence-supportive attitudes, cognitive processing during an offence sequence, as well as post hoc neutralizations or excuses for

offending" (Maruna & Mann, 2006). This neutralization is in fact a rationalizing behavior to deny or minimize the violation of norms and justifying their misdeeds; which has also been observed in aggressive children and adolescents (Fernández et al., 2013). Among the four principal distortions (Barriga & Gibbs, 1996; Gibbs et al., 1995), self-centeredness is the prime error of thinking in which individual's own needs and opinions are emphasized to such a greater extent that the assessments of other people are barely acknowledged. Self-centeredness precedes deviant behaviors usually marked by ego threat which is minimized through secondary level cognitive distortions such as blaming others (ascribing negative behaviors to environmental sources), assuming the worst (thinking in a worst possible scenario), and mislabeling (framing their behaviors as justified and admirable). These rationalizing behaviors guard them against self-blame, justify their behaviors, and strengthen aggressive tendencies (Helmond, Overbeek, Brugman, & Gibbs, 2014).

In face of any form of adversity, these cognitive neutralization techniques aggravate externalizing problems or aggressive behaviors to protect their ego and self-esteem from the guilt or regret associated with the negative environment. Moreover, being self-protecting and self-enhancing in nature, these cognitive errors serve as protecting shield for the individual and save him from the emotional load (i.e., self-blame) predominantly associated with the internalizing problems. That is why; these errors buffered the effect of adverse life experiences on emotional problems (anxiety, social withdrawal etc.) while boosted the effect for aggression (a way of externalizing emotions) among adolescents.

Studies have also acknowledged the important role of personality in the manifestation and maintenance of various types of emotional and behavioral problems of adolescents (Lonigan & Phillips, 2001). In other words, personality may be considered as a pre-determined individual level factor that mold and shape adolescents' reactions to

adverse life experiences and therefore leads to maladjusted behaviors and psychopathology (Muris & Ollendick, 2005).

Relatedly, next hypothesis (8^{th}) of the study proclaimed that neuroticism boosts the relationship between adverse life experiences and emotional and behavioral problems of adolescents. Findings of the study provided a strong support and revealed that neuroticism significantly elevated the effect of adverse life experiences on anxiousness, aggression, social withdrawal, somatic complaints, academic problems, and feelings of rejection among adolescents. Previous studies have also reported neuroticism as a significant moderator in the association between stressful experiences and adolescent psychopathology. For instance, Lonigan and Phillips (2001) have claimed that although a higher level of neuroticism does predict anxiety disorders in children and adolescents but it is more of a dynamic interaction between adverse life experiences and neuroticism that tracks toward the development and maintenance of the problem.

These findings were later endorsed by different researchers (i.e., Muris, 2006; Muris, De Jong, & Engelen, 2004) with other problem behaviors e.g. aggressive tendencies (Eisenberg et al., 2004; Muris et al., 2004; Rubin, Burgess, Dwyer, & Hastings, 2003; Young Mun, Fitzgerald, Von Eye, Puttler, & Zucker, 2001) and social withdrawal (Oldehinkel, Hartman, De Winter, Veenstra, & Ormel, 2004; Young Mun et al., 2001). However, this interaction effect has mostly been studied broadly in terms of internalizing and externalizing problems (Gamez, Kotov, & Watson, 2010; Khan, Jacobson, Gardner, Prescott, & Kendler, 2005) or child and adolescent psychopathology (Frick & Morris, 2004; Nigg, Goldsmith, & Sachek, 2004; Muris & Ollendick, 2005; Reid, Patterson, & Snyder, 2002; Tackett, 2006) rather than focusing various problems individually.

In fact, neurotic individuals have certain predispositions i.e. negative affect, low self-control, poor self-esteem, and poor emotional regulation (Ozer & Benet-Martinez,

2006); hence, they show higher vulnerability for emotional and behavioral disruptions when encountered with any environmental stressor or threatening stimuli. Elucidating this notion a bit more, some studies emphasize that neurotic individuals are more vulnerable to pathological behaviors (Muris, 2006; Muris, Meesters, & Diederen, 2005; Ormel, Rosmalen, & Farmer, 2004) just because of their poor physical regulation system (Gray & McNaughton, 2000) or the maladaptive cognitive appraisals (Flouri & Panourgia, 2011) which incline them to exhibit more emotional sensitivity and instability in the presence of a stressful situation.

In the same manner, literature has established a moderating link of other personality factors with the occurrence of various adverse life events (i.e., interpersonal conflicts, academic failures, familial traumas etc.) and resultant psychological outcomes (e.g., Chen & Miller, 2012). The last hypothesis of the study stated that extraversion, openness, agreeableness, and conscientiousness buffer the effect of adverse life experiences on emotional and behavioral problems of adolescents. Results of the study partially supported this assumption and found a significant moderating effect of extraversion for all of the problems. Findings revealed that extraversion buffered the effect of adverse life experiences on the level of each of the emotional and behavioral problems.

Being an important personality factor, extraversion has also been studied extensively in relation to child psychopathology. Literature on personality-psychopathology hypothesis found an inverse relationship between extraversion and mental heal problems linking a high score of extraversion with little psychological problems (Headey & Wearing, 1989; Magnus et al., 1993; Watson et al., 2005). However, Spinhoven et al. (2011), following a one year prospective study, disagreed with this conclusion and regarded this an incomplete and insufficient evidence for the course of symptom development. He further theorized that instead of being causal factor, extraversion serves a

moderating role and buffers the effect of negative life events on adolescents' problem behaviors. A recent longitudinal study conducted by Calvete, Orue, and Gamez-Guadix (2016) with a sample of 1440 adolescents studied the moderating effect of extraversion in the context of life stressors (i.e., victimization of bullying) and internalizing symptoms. Their study concluded that higher level of extraversion trait significantly cushioned the stressful effect of this trauma in explaining emotional outcomes in adolescents i.e. anxiety and depression. Similar effects were observed in an earlier study (Sharpe & Desai, 2001) regarding aggressive behavior of adolescents. Authors theorized that in the presence of any environmental stimulation, extraversion trait regulate emotional reaction and minimize aggressive response. All the aforementioned researches believe that extrovert people are characterized with an optimistic view of life and they are more talkative, sociable, energetic and easily adaptable to the new environment. Above all, they use positive coping mechanism such as problem-focused strategies (i.e., ration action) to regulate emotional distress (Mirnics, et al., 2013) hence experience less negative outcomes than those of neurotic individuals.

Openness to experience is another protective factor which buffers the relation between adversity and negative outcomes. Last hypothesis of the present study held this statement and the results strongly supported the assumption. Findings depicted that openness trait significantly alleviated the impact of adverse life experiences for each of the emotional and behavioral problems of adolescents except academic problems. Previous literature has reported inconsistent findings regarding the predictive effect of openness to experience in explaining adolescent psychopathology (Klimstra et al., 2010; Klimstra et al., 2009; Widiger & Trull, 1992) and neither of the studies has focused on the moderating role of openness trait in this respect yet. However, findings of the present studies may be justified with the few studies suggesting that openness trait showed a positive association

with high confidence, creativity, flexibility, positive cognitive appraisal (McCrae & Costa, 1986; O'Brien & De Longis, 1996; Penley & Tomaka, 2002) and positive affect (Malouff et al., 2005, Steel et al., 2008) which may help individual to cope with life strain or adverse life events in a better way and they experience little emotional or behavioral difficulties as a result.

Despite extraversion and openness, agreeableness is also a significant positive trait that has been widely reported as a cushion against adolescents' pathological behaviors. The current study assumed that agreeableness buffers the effect of adverse life experiences on emotional and behavioral problems of adolescents. Findings revealed a partial support for this assumption and found a significant buffering effect for anxiety, aggression, social withdrawal, and feelings of rejection. However, for somatic complaints and academic problems no significant moderation was accounted by agreeableness trait. Previous researchers have drawn similar conclusion and found agreeableness forms a negative pattern of association with emotional symptoms such as mood and anxiety symptoms (Ferguson et al., 2000; Klimstra et al., 2010), and externalizing problems, including aggression, defiant, conduct tendencies, hyperactivity, risk taking, and antisocial behaviors (e.g., Asendorpf, 2003; Lounsbury, Sunstrom, Loveland, & Gibson, 2003; Ozer & Benet-Martínez, 2006) and this association is strengthen when a stressor is heightened (Mirnicks et al., 2013).

Agreeable persons are awarded with generosity, harmony, compassion, benevolence, and progressive nature (Caspi et al., 2005). Therefore they are less likely to receive social rejection and have a high probability to be accepted, trusted and liked by others (Jensen-Campbell et al., 2002) and are likely to receive little interpersonal conflict (Jensen-Campbell & Graziano, 2001). Even if they are being ignored, devalued, or criticized; they, being more constructive, more often respond in a temperate mode instead

of being hurt or feel rejected (Jensen-Campbell & Graziano, 2001; Gleason, Jensen-Campbell, & Richardson, 2004; Jensen-Campbell & Graziano, 2001; McCullough & Hoty, 2002; Strelan, 2007; Meier & Robinson, 2004). Moreover agreeable individuals use emotion focused (such as seeking social support) and problem-focused coping strategies (e.g., planning) which help them managing interpersonal stress via positive reappraisal (Mirnicks et al., 2013; O'Brien & DeLongis 1996, Watson & Hubbard 1996). The non-significant moderating effect for somatic symptoms is also an important finding of the present study as this kind of psychopathology is more of an intrapersonal functioning and yield few practical implications for interpersonal domain. Therefore, agreeableness, characterized by philanthropy and progressiveness, is less likely to relate and moderate this type of psychosomatic distress.

Conscientiousness, although did not show significant prediction, emerged as a significant moderator and buffered the effect of adverse life events on aggression, social withdrawal, and feelings of rejection among adolescents. In accord with the assumptions of Hayes (2013) and Field (2013), a strong moderator does not necessarily need to be a strong predictor too. A moderator is an independent factor that has an independent effect in the relationship between two variables and can either boost or buffer the relation between the two. Being a positive factor, although suppressed during adolescence (Denissen et al., 2013), may have an implicit effect on the emotional and behavioral aspects of adolescents while going through any adverse experience. Ferguson (2013) postulated that conscientiousness play a significant role in explaining the effect of stress on mental health. He argued that people with higher level of this trait experience minor stress outcomes i.e. anger or emotional symptoms because of their positive affect regulation and better impulse control as compared to those with lower level of conscientiousness. Other studies also endorsed his notion that conscientiousness serves as

more of a moderator (O'Connor, Conner, Jones, McMillan, & Ferguson, 2009) than predictor in explaining psychopathology.

Differences on Demographic Variables

Last objective of the study was to explore mean differences across gender, family system, income, and age of the adolescents on the study variables. T-test analyses were computed to measure group differences for gender and family system on all the study variables. Findings revealed that impact of adverse life events, problem behaviors (except aggression), self-debasing cognitive errors, and neuroticism were significantly higher among girls as compared to their counterparts. Finding are quite justified and in line with earlier studies (Angold et al., 2002; Chaplin, Cole, & Zahn-Waxler, 2005; Kingery et al., 2007; Rescorla et al., 2007; Shaw et al., 2009) reporting higher level of problems in girls as compared to boys. Most of the problems assessed in this study were emotional and internalizing (anxiousness, social withdrawal, somatic complaints, and feelings of rejection) in nature which are usually overly controlled, restrained, and directed towards one's own self (Compton, Burns, Egger, & Robertson, 2002) and girls are usually more submissive and more prone to internalize these problems than boys.

Moreover, Children and adolescents in conventional societies have greater tendencies to retrogress in adverse life circumstances than west because of their strict social norms and set patterns of socialization. Particularly in Pakistan, girls are socialized in a more restricted and controlled environment and are trained to be submissive and tolerant to the pressures of life. Further, because of religious parameters, they are demanded compliance and conformity to social and religious values; mainly being obedient to parents and upholding family honor. These societal pressures put them at higher risk for experiencing stress and develop emotional difficulties or internalizing symptoms i.e. anxiety, withdrawal, somatic complaints, and rejection feelings (Saleem &

Mehmood, 2011). Because of the higher level of stress and social pressure girls may go through greater hormonal changes and resultantly experience more somatic symptoms than boys (Carter et al., 2009).

Aforementioned societal factors also lead girls to develop greater tendency for committing self-negating cognitive errors (closely related to emotional/ internalizing problems) than boys (Rehna & Hanif, 2012). The level of neuroticism is also higher in girls, because of the similar features of emotional and cognitive impairment, than in boys (Mirnicks et al., 2013).

On the contrary, boys were significantly higher on self-serving cognitive errors, extraversion, openness, and conscientiousness as compared to female adolescents. In Pakistani society, boys are given more social worth, importance, and are treated in a superior manner as they have to be the family head (in a decision making role) later in life. This special treatment makes them more independent and expressive and helps them develop better coping abilities to deal with the stressors of life (Saleem & Mehmood, 2011, 2015). Moreover, they tend to externalize their stress and are less likely to involve in emotional appraisal as the girls do; hence they usually commit self-serving cognitive errors (which are self-protecting in nature) more frequently than girls. In doing so, they keep their self-esteem and ego protected and experience lower level of stress than girls.

Regarding personality traits, researches claim that boys tend to have higher level of extraversion and openness (Goodwin, & Gotlib, 2004; Shokri, Kadivar, & Daneshvarpoor, 2007) because of their sensation seeking needs and inquisitive nature (Rahmani & Lavasani, 2012; Zuckerman, 1979) than girls. As they possess biological and psychosocial dispositions of curiosity which lead them to indulge in more thrilling and risky behaviors than their opposite gender (Wagner, 2001). Other studies (Shokri et al., 2007) suggested higher level of extraversion and conscientiousness for boys than girls. These findings are

also consistent with indigenous perspective of Pakistani society where boys are comparatively more socially competent, outgoing, and confident, possess better interpersonal abilities and enjoy personal liberty more than those of girls. This special treatment fulfills them with energy, thrill and excitement which are essential components of being extraversion and openness to new experiences. Along with this protocol, they are also trained and expected to be responsible for outdoor duties and to be caring and vigilant for the protection of their family and particularly their females. That is why; they have to be organized, dependable, and efficient which are the central features of conscientiousness. For agreeableness, previous studies report higher level of agreeableness for females than boys (Lehmann, Denissen, Allemand, & Penke, 2013; Rahmani & Lavasani, 2012) but no significant differences emerged in the present study. In Pakistani culture, adolescents and children live under parental monitoring for a longer period of time and they are trained to be compliant, cooperative and considerate to adaptable well in a collectivist society. Although boys are given a bit more personal liberty but they have to practice that independence within the societal boundaries. Boys and girls, being within their social roles, are wanted to show conformity to familial and societal norms on notes. Perhaps therefore, they showed almost equal level of agreeable trait in the present study as well.

T-test also further revealed that boys scored significantly higher on mathematical ability, Information, and nonverbal abilities whereas girls showed greater abilities for vocabulary and verbal reasoning. The topic of gender variance in intellectual or cognitive competence still lacks unanimity despite a vast debate and a large body of research (Boyle, Furedy, Neumann, & Westbury, 2010; Hannon, 2014; Spelke, 2005; Strand, Deary, & Smith, 2006; Wai, Cacchio, Putallaz, & Makel, 2010) conducted on the topic. Most of these studies show a male lead in mathematical reasoning, problem solving, and nonverbal

intellect whereas a female superiority in verbal cognitive tasks. These results are very much congruent and provide an empirical support for the findings of present study. These studies show that girls perform better on the tasks requiring easy access and usage of phonemics, information processing on semantic level, and fine motor tasks. On the other side, boys usually get higher ratings on tasks demanding visual-spatial memory processing, fluid reasoning abilities, motor abilities training, and more executive functioning of abstract mathematical calculations and scientific disciplines with advanced logic (Halpern, 2004; Halpern, 2013; Halpern et al., 2007).

Another t-test was computed to examine group differences on the basis of family system (joint/ nuclear) on all the study variables. Results of the study demonstrated that adolescents from joint family system experienced significantly higher level of stress associated with adverse events, more anxiousness, aggression, withdrawal and feelings of rejection than those from nuclear family system. Findings are self-explanatory as joint family system comprises of larger family size with more familial conflicts, loads of pressures, little opportunities to express and fulfill individual needs, and poor quality time for children on the part of parents. These problems contribute in the adversities of life and aggravate the emotional or behavior difficulties of children and adolescents (i.e., they become anxious, irritated, withdrawal and start feeling being rejected) manifold if a stressor is heightened.

Besides, family system plays a significant role in developing and shaping thought patterns of the children. In joint family system, children have fewer chances to fulfill their individual need and most of the time they are striving for identity achievement. Being stuck in this identity struggle and a number of stressors, they are more likely to experience emotional instability and develop self-doubting negative beliefs and may have more intellectual and achievement deficits as a result. The present study also revealed similar

evidence and found that adolescents form joint family system experience more self-debasing cognitive errors and have lower level of cognitive abilities as compared to those from nuclear system. Because, adolescents in nuclear families avail quality time of their parents, better opportunities of education, and have high probabilities to meet their personal needs, therefore, they are more self-confident, experience little emotional or behavioral problems, and have higher cognitive abilities as compared to their opposite group. However, no significant differences emerged regarding somatic complaints, self-serving cognitive errors, and personality traits.

One-way analyses of variance were computed to study age and income wise group differences on nonverbal cognitive ability and impact of adverse life events. Results suggested a continuous increase in nonverbal ability with the growing age as this ability was greater in middle and late adolescence than at early adolescence years. Studies (i.e., Brody, 1992; Kyttälä & Lehto, 2008) have documented a curvilinear relationship between cognitive abilities such as visuospatial ability, abstract reasoning abilities, and other measures of mental ability with an increase in childhood, peak at adolescence and early adulthood and starts declining gradually after age 25. Studies have linked this pattern of progress with the similar curvilinear growth of brain with age i.e. local atrophy of the frontal cortex (Lee, et al., 2005), hippocampus (Geary, 2005), lack of application and practice and other aging effects on brain development (Cavanaugh & Blanchard-Fields, 2006).

No significant differences were seen in nonverbal cognitive ability in lower, middle, or high income group adolescents. Nonverbal cognitive abilities are brain based abilities and have neural connection and less likely depend upon socio-economic variables. Many studies have established a predictive link between family income and neuropsychological functions such as memory, language, and reasoning (Engel, Santos, &

Gathercole, 2008; Hackman, Farah, & Meaney, 2010; Piccolo et al. 2014) whereas other studies have reported a non-significant effect of socioeconomic status (SES) on cognitive development of adolescents (Lúcio Hunt, & Bornovalova, 2012; Miranda, Kim, Reiter, Galeano, & Maxson, 2007). Later type of studies or show (Lúcio et al., 2012) ascribe the relation of SES with cognition to better opportunities of schooling and protected social environment etc. studies (Piccolo, Salles, Falceto, Fernandes, & Grassi-Oliveira, 2016; Evans & Fuller-Rowell 2013; Tomalski et al. 2013) further argue that these patterns of associations are more salient at early childhood and then declines or ward off after age nine.

Impact of adverse life events was significantly higher in middle adolescence group than those in early or late adolescence period. Middle adolescence (age 15-16) is the most critical stage even in the adolescence span as adolescents have to shift from school to college level education. They have to make career choices and particularly in Pakistan rest of the career of adolescents largely depends upon their progress in matriculation exams. Overwhelmed with the academic and future-career pressure, they have higher risk for developing severe stress symptoms and other psychopathologies if face any other trauma or adverse event in their lives.

Making an income-wise comparison, the maximum level of stress related to adverse events was experienced by adolescents from lower income group than adolescents form middle and high income families. A large body of research (Chen, 2004; Cohen, Doyle, & Baum, 2006; Lantz, House, Mer, & Williams, 2005) declared similar findings that socioeconomic positions determine stress; as poor working conditions and economic pressures result in a social disadvantage which lead individuals to experience a greater volume of stress. People with poor economic set ups have little opportunities to meet their needs and have greater health related problems, educational difficulties, and social

rejections which multiplex their everyday life stress and may result even in severe psychological instabilities.

One-way multivariate analyses were computed to examine age-wise and income wise group differences on emotional and behavioral problems, verbal cognitive abilities, cognitive errors, and personality traits. The period of middle adolescence is marked by irritability, wide affect blend, and rapid mood fluctuations. This is the time when rebellious tendencies of adolescent become apparent and his obedience towards parents substitutes with conformity towards peer pressures. Moreover, along with biological and psychosocial changes, a lot of school/ academic pressures place them at risk for experiencing maladaptive emotions and disruptive behaviors (Caspi, Taylor, Moffitt, & Plomin 2000; Rowling, 2008; Saluja et al., 2004; Slemming et al., 2010). As mentioned above, this is the time when adolescents (age 15 to 16) in Pakistan are usually studying in their matriculation level which provides a base for future career and academic success. Most of the adolescents are eager to go in medical or engineering field which demand tireless hard work and hold continuous psychological pressure of competition and attaining certain grades (Frydenberg, Care, Chan, & Freeman, 2009). Such academic pressures may lead to emotional outburst and in case of other adversities of life; the negative outcomes are multiplied in numbers. Thus, middle adolescence is much more stressful than early or late years of adolescence age.

Findings of the study further declared significant difference on verbal cognitive abilities between the three adolescent age groups. Late adolescence group showed the maximum level of verbal abilities (vocabulary, verbal reasoning, mathematical ability, and Information) than early or middle adolescence groups. Verbal cognitive ability, also known as crystallized intelligence, is a lifetime process of cognitive growth and learning through school and daily life activities. Since verbal abilities are encoded and stored in

long-term memory which has a controlling and regulating unit in brain known as hippocampus, therefore the growth and progress of verbal cognitive abilities have consistently been linked with the development and maturation of hippocampus (i.e., Qin et al., 2014). In another study (Rivera, Reiss, Eckert, & Menon, 2005), researchers found greater activity in hippocampus of adolescents while learning various cognitive tasks than those f younger children. These studies are based upon the argument that hippocampus is comparatively immature in childhood and gradually matures with the growing age (develops in childhood period, show stellar improvement during adolescence and adulthood and starts declining after age 65) which also come in congruence with the results of the present study.

For self-debasing cognitive errors, significant age differences were observed where maximum level of these distortions occurred in early and middle adolescence groups than those were seen in late adolescence group. However no significant differences were observed between early and middle-aged adolescents. Although, the whole span of adolescence is regarded as sensitive and vulnerable but variations in different spheres (i.e., cognitive, emotional, and social) have been apprised with respect to early, middle, and late years of this period. Early and middle adolescence characteristically hold egocentricity, concrete thinking, emotional immaturity (Stang & Story, 2005) and identity diffusion or moratorium crises which make them emotionally more self-conscious and self-focused (Adams, Abraham, & Markstrom, 1987; Kroger, Martinussen, & Marcia, 2010). While lacking necessary abilities of problem solving, if adolescents at these stages face adverse life experiences, their tendencies of self-consciousness may turn to negative self-evaluations and resultantly lead to maladaptive cognitive paradigm.

Other studies believe that these self-degrading biases may stem from the perceived inability of environmental control and poor coping appraisal (Barlow, Allen, & Choate,

2004; Weems et al., 2007). As the adolescent moves towards the end of teen age, their cognitive and emotional development starts maturing; a blizzard of transitional strains starts simmering down along with a status transition from moratorium to identity achievement (Kroger et al., 2010). Their decision making and coping appraisal become more rational and help them in receding such cognitive impairments.

Regarding personality traits, significant age differences emerged for extraversion and conscientiousness but not for neuroticism, openness, and agreeableness. Results found that extraversion and conscientiousness had a higher level in early adolescence and late adolescence than those in middle period. Both longitudinal as well as cross-sectional studies (Klimstra et al., 2009; Roberts et al., 2006; Srivastava et al., 2003) have highlighted age differences in personality during three phases of adolescence period. These studies showed significant positive association of age with extraversion and conscientiousness but non-significant effects for agreeableness during adolescence. Studies on conscientiousness (Bleidorn et al., 2013; Denissen et al., 2013; Roberts & Wood, 2006) have reported similar type of age related differences suggesting that conscientious is more prominent in childhood and early adolescence then declines in middle years, regains maturity in late adolescence and keeps maturing in adulthood. For neuroticism, previous studies (Allemand, Zimprich, & Hendriks, 2008; Klimstra, et al., 2009; Lucas & Donnellan, 2009; Roberts, et al., 2006) have found significant age differences reporting a gradual decline in neuroticism as adolescents age but the present study found a non-significant difference across three groups of adolescents. The reason behind this inconsistency may be the nature of the sample as the present study targeted the adolescents with experience of adverse life events. Adverse life event itself is a threat to emotional stability particularly during the epoch of adolescence which is even more sensitive due to its transitional nature. Thus there is a possibility that the emotional distress

or instability may carry the same magnitude for adolescents with adverse life experiences. For openness to experience researches (i.e., Soto et al., 2011) have reported similar results showing an age wise increase in the openness trait during adulthood but no age differences were observed within adolescence age groups.

One-way multivariate analyses were also computed to examine income wise comparison on the study variables (i.e., emotional and behavioral problems, verbal cognitive abilities, self-debasing and self-serving cognitive errors, and personality traits). For emotional and behavioral problems, findings revealed significant differences between low, middle, and high income group adolescents. Results illustrated that emotional and behavioral problems were significantly lower among high income group as compared to middle or lower income groups. However no significant differences emerged between low and middle income groups. These findings are quite congruent with the existing data (McGrath & Elgar, 2015; Reiss, 2013) which suggested greater level of emotional and behavioral difficulties in adolescents from lower income status than those with more affluent families. McGrath and Elgar (2015) explained these differences with the help of numerous contextual factors e.g. material deprivation, poor nutrition, ill health facilities, disadvantaged locale, social discriminations and many others. However, the present study added a finding in the literature by showing almost the same level of problem behaviors among lower and middle income group adolescents. The reason behind may be that people of middle socioeconomic class not only have the pressure to keep their status upgraded than lower socioeconomic class but also have to compete with the upper class to attain the competitive facilities of life. Moreover, in Pakistan, mostly people in middle class have joint family structure which itself is an economic burden and escalate their life stress. In face of these pressures, they are in continuous struggle and race of maintain their financial

stature, living standards as well as educating their children which carries more economic encumbrance and multiply the problem, physical, social, or emotional in their lives.

For verbal cognitive abilities, the present study revealed significant income wise differences by showing that adolescents form high income group had higher level of verbal cognitive abilities than those from middle or low income groups. These studies are again in line with the existing literature (Farah et al., 2006; Gottfried, Gottfried, Bathurst, Guerin, & Parramore, 2003; Noble, Norman, & Farah, 2005) showing high level of cognitive abilities among children with economically advantaged families in comparison with economically disadvantaged children. Although parents across different socioeconomic statuses give maximum facilities to their off springs up to the limit they can but their poor resources make their children vulnerable for many disadvantages. Studies show (De Bellis, 2005; Grassi-Oliveira, Ashy, & Stein, 2008) that child neglect in any way slows down the growth of brain. Moreover, children from lower income class receive less cognitive stimulation and poor academic facilities (e.g., books, internet sources, coaching facilities, and other learning materials) due to their restricted purchasing power which ultimately limit their cognitive growth and learning abilities.

For self-debasing cognitive errors, the present study revealed that adolescents from middle income group committed greater level of these errors as compared to adolescents from low or high income groups. As discussed previously, the multi-level economic pressures and upward social comparison may put them under stress, decrease their self-esteem, and distort their thinking pattern by making it more pessimistic about themselves and the world. Regarding personality traits, adolescents from lower income groups showed higher level of neuroticism than other two income groups. The reason behind may be that poor financial position and related stressors of the family may make the children emotionally disturb and instable and lead to neuroticism. On the contrary, extraversion,

agreeableness, and conscientiousness were high among adolescents from high income group than those from middle or low income groups. Affluent families are, in fact, at better position to provide a healthy environment and maximum facilities of life need children to flourish physically, psychologically, socially and emotionally. Such healthy and fulfilled environment ultimately has a positive effect on a child and cause growth in positive traits of his personality.

Conclusion

The present study found that experience of adverse life events led to higher level of emotional and behavioral problems (i.e., anxiousness, aggression, social withdrawal, somatic complaints, academic problems, and feelings of rejection) among adolescents. As expected, self-debasing cognitive errors (i.e., catastrophizing, personalizing, selective abstraction, and over generalization) and neuroticism exacerbated the effect of adverse life experiences on emotional and behavioral problems. Verbal cognitive abilities (i.e., vocabulary, verbal reasoning, Numerical Reasoning, and Information), extraversion, openness, agreeableness and conscientiousness alleviated the effect of adverse life events on adolescents' emotional and behavioral problems. Contrary to the assumption, self-serving cognitive errors (self-centeredness, blaming other, mislabeling, and assuming the worst) egressed as protective factors and minimized the effect of adverse life events on emotional and behavioral problems. Study further depicted significant group differences for study variables on gender, family system, age, and family income.

Implications

The study assumes implication on both, theoretical as well as practical grounds. On theoretical stand point, the present study contributed into the indigenous literature by devising the scale (ALES) to measure adverse life experiences of adolescents. Although a number of instruments have already been devised for the purpose but those measure are

either adult-specific or hold some cultural limitations; therefore, lack confidence for blind application in Pakistani culture. ALES was developed to bridge these gaps and intended to measure a broader range of adverse events (culture and age specific) that adolescents may experience during their transitional phase. Further, the present study contributed to the indigenous literature by translating HIT-Q into Urdu language which may facilitate researchers, clinicians, and other stake holders in the assessment and interventions targeted for the youth with conduct or delinquent problems. Moreover, examining the relationship of adverse life events to adolescent psychopathology and the role of cognitive and personality factors will provide insight into the mechanisms underlying the emergence of emotional and behavioral problems in adolescence.

On practical grounds, ALES, being an indigenous measure, will serve research and clinical purposes diagnosing etiological factors of adolescent psychopathology. The study also highlights the need and may facilitate school authorities, NGOs, sweet homes, and clinicians with a main focus to develop appropriate prevention and intervention plans for adolescents with a main focus on life adversities and problematic behaviors. As Pakistan is pervaded with socioeconomic crises, terrorism, extremism, and multitude of other adversities, therefore the present study identified a serious need to establish Psychological Rehabilitation Centers to provide psychological first aid to traumatized people, particularly, youth in Pakistan.

Limitations and suggestions

Notwithstanding the potential implications, the study holds some limitations as well. First of all the present research followed a cross-sectional and quantitative design. In future, qualitative studies are suggested for the in-depth and comprehensive exploration of psychiatric problems of such vulnerable population following traumatic experiences in their lives. Moreover longitudinal design would help understand the trajectories of

psychopathology, as well as, may help identifying many risk and protective factors which may serve as mediators or moderators in the path of psychopathology.

Another limitation of this study was the selection of the problems explored. As the present study solely focused on emotional and behavioral problems of adolescents, whereas, other psychiatric problems such as PTSD, identity problems, and adjustment difficulties would better illustrate mental health of traumatized youth. Future researches, therefore, are suggested to examine these psychological problems of adolescents as well. Moreover, a more diverse and comparable sample (including general population/ untraumatized youth) is suggested for future research for a more dynamic and holistic understanding of adolescents' difficulties and psychosocial changes in face of adverse life experiences.

Similarly, present study rested upon self-report measure/ single informant approach whereas a multi-informant approach would give an in-depth exploration of the problems of traumatized youth and would also help minimizing respondent biases which may hamper the generalizability of the study findings. Lastly, as the study highlighted the problem behaviors of adolescents who experienced any adverse life events, it did not advise any intervention plan or coping mechanisms to combat and effectively deal with the stress associated with adverse life events and resultant psychopathology. In future prevention and intervention studies are suggested in the light of need assessment, which the present study highlighted.

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APPENDIXES

Appendix A

ہدایات:

قومی ادارۂ نفسیات، قائداعظم یونیورسٹی، اسلام آباد ایک تحقیقاتی ادارہ ہے جہاں مختلف موضوعات پر تحقیق کی جاتی ہے۔ آگے دیے گئے سوالنامے بھی ایک تحقیق کا حصہ ہیں جن کا مقصد طالب علموں/بچوں کے مسائل اور اس کے نتیجے میں پیدا ہونے والے ذہنی دباؤ کا مطالعہ کرنا ہے تا کہ ان سے نمٹنے کے طریقوں اور وقت کی منصوبہ بندی کی نشاندہی کی جا سکے۔ آپ سے درخواست ہے کہ تمام ہدایات کو غور سے پڑھیں اور پوری سچائی اور ایمانداری سے وہ جواب دیں جو آپ کے تجربات اور کیفیات کی صحیح ترجمانی کرتا ہو۔ مہربانی فرما کر اس بات کا خیال رکھیں کہ کوئی بھی سوال بغیر جواب کے نہ رہے۔ ہم آپ کو یقین دلاتے ہیں کہ آپ سے حاصل کی گئی معلومات صرف تحقیقاتی مقاصد کی لیے استعمال کی جائیں گی۔ آپ کے اس تعاون پر ہم آپ کے تہہ دل سے شکر گزار ہیں۔

برائے مہربانی درج ذیل معلومات فراہم کر دیں۔

نام:

عمر:

جنس: لڑکا/لڑکی

جماعت:

گھریلو آمدن:

گھر میں ملازمت شدہ افراد کی تعداد:

بہن بھائیوں کی تعداد:

بہن بھائیوں میں آپ کا نمبر:

خاندانی نظام: مشترکہ/الگ

Appendix B

Focus Group Guide

Focus Group Guide for Adolescents

1	آپ کے خیال میں تکلیف دہ واقعہ کیا ہوتا ہے؟
2	کچھ ایسے واقعات بتائیں جو ہمارے ملک/معاشرے میں تکلیف دہ تصور کیے جاتے ہیں؟
3.	کیا آپ کبھی خود کسی تکلیف دہ واقع کا شکار ہوئے ہیں؟
4	کیا آپ نے کبھی کسی دوسرے کو کسی تکلیف دہ واقعہ سے گزرتے دیکھا ہے؟
5	اُن واقعات کی نوعیت کیا تھی؟

Focus Group Guide for Parents

1	آپ کے خیال میں تکلیف دہ واقعہ کیا ہوتا ہے؟
2	کچھ ایسے واقعات بتائیں جو ہمارے ملک/معاشرے میں بچوں کے لیے تکلیف دہ تصور کیے جاتے ہیں؟
3	کیا آپ کا بچہ کبھی کسی تکلیف دہ واقع کا شکار ہوا ہے؟
4	کیا آپ نے کبھی کسی دوسرے کے بچے کو تکلیف دہ واقعہ سے گزرتے دیکھا ہے؟
5	اُن واقعات کی نوعیت کیا تھی؟

Focus Group Guide for Teachers

1	آپ کے خیال میں تکلیف دہ واقعہ کیا ہوتا ہے؟
2	کچھ ایسے واقعات بتائیں جو ہمارے ملک/معاشرے میں بچوں کے لیے تکلیف دہ تصور کیے جاتے ہیں؟
3	کیا آپ کا طالب علم کبھی کسی تکلیف دہ واقع کا شکار ہوا ہے؟
4	کیا آپ نے کبھی کسی اور طالب علم کو تکلیف دہ واقعہ سے گزرتے دیکھا ہے؟
5	اُن واقعات کی نوعیت کیا تھی؟

Appendix C

زندگی کے ناگوار واقعات کا پیمانہ

ہدایات:

اگر آپ کی زندگی میں پچھلے بارہ ماہ کے دوران نیچے دیئے گئے واقعات میں سے کوئی ایک یا ایک سے زیادہ واقعات پیش آئے ہیں اور انہوں نے آپ کی زندگی پر نا خوشگوار اثرات چھوڑے ہیں تو برائے مہربانی ''ہاں'' کے سامنے (✓) کا نشان لگائیں اور پھر آگے دیے گئے جوابات (بہت زیادہ۔کافی حد تک۔کسی حد تک۔بالکل نہیں) میں سے کسی ایک کو (✓) کریں جس حد تک آپ اس واقعے کی وجہ سے ذہنی تناؤ کا شکار ہوئے۔

شکریہ

				جس حد تک آپ ذہنی تناؤ کا شکار ہوئے			
نمبر شمار	واقعہ	ہاں	نہیں	بہت زیادہ	کافی حد تک	کسی حد تک	بالکل نہیں
	صحت						
۱	کوئی بڑی جسمانی بیماری/نقصان						
۲	کسی حادثے کا شکار ہوئی/ہوا						
۳	کوئی جسمانی معذوری						
۴	کوئی ذہنی معذوری						
	سکول						
۵	سکول جانے کی ابتدا ہوئی						
۶	سکول تبدیل ہوا						
۷	اپنی مرضی کے خلاف مضامین کا انتخاب کیا						
۸	مضامین تبدیل کئے						
۹	پڑھائی میں کارکردگی بری رہی						
۱۰	کسی مضمون میں فیل ہوئے						
۱۱	کسی کلاس میں فیل ہوئے						
۱۲	ساتھی طلباء کے ساتھ کوئی چپقلش/لڑائی						
۱۳	استاد کی طرف سے بدسلوکی/جسمانی تشدد						
۱۴	سکول سے نکال دیے گئے						

	رہائش						
۱۵	گھر تبدیل کیا						
۱۶	نئے گھر کی تلاش میں مشکلات						
۱۷	کرائے کا مکان						
۱۸	پڑوس میں کوئی نمایاں تبدیلی یا مسائل						
۱۹	پسماندہ علاقے میں رہائش						
	ذاتی اور سماجی						
۲۰	بلوغت کے دوران جسمانی تبدیلیاں						
۲۱	حیض/ماہواری						
۲۲	احتلام ہوا						
۲۳	جسمانی خدوخال سے غیر مطمئن (وزن قد، رنگت، وغیرہ)						
۲۴	کسی کے ساتھ کوئی رومانوی تعلق استوار کیا						
۲۵	نسبت (منگنی) طے ہوئی						
۲۶	رومانوی ساتھی کے ساتھ تعلقات میں کشمکش/اختلافات						
۲۷	رومانوی ساتھی کے ساتھ تعلق ٹوٹ گیا						
۲۸	قریبی دوست کے ساتھ تعلقات میں کشمکش/اختلافات						
۲۹	قریبی دوست کے ساتھ تعلق ٹوٹ گیا						
۳۰	ماں یا باپ کے تبادلے کی وجہ سے دوستوں کو چھوڑنا پڑا						
۳۱	شادی ہوئی						
۳۲	جنسی طور پر ہراساں کیے گئے						
۳۳	سگریٹ/شیشہ پینا شروع کیا						
۳۴	نشہ کرنا شروع کیا						
۳۵	جنسی تشدد/زیادتی کا نشانہ بنے						
۳۶	ہم جنس پرستی میں ملوث رہے						
۳۷	ماں باپ کی طرف سے گھریلو/جسمانی تشدد کا نشانہ بنے						
۳۸	گھر سے بھاگ گئے						
۳۹	اغواء ہوئے						

۴۰	خودکشی کا خیال آیا						
۴۱	خودکشی کی کوشش کی						
۴۲	کسی پر تشدد کاروائی کا نشانہ بنے						
۴۳	مذہبی اختلافات کا شکار ہوئے						
۴۴	آپ کی چوری ہوئی رڈکیتی کا نشانہ بنے						
۴۵	جانے انجانے کسی سماج دشمن گروہ کا حصہ رہے						
۴۶	کسی حادثے میں ملوث ہوئے						
۴۷	قانون کی خلاف ورزی میں ملوث ہوئے						
۴۸	کسی ایسی قانونی مشکلات کا شکار ہوئے جس کی وجہ سے گرفتار ہوئے یا جیل جانا پڑا						
	خاندان رقریبی دوست						
۴۹	گھر کے سربراہ کے کاروبار میں نقصان ہوا						
۵۰	گھر کے سربراہ کی ملازمت چھوٹ گئی						
۵۱	گھر کے سربراہ کو نئی ملازمت ڈھونڈنے میں مشکلات پیش آئیں						
۵۲	گھر کے سربراہ کے کام کی نوعیت میں کوئی ناگوار تبدیلی ہوئی						
۵۳	گھر کے سربراہ کے کام کرنے کے اوقات رشرائط میں کوئی ناگوار تبدیلی						
۵۴	گھر کے سربراہ کی ساتھی ملازموں کے ساتھ کوئی کشمکش رتنازعہ رلڑائی						
۵۵	گھر کا سربراہ ملازمت کی جگہ پر بدسلوکی کا شکار ہوئے						
۵۶	گھر کے کسی فرد کو گھر چھوڑنا پڑا (شادی رسکول رکالج رہاسٹل کی وجہ سے)						
۵۷	خاندان کے کسی فرد رودوست کو کوئی شدید جسمانی بیماری						
۵۸	خاندان کے کسی فرد رودوست کو کوئی ذہنی بیماری						
۵۹	خاندان کا کوئی فرد رودوست ذہنی معذوری کا شکار ہوا						
۶۰	خاندان کا کوئی فرد رودوست جسمانی معذوری کا شکار ہوا						

۶۱	خاندان کے کسی فرد/دوست کو کوئی حادثہ پیش آیا						
۶۲	بستر سے لگا ہوا خاندان کا کوئی فرد (کسی بیماری /معذوری/بڑھاپے کی وجہ سے)						
۶۳	ماں یا باپ کا انتقال ہوا						
۶۴	خاندان کے کسی اور فرد کا انتقال ہوا						
۶۵	کسی دوست کا انتقال ہوا						
۶۶	ماں/باپ کے ساتھ کوئی نمایاں اختلاف/کشمکش						
۶۷	ماں/باپ نے الگ الگ رہائش اختیار کی						
۶۸	ماں/باپ کے درمیان طلاق ہوئی						
۶۹	ماں یا باپ کا کسی غیر کے ساتھ کوئی ناجائز چکر/تعلق						
۷۰	سوتیلے ماں یا باپ کی آمد						
۷۱	بڑے بہن/بھائی کی شادی میں رکاوٹ/مشکلات						
۷۲	شادی شدہ بہن بھائیوں کی ازدواجی پریشانیاں/مشکلات						
۷۳	شادی شدہ بہن بھائیوں میں سے کسی کی طلاق						
۷۴	خاندان کا کوئی فرد/دوست اغوا ہوا						
۷۵	خاندان کے کسی فرد/دوست کا قتل ہوا						
۷۶	خاندان کا کوئی فرد/دوست کسی کے قتل/حادثے میں ملوث رہا						
۷۷	خاندان کا کوئی فرد/دوست کسی غیر قانونی کام میں ملوث رہا (مثلاً چوری، زیادتی، جوا، اغوا وغیرہ)						
۷۸	خاندان کا کوئی فرد/دوست نشے کا عادی ہوا						
۷۹	خاندان کے کسی فرد/دوست کا کسی سماج دشمن گروہ سے تعلق رہا						
۸۰	خاندان کا کوئی فرد/دوست گرفتار ہوا/جیل گیا						
۸۱	خاندان کا کوئی فرد/دوست دہشت گردی کا نشانہ بنا						

	قدرتی آفات						
۸۲	خاندان کا کوئی فرد/دوست زلزلے سے متاثر ہوا						
۸۳	خاندان کا کوئی فرد/دوست زلزلے سے فوت ہوا						
۸۴	خاندان کا کوئی فرد/دوست سیلاب سے متاثر ہوا						
۸۵	خاندان کا کوئی فرد/دوست سیلاب سے فوت ہوا						
	کوئی اور واقعہ						
۸۶							
۸۷							

Appendix D

School Children Problem Scale

ہدایات: ذیل میں چند مسائل کا ذکر ہے جو عام طور پر سکول کے بچوں کو درپیش ہوتے ہیں۔ آپ ہر مسئلے کو غور سے پڑھیں اور بتائیں کہ یہ مسئلہ آپ کے لیئے کس حد تک پریشانی کا باعث ہے۔ یہ بتانے کے لیئے کبھی نہیں، بہت کم، بعض اوقات، اکثر میں سے کسی ایک پر (✓) کا نشان لگائیں۔ ہر سوال کا جواب دینا لازمی ہے۔

	۱	چھوٹی چھوٹی باتوں پر غصہ آنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۲	گالیاں دینا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۳	پڑھائی میں دل نہ لگنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۴	چکر آنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۵	کلاس میں اونچا بولنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۶	ڈرپوک ہونا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۷	محسوس کرنا کہ کوئی مجھے پیار نہیں کرتا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۸	ہر وقت شرارتیں کرنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۹	سکول کا کام بوجھ لگنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۱۰	کلاس کے دوران باتیں کرنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۱۱	غصے سے چیزیں اٹھا کر پھینکنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۱۲	کلاس میں شور کرنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۱۳	والدین کا دوسرے بہن بھائیوں کو زیادہ پیار کرنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۱۴	محسوس کرنا کہ سب مجھ سے نفرت کرتے ہیں۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۱۵	پیٹ میں درد ہونا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۱۶	پڑھائی سے دل اچاٹ ہونا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۱۷	کسی کی بات نہ سننا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۱۸	اپنے آپ کو دوسروں سے کمتر سمجھنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۱۹	ہر وقت گھبرائے ہوئے رہنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۲۰	کوئی کام شروع کرنے سے ڈرنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۲۱	سبق یاد نہ کر پانا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۲۲	والدین کی طرف سے توجہ نہ ملنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر

	۲۳	دوستوں سے ملنے کو دل نہ چاہنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۲۴	دل گھبرانا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۲۵	کوئی کام شروع کر کے مکمل نہ کر پانا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۲۶	پیچھے پیچھے رہنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۲۷	بلاوجہ پریشان ہونا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۲۸	ادھر ادھر کی سوچیں آنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۲۹	جسم میں کھچاؤ محسوس کرنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۳۰	یک جگہ بیٹھے رہنے کو دل کرنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۳۱	ہر وقت دھڑکا لگا رہنا کہ کہیں کچھ ہو نہ جائے۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۳۲	چھوٹے چھوٹے کاموں پر بھی توجہ نہ دے سکنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۳۳	غصے کا اظہار نہ کر پانا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۳۴	کسی سے بات کرنے کو دل نہ کرنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۳۵	اپنی بات کسی سے کہہ نہ سکنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۳۶	کوئی کام سنجیدگی سے نہ کرنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۳۷	چڑچڑا پن۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۳۸	کسی کے سامنے بات نہ کر سکنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۳۹	اپنی بات کسی کو سمجھا نہ سکنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۴۰	گھر میں پڑھائی کا ماحول نہ ہونا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۴۱	خاموش رہنے کو دل کرنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۴۲	فیل ہونے سے ڈرنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۴۳	کلاس میں حصہ نہ لینا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر
	۴۴	بہت زیادہ باتیں کرنا۔	کبھی نہیں	بہت کم	بعض اوقات	اکثر

Appendix E

Sajjad Verbal Intelligence Test Urdu

ہدایات:

عزیز بچو! آپ ذہانت کی آزمائش میں شریک ہوں گے۔اس آزمائش کے چار حصے ہیں۔حصہ اول الفاظ کے معانی پر مشتمل ہے،حصہ دوئم زبانی استدلال پر مشتمل ہے،حصہ سوئم عددی استدلال پر مشتمل ہے اور حصہ چہارم معلومات پر مشتمل ہے۔آپ ذہانت کی آزمائش کے ہر حصے کو حل کرنے سے قبل اس حصے میں دی گئی متعلقہ ہدایات غور سے پڑھیں اور ان پر سختی سے عمل کریں۔

حصہ اول

الفاظ کے معانی

ہدایات: عزیز بچو!اس ٹیسٹ میں آپ پہلے ہر لفظ کو غور سے پڑھیں۔ہر لفظ کے سامنے جوابات میں چار معنی دئے گئے ہیں۔آپ صرف درست معنی کو چنیں اور جوابی فارم پر ہر لفظ کے متعلقہ نمبر کے سامنے اس کے جوابی خانہ میں صرف ایک علامت (ا، ب، ج یا د) درج کریں یاد رکھیں ہر لفظ کا درست معنی صرف ایک ہی ہے۔

اس حصے کے لئے مقررہ وقت 12 منٹ ہے۔

نمبر شمار	الفاظ	ا	ب	ج	د
1	مُتروک	مشترک	ترک کیا ہوا	پاک	مبارک
2	تَلافی	معافی	تلف کرنا	نقصان کا عوض	فدیہ
3	وَصف	طریقہ	درمیان	وقف	خوبی
4	محقق	حقدار	پرہیز گار	لکھنے والا	تحقیق کرنے والا
5	تَعافُل	لاپتہ	فکر	بے پرواہی	اعتبار
6	طِفل	چاند	بچہ	تالا	چھوٹا
7	مصور	تصور کرنے والا	مطلوب	تصویر بنانے والا	تخلیق کار
8	مُتعبر	تبدیل شدہ	غیر	متبادل	بے ترتیب
9	حُرمَت	حرکت	عزت	تکلیف	بے عزتی
10	دائمی	پرانی	عارضی	ابدی	دوسری
11	تحقیر	جستجو	مذمت	کم ظرف	حقارت
12	مُحرک	تحریک کرنے والا	وجہ	مہلک	معلق
13	رقابت	ملاپ	محبت میں شرکت	رفاقت	بندگی

14	داروغہ	جلاد	دعا گو	محافظ	قصہ گو
15	وثوق	ذریعہ	جلدی	ورثہ	اعتماد
16	نامُوس	ختم	ناخوش	مایوس	عزت
17	مانع	مضر	مطلب	منع کرنے والا	مانند
نمبر شمار	الفاظ	ا	ب	ج	د
18	سڈول	متواتر	خوبصورت	بڈھال	زخمی
19	دقیق	مشکل	دوست	حقارت	کم
20	مَنع	تنبیہہ	طبیعت	نصیحت	نکلنے کی جگہ
21	پھبتی	تحریک	پاگل	طنز	الزام
22	بے اِعتنائی	بے گناہی	بے پراوہی	اجنبی	بے صبری
23	مُجاور	خادم	جامع	مجازی	جادو
24	نُمود	پرورش	صبح	تباہ	نمائش
25	گزند	راہ گیر	گزارنا	نقصان	غلطی
26	سَمُوم	معصوم	گرم ہوا	موسم	سونا
27	عِرَد	درخت	خوراک	دھوکا	عقل
28	فریفتہ	زمہ داری	دھوکے باز	فریضہ	عاشق
29	معدَوم	معذور	اداس	ناپید	شرمندہ
30	نشاط	نشست	خوشی	حیرت	نشہ
31	صَریخ	صاف	لمباقد	معمولی	مشکل
32	بلوہ	ہنگامہ	بلانا	نظارہ	فتح
33	نَخل	ویرانہ	درخت	نخرہ	ریگستان
34	قباحت	نفرت	اکتانا	برائی	بے وقوفی
35	مَنعطف	دفن شدہ	متعصب	تعارف	بدبودار
36	خَفیف	چھپا ہوا	ڈر	تھوڑا	کنجوس
37	حَقیر	کم ظرف	چھوٹا	کمزور	عاجز
38	ڈھنڈورا	تشہیر	تلاش	شور	قاصد
39	اَستقلال	صبر	بہادری	مضبوطی	میانہ روی

40	اَدراک	موقع	فہم	خاتمہ	بچنا
41	فِروتنی	عاجزی	فراوانی	زیادتی	ضروری
42	ہؤیدا	راز	واضح	ہوادار	حیران

زبانی استدلال

ہدایات: عزیز بچو! اس ٹیسٹ میں شامل ہر جملے کو غور سے پڑھیں۔ ہر جملے میں موجود دو جوڑوں کو اس طرح نامکمل رکھا گیا ہے تا کہ آپ کے دیئے گئے جواب کا پہلا حصہ پہلے جوڑے کے پہلے حصے کو مکمل کرنے اور دوسرا حصہ دوسرے جوڑے کے آخری حصے کو مکمل کرے۔ آپ کا جواب ا، ب، ج، یا د صرف ایک علامت ہونا چاہیے۔ جو آپ جوابی فارم پر جوابی خانے میں درج کریں گے۔

اس حصے کے لئے مقررہ وقت 6 منٹ ہے۔

نمبر شمار	جملے	ا	ب	ج	د
1	---کا پچھلے سے وہی تعلق ہے جو اوپر کا تعلق ---سے ہے	آگے ۔ نیچے	ہار ۔ جیت	آہستہ ۔ تیز	دائیں ۔ بائیں
2	---کا پھیپھڑے سے وہی تعلق ہے جو دل کا تعلق ---سے ہے	ہوا ۔ پانی	ہوا ۔ خون	جسم ۔ جان	ہوا ۔ دماغ
3	---کا بیڈ سے وہی تعلق ہے جو کرسی کا تعلق ---سے ہے	ہسپتال ۔ سکول	ہسپتال ۔ سٹیشن	ہسپتال ۔ ڈاکٹر	ڈاکٹر ۔ استاد
4	---کا انسان سے وہی تعلق ہے جو ساحل کا تعلق ---سے ہے	پاؤں ۔ جوتا	پاؤں ۔ گھوڑا	کام ۔ لوھار	لوھا ۔ گھوڑا
5	---کا دریا سے وہی تعلق ہے جو ساحل کا تعلق ---سے ہے۔	سیلاب ۔ ریت	کنارہ ۔ سمندر	موج ۔ سمندر	موج ۔ کنارہ
6	---کا جیل سے وہی تعلق ہے جو ہسپتال کا تعلق ---سے ہے	قید ۔ مریض	قیدی ۔ مریض	مجرم ۔ ڈاکٹر	قید ۔ وارڈ
7	---کا مستقبل سے وہی تعلق ہے جو پچھتاوے کا تعلق ---سے ہے	آگے ۔ پیچھے	امید ۔ اندازہ	امید ۔ ماضی	آئندہ ۔ گزشتہ
8	---کا ڈاکٹر سے وہی تعلق ہے جو ملزم کا تعلق ---سے ہے	نرس ۔ وکیل	مریض ۔ عدالت	نرس ۔ عدالت	مریض ۔ وکیل
9	---کا سائنس سے وہی تعلق ہے جو ملزم کا تعلق ---سے ہے	عبدالسلام ۔ شاعری	اقبال ۔ مصوری	عبدالسلام ۔ مصوری	اقبال ۔ شاعری
10	---کا ریل گاڑی سے وہی تعلق ہے جو بندرگاہ کا تعلق ---سے ہے	انجن ۔ بحری جہاز	سٹیشن ۔ ساحل	انجن ۔ ساحل	سٹیشن ۔ بحری جہاز
11	---کا فاصلے سے وہی تعلق ہے جو بندرگاہ کا تعلق ---سے ہے	میٹر ۔ بجلی	منزل ۔ وزن	میٹر ۔ وزن	منزل ۔ راستہ
12	---کا جملے سے وہی تعلق ہے جو جملے کا تعلق ---سے ہے	لفظ ۔ پیرا	لفظ ۔ جملہ	پیرا ۔ لفظ	لفظ ۔ حرف
13	---کا گائے سے وہی تعلق ہے جو مرغی کا تعلق ---سے ہے	گوشت ۔ انڈہ	دودھ ۔ مرغا	دودھ ۔ انڈہ	بیل ۔ انڈہ
14	---کا جھیل سے وہی تعلق ہے جو جنگل کا تعلق ---سے ہے	جانور ۔ گھاس	پانی ۔ جانور	بیج ۔ درخت	پانی ۔ درخت
15	---کا زنجیر سے وہی تعلق ہے جو موتی کا تعلق ---سے ہے	کڑی ۔ ہار	پہاڑ ۔ ہار	لوہا ۔ کڑی	گھڑی ۔ ہار
16	---کا آواز سے وہی تعلق ہے جو اندھے کا تعلق ---سے ہے	کان ۔ نظر	بہرہ ۔ گونگا	کان ۔ اندھیرہ	بہرہ ۔ نظر
17	---کا بارہ سے وہی تعلق ہے جو دو کا تعلق ---سے ہے	چودہ ۔ ایک	نو ۔ تین	نو ۔ چھ	چار ۔ چھ

18	---کا حال سے وہی تعلق ہے جو دھار کا تعلق ---سے ہے	مستقبل ۔ ماضی	مستقبل ۔ حال	ماضی ۔ نقد	مستقبل ۔ نقد
19	---کا دن سے وہی تعلق ہے جو کیلینڈر کا تعلق ---سے ہے	گھڑی ۔ سال	رات ۔ سال	چاند ۔ سال	سورج ۔ سال
20	---کا چوٹی سے وہی تعلق ہے جو لہر کا تعلق ---سے ہے	پہاڑ ۔ گہرائی	اوپر ۔ تل	اونچائی ۔ گہرائی	اوپر ۔ پانی

حصہ سوئم

عددی استدلال

ہدایات: عزیز بچو! آپ پہلے ہر سوال غور سے پڑھیں۔ ہر سوال کے چار جوابات دئے گئے ہیں۔ آپ جوابات میں سے صرف درست جواب کو چنیں اور جوابی فارم پر ہر سوال کے متعلقہ نمبر کے سامنے اس کے جوابی خانہ میں صرف ایک علامت (ا، ب، ج، د) درج کریں۔ یاد رکھیں ہر سوال کا درست جواب صرف ایک ہی ہے۔

اس حصے کے لئے مقررہ وقت 16 منٹ ہے۔

نمبر شمار	سوالات	ا	ب	ج	د
1	3 سال پہلے اکبر 5 سال کا تھا اور اس کی بہن 8 سال کی تھی اکبر کی موجودہ عمر کتنے سال ہے؟	5	6	7	8
2	اگلا عدد بتائیں 2, 8, 4, 8, 6, 8,.....	6	7	8	9
3	اگر ایک انڈہ 5 منٹ میں ابلے تو اکھٹے 5 انڈے کتنے منٹ میں ابلیں گے؟	10	5	20	25
4	اگلا عدد بتائیں 66, 70, 74, 78,.....	82	84	80	86
5	اگلا عدد بتائیں 4, 8, 16, 32, ...	64	63	62	60
6	اگلا عدد بتائیں 1, 2, 2, 3, 3, 4, ...	3	4	5	6
7	اگر احمد، علی سے آہستہ چلے، طاہر، علی کے برابر چلے تو کون سب سے آہستہ چلے گا؟	طاہر	علی	احمد	کوئی نہیں
8	کس عدد کو 12 میں جمع کیا جائے کہ 9 کا دگنا ہو جائے گا؟	2	4	8	6
9	اگلا جوڑا مکمل کریں (10, 20) (10, 25) (10, ...)	30	35	40	45
10	اگلا جوڑا مکمل کریں (3,3) (3, 9) (3, ...)	21	27	25	23
11	حل بتائیں 2 سال 8 ماہ 30 دن + 3 سال 3 ماہ 10 دن =.....	4 سال	5 سال	6 سال	7 سال
12	اگلا جوڑا مکمل کریں (3, 21) (6, 42) (9, ...)	21	72	42	63
13	احمد 44 سال کی عمر میں موجودہ عمر سے 4 گنا زیادہ ہوگا تو احمد کی موجودہ عمر کتنے سال ہوگی؟	40	33	22	11

14	حل بتائیں 2 - 2 x 2 + 2% = ...	0	1	2	4
15	اگر بابر، اسلم سے چھوٹا ہو، احمد، بابر سے بڑا ہو اور اسلم، احمد سے چھوٹا ہے۔ تو سب سے بڑا کون ہوگا؟	بابر	احمد	اسلم	کوئی نہیں
16	24 کا 25% کیا ہوگا؟	6	12	24	25
نمبر شمار	سوالات	ا	ب	ج	د
17	اگلا عدد بتائیں 6, 8 7, 8, 7, 6	7	5	9	3
18	اگلا عدد بتائیں 4, 5, 7, 6, 8	6	9	8	7
19	اگر ایک ڈرائیور 120 کلومیٹر فی گھنٹہ کی رفتار سے گاڑی چلائے تو 30 کلومیٹر کا فاصلہ کتنے منٹ میں طے کرے گا؟	10	30	15	35
20	اگر گزرے ہوئے پرسوں 9 تاریخ تھی تو آنے والے پرسوں کونسی تاریخ ہوگی؟	9	11	15	13
21	اگلا عدد بتائیں 3, 4, 2, 5, 1, 6, ...	4	1	2	3
22	حل بتائیں 4/3 x 3/4 =.....	0	3	1	4
23	حل بتائیں .5 x .05 = ...	.05	.025	.25	.0025
24	مساوات مکمل کریں 77/..... = 11/5	35	30	7	5
25	حل بتائیں 3/6 + 2/4 =.....	1	2	3	4
26	اگر ا =2 ، د = 3 ، ر =4 اور ک = 5 تو لفظ ادراک میں شامل حروف کے اعداد کا مجموعہ بتائیں؟	14	16	18	20
27	اگلا عدد بتائیں 15, 75, 375.....	5	4	3	6
28	اگر 2=2، 3=6، 4=12 تو 5=.....	16	18	20	22
29	اگر 5 برابر ہو 2 کے تو غ کس کے برابر ہوگا؟	ع	ظ	ف	ط
30	خالی حصہ مکمل کریں (40,....., 6) (25, 20, 5)	33	35	34	36
31	اگلا عدد بتائیں 8ب 6ت 4ث.....	1	2	3	4
32	15 کس عدد کا 75% ہوگا؟	20	5	15	75
33	اگر باپ کو حروف تہجی کی ترتیب میں لکھیں تو درمیانی حرف کونسا ہوگا؟	ب	ا	پ	ت
34	کس عدد کو 12 سے نکالا جائے تو 21 کا تیسرا حصہ حاصل ہوگا؟	3	5	7	9
35	حل بتائیں .09=....	.03	.9	.3	.09

36	اسلم کے پاس نوید سے ایک تہائی اور احمد سے دوگنی رقم ہے۔اگر نوید کے پاس بارہ روپے ہوں تو احمد کے پاس کتنے روپے ہوں گے؟	8	6	4	2

حصہ چہارم

مَعلُومات

ہدایات: عزیز بچو! آپ معلومات عامہ سے متعلق ایک سوالنامہ حل کریں۔اس سوالنامہ میں آپ پہلے ہر سوال کو غور سے پڑھیں۔ہر سوال کے ساتھ دئے گئے چار جوابات میں سے صرف درست جواب کو چنیں اور جوابی فارم پر ہر سوال کے متعلقہ نمبر کے سامنے اس کے جوابی خانہ میں صرف ایک علامت (ا، ب، ج، یا د) درج کریں۔یاد رکھیں ہر سوال کا درست جواب صرف ایک ہی ہے۔

اس حصے کے لئے مقررہ وقت 6 منٹ ہے۔

نمبر شمار	سوالات	ا	ب	ج	د
1	کھیلوں کے سامان کے لئے پاکستان کا کون سا شہر مشہور ہے۔	سیالکوٹ	کراچی	پشاور	لاہور
2	پاکستان کی قومی زبان کون سی ہے؟	سندھی	اردو	پنجابی	پشتو
3	قرآن مجید کی سورتوں کی کل تعداد بتائیں؟	100	112	114	116
4	پاکستان کا قومی ترانہ کس شاعر نے لکھا ہے؟	علامہ اقبال	فیض احمد فیض	احمد فراز	حفیظ جالندھری
5	خلفاءِ راشدین کی کل تعداد کتنی ہے؟	2	3	4	5
6	بالِ جبریل کس کی لکھی ہوئی کتاب ہے؟	علامہ شبلی	علامہ اقبال	علامہ مجلسی	علامہ مشرقی
7	کششِ ثقل کی وجہ سے اشیاء کس سمت میں حرکت کرتی ہیں؟	نیچے	اوپر	دائیں	بائیں
8	پاکستان کا دل کس شہر کو کہتے ہیں؟	پشاور	لاہور	اسلام آباد	کراچی
9	پاکستان کے پہلے گورنر جنرل کا نام کیا تھا؟	ماونٹ بیٹن	سرسید احمد خان	محمد علی جناح	لیاقت علی خان
10	پاکستان کا قومی پھول کون سا ہے؟	گلاب	کنول	سورج مکھی	چنبیلی
11	عراق کا دارالخلافہ کون سا شہر ہے؟	دمشق	تہران	بغداد	قاہرہ
12	مزدوروں کا عالمی دن کس تاریخ کو منایا جاتا ہے؟	یکم جون	یکم مئی	یکم اپریل	یکم جنوری
13	پاکستان اور بھارت کے معیاری وقت میں کتنے منٹ کا فرق ہے؟	30	20	15	35

14	انسان کے بنیادی حواس کی کل تعداد کتنی ہے؟	3	5	7	9
15	سپریم کورٹ آف پاکستان کس شہر میں واقع ہے؟	کراچی	لاہور	اسلام آباد	راولپنڈی
16	حجر اسود کس رنگ کا پتھر ہے؟	سفید	سرخ	سبز	سیاہ
نمبر شمار	سوالات	ا	ب	ج	د
17	انجیل مقدس کس نبی پر نازل ہوئی؟	حضرت موسیٰ	حضرت یوسف	حضرت عیسیٰ	حضرت ہارون
18	کون سی گیس خون کو صاف کرتی ہے؟	ہائیڈروجن	آکسیجن	نائیٹروجن	کلورین
19	پاکستان کے کس سائنسدان کو نوبل انعام ملا؟	عبدالسلام	منیر احمد خان	سلیم الزمان	عبدالقدیر خان
20	نشان حیدر کا فوجی اعزاز اب تک کتنے شہداء کو مل چکا ہے؟	6	10	8	12
21	پاکستان کا مکمل متفقہ آئین کس سال بنا؟	1954	1956	1973	1971
22	پاکستان کی مشرقی سرحد میں واقع ملک کا نام کیا ہے؟	افغانستان	ایران	چین	بھارت
23	حج اصغر کسے کہتے ہیں؟	نماز	زکوٰۃ	عمرہ	روزہ
24	پاکستان کی سب سے بڑی مسجد کون سی ہے؟	بادشاہی مسجد	فیصل مسجد	مسجد وزیر خان	مسجد مہابت خان
25	ایٹمی طاقت حاصل کرنے والے ممالک میں پاکستان کس نمبر پر ہے؟	7	5	8	6
26	منگلا ڈیم کس دریا پر بنایا گیا ہے؟	سندھ	جہلم	ستلج	راوی
27	بہت بلندی پر آکسیجن کی مقدار میں کیا تبدیلی ہوتی ہے؟	کمی	اضافہ	بہت کمی	بہت اضافہ
28	مٹی سے بنے ہوئے دنیا کے سب سے بڑے ڈیم کا نام کیا ہے؟	راول ڈیم	منگلا ڈیم	سہلی ڈیم	تربیلا ڈیم
29	صحت مند آدمی کا درجہ حرارت کتنے فارن ہائیٹ ہوتا ہے؟	98.5	98.7	98.6	98.8
30	اردو زبان میں شامل حروف کی کل تعداد کتنی ہے؟	39	37	35	33

Standard
Progressive Matrices

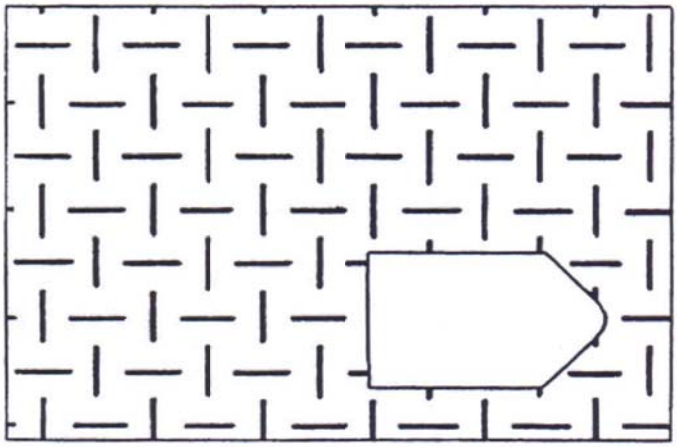
Sets A, B, C, D, and E

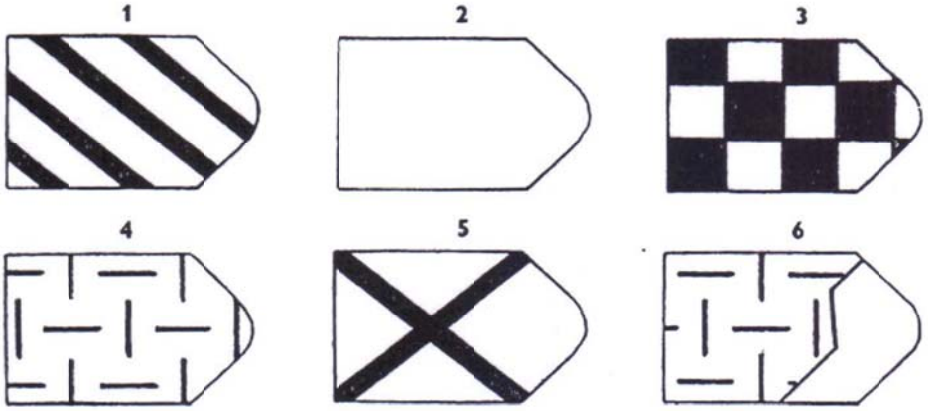
Prepared by: J. C. Raven, M. Sc.

Published by H. K. Lewis & Co., Ltd., London,

SET A

A1





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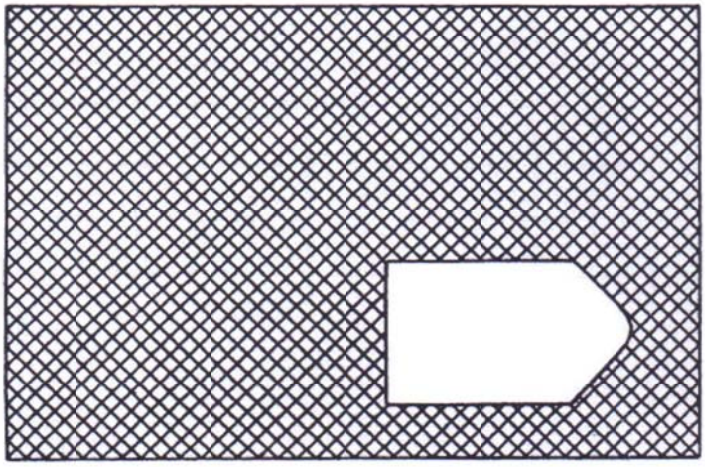
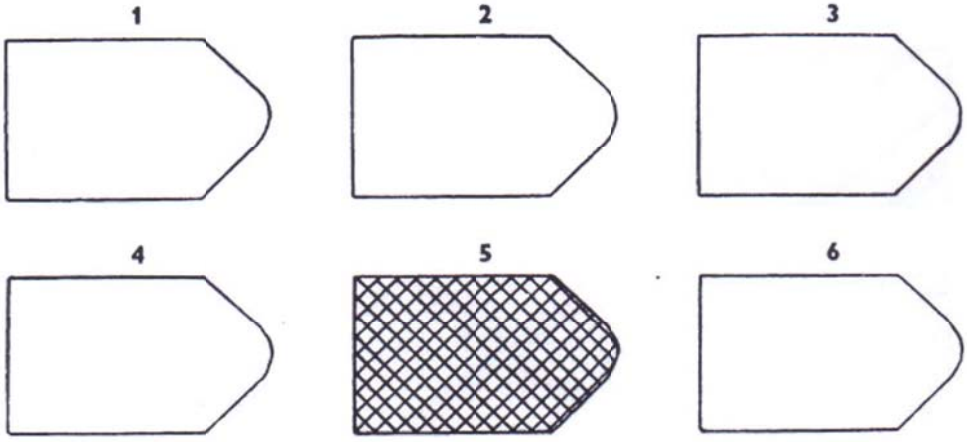
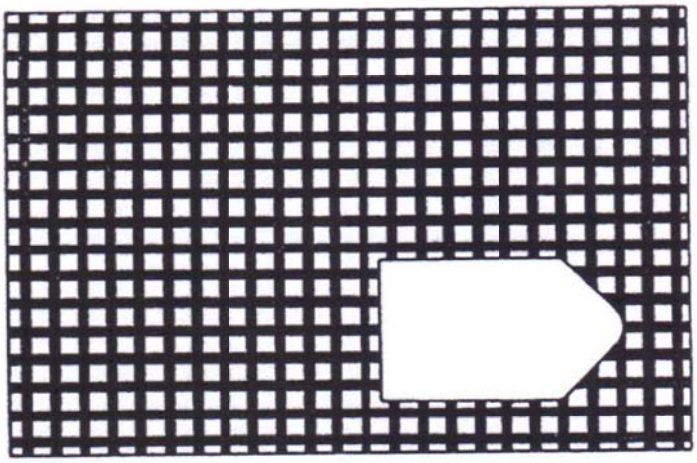
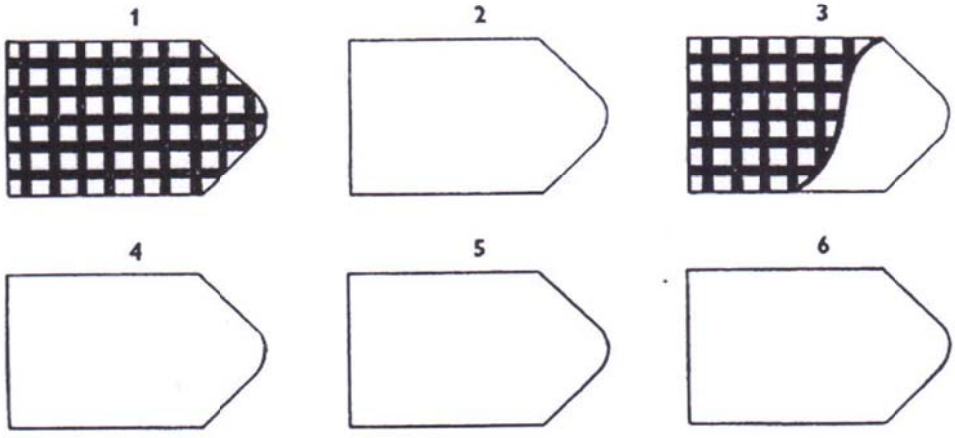




A 3





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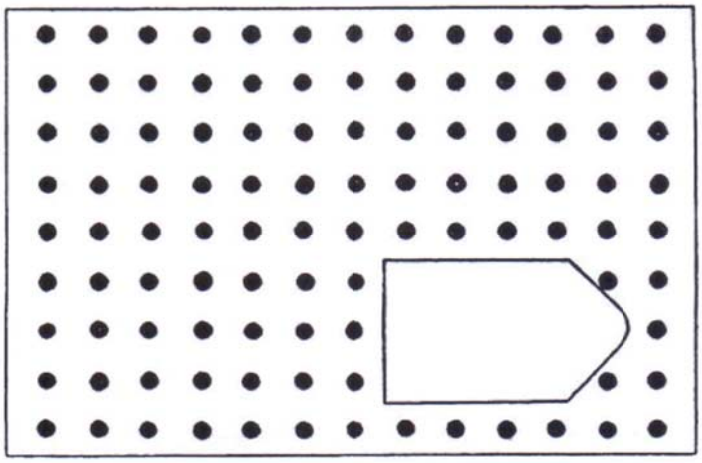
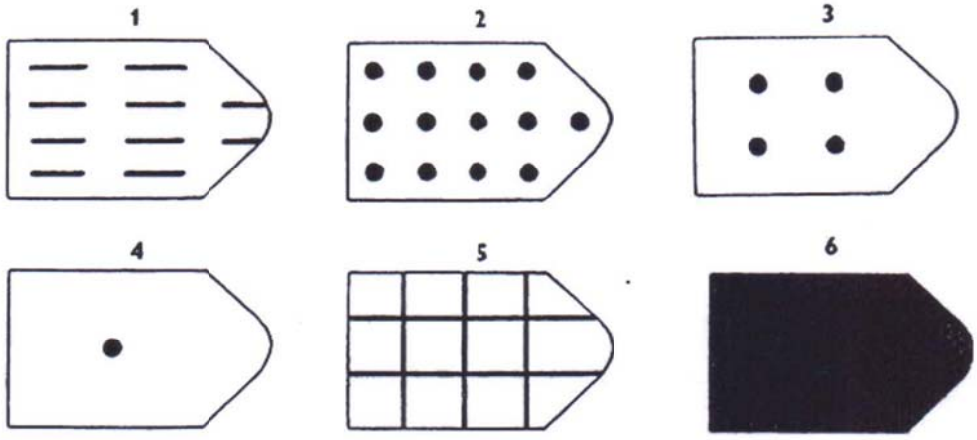
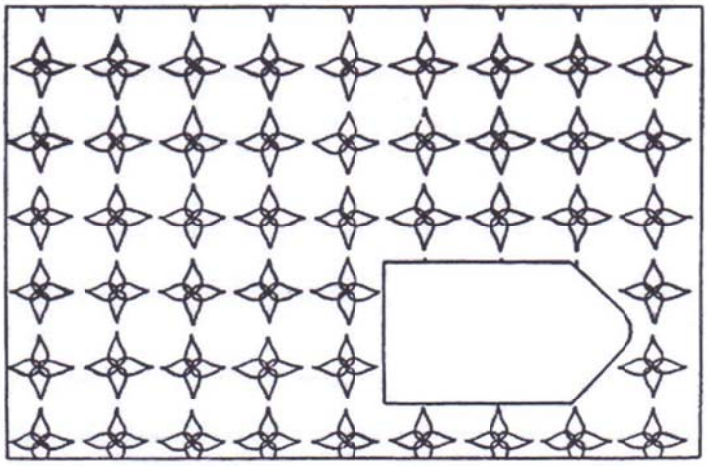
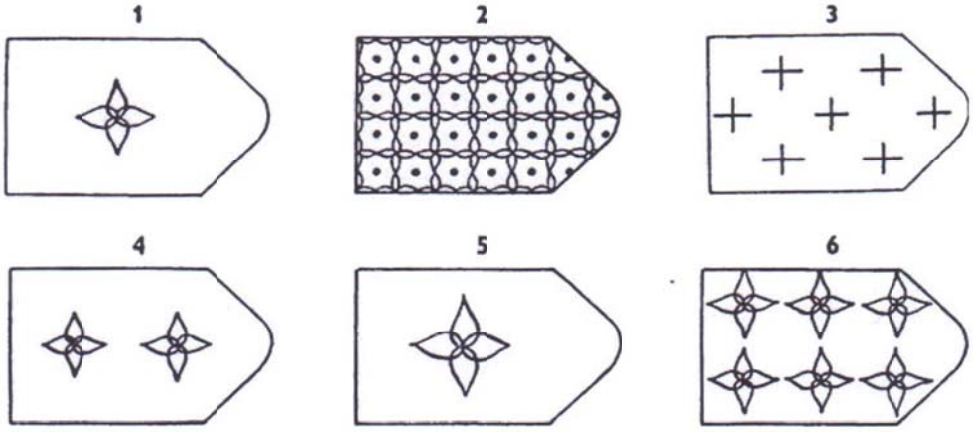




A 5





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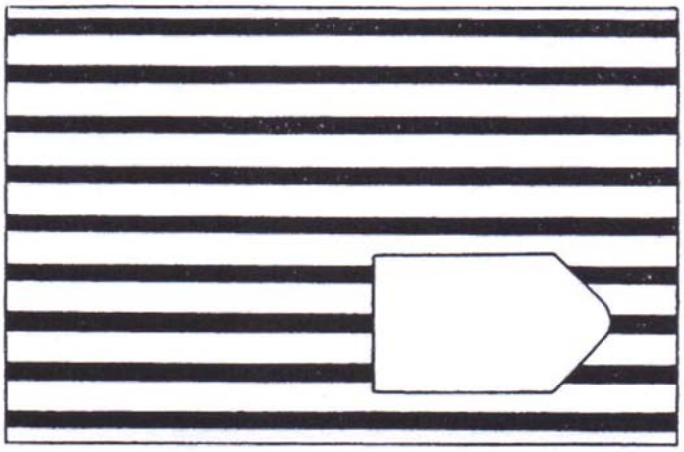

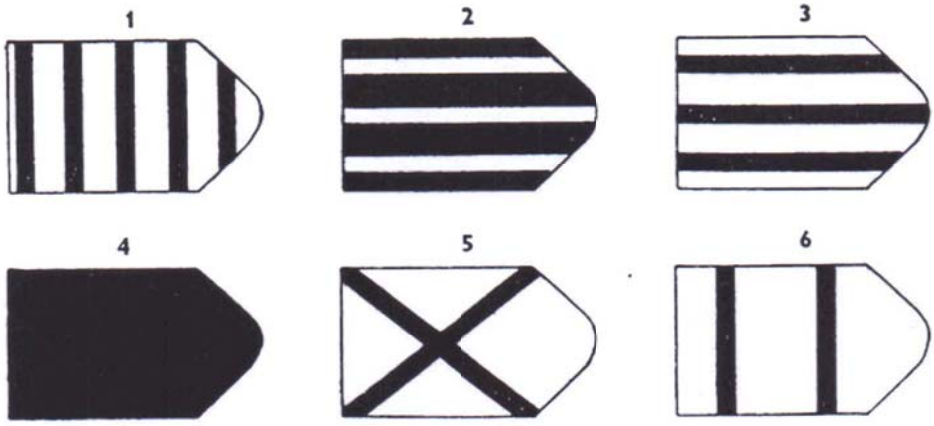

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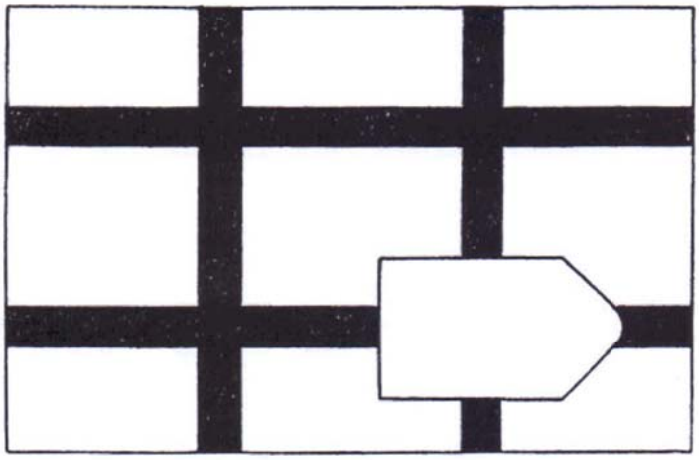

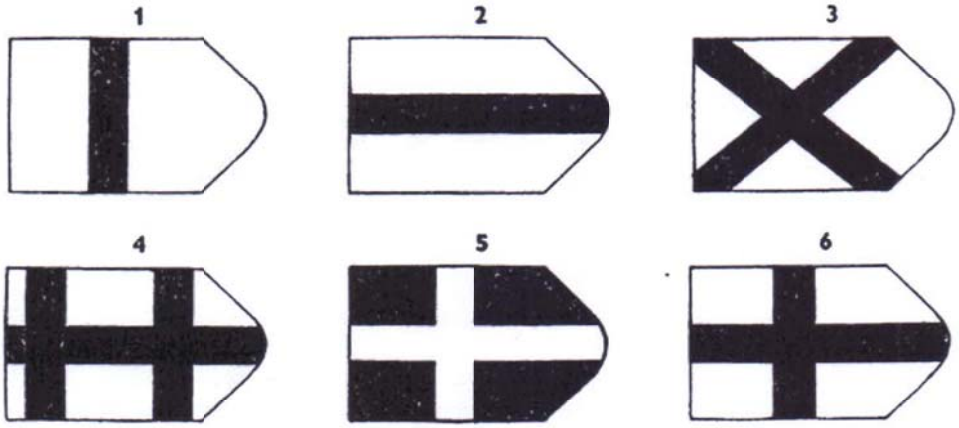

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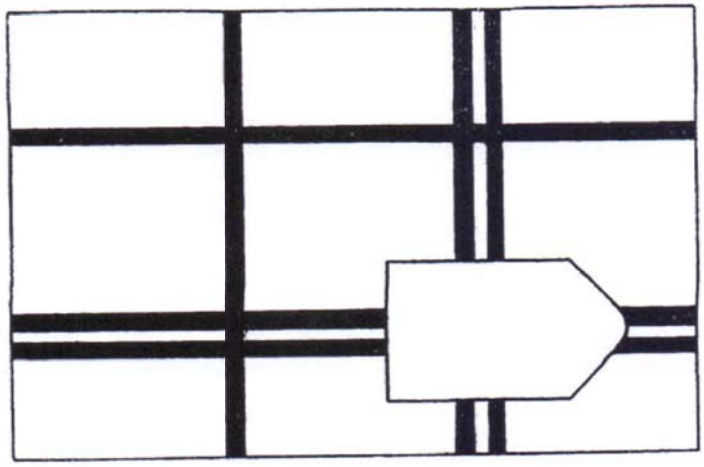
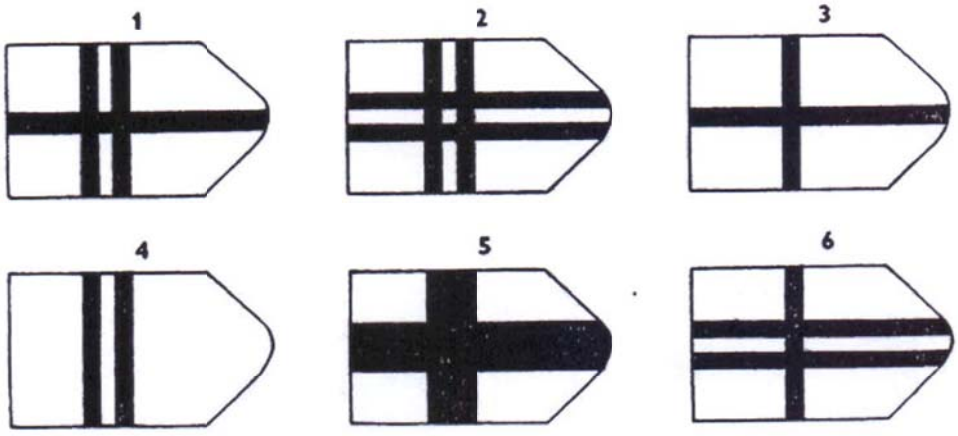
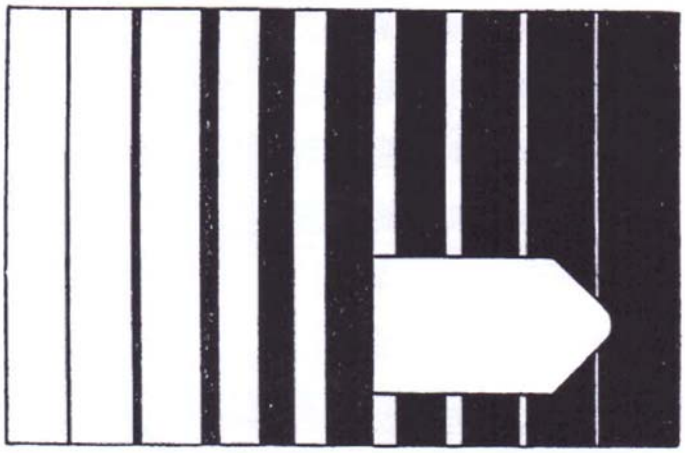
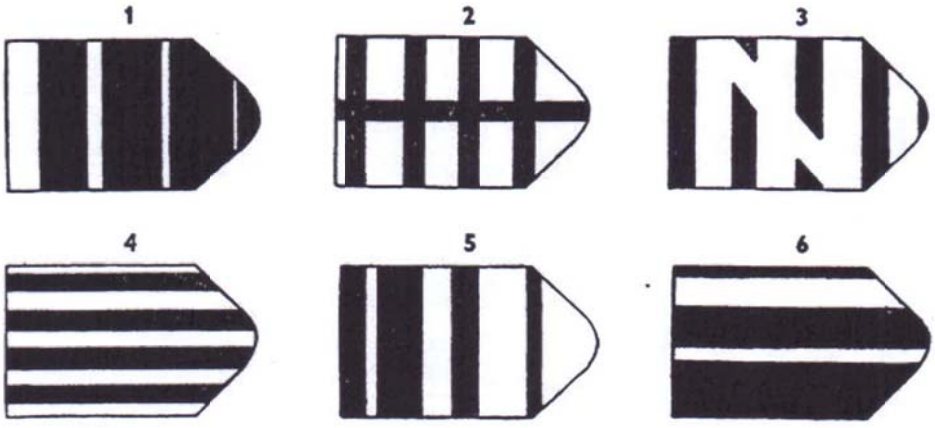




A9





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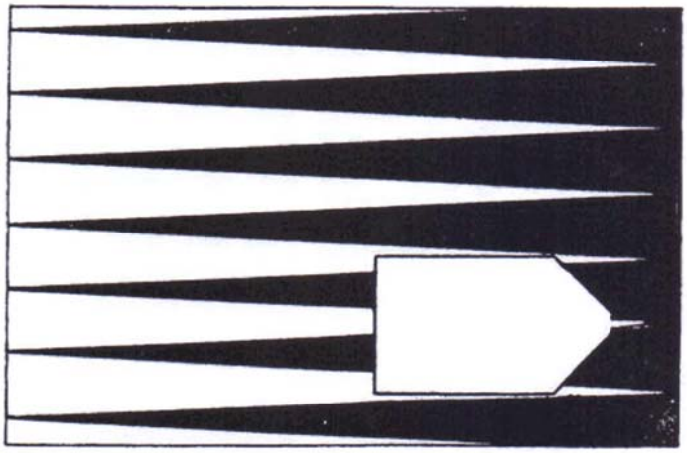
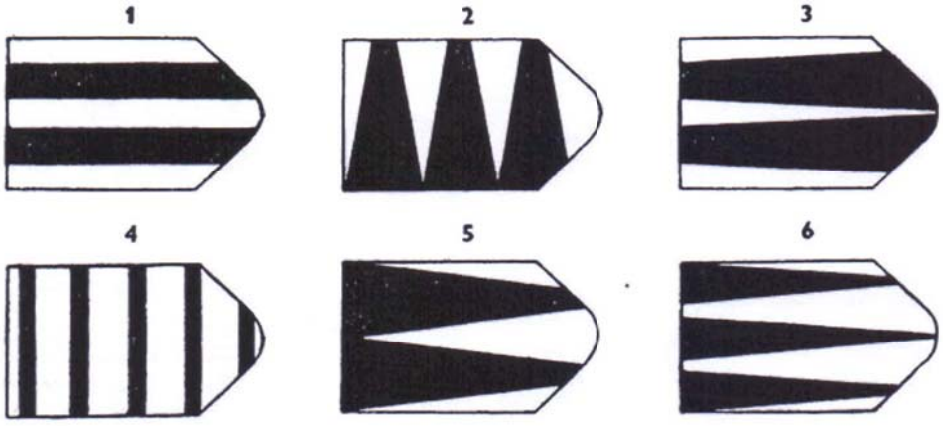
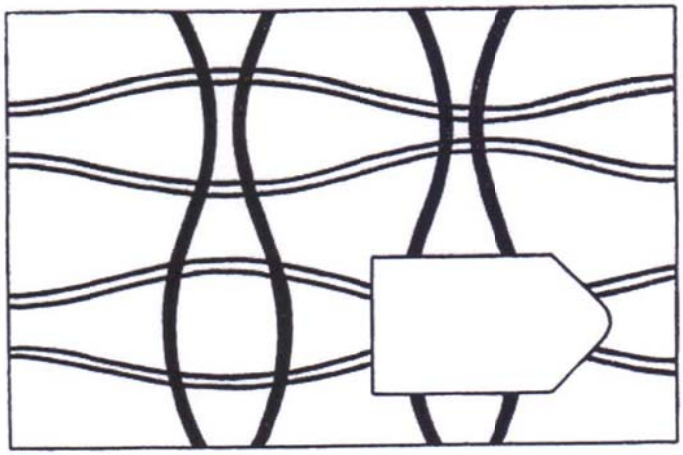
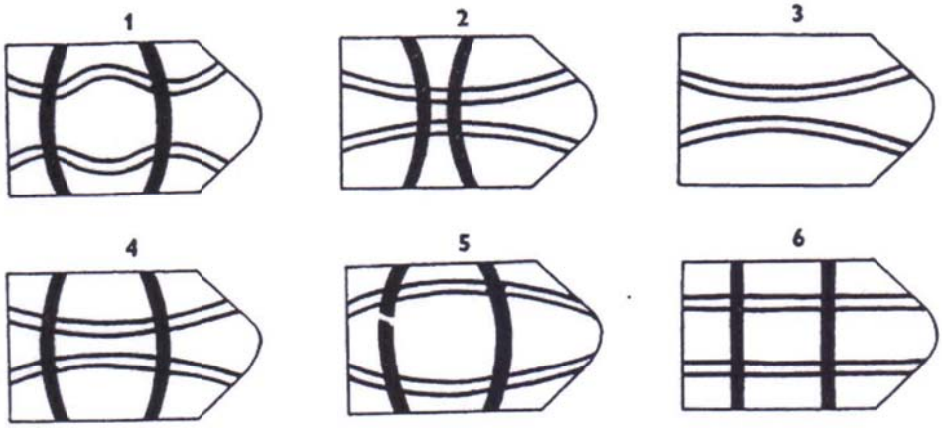


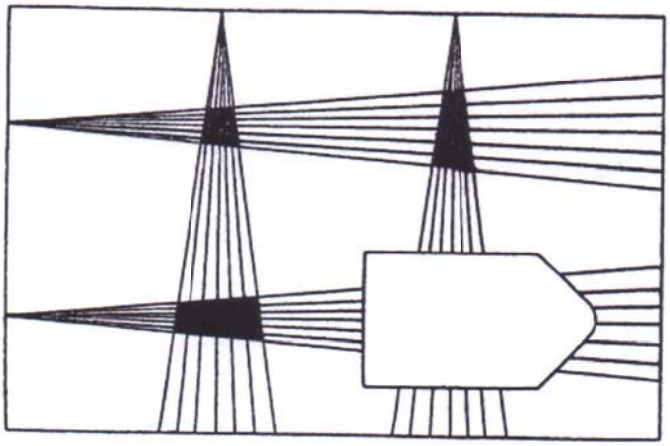


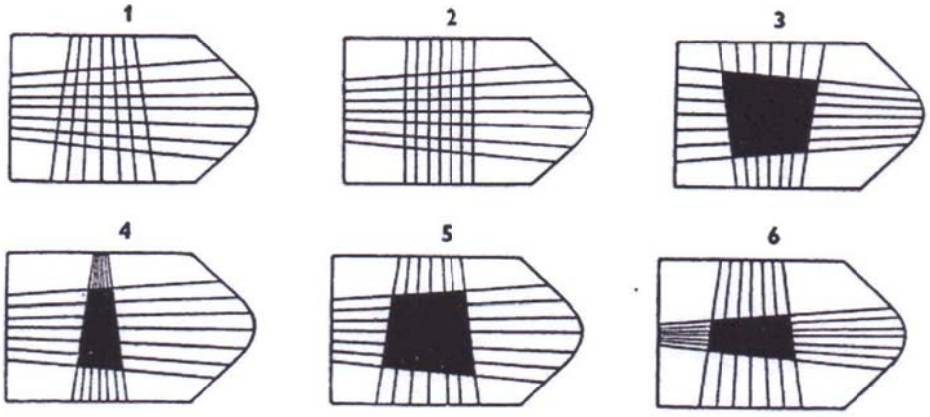
A II





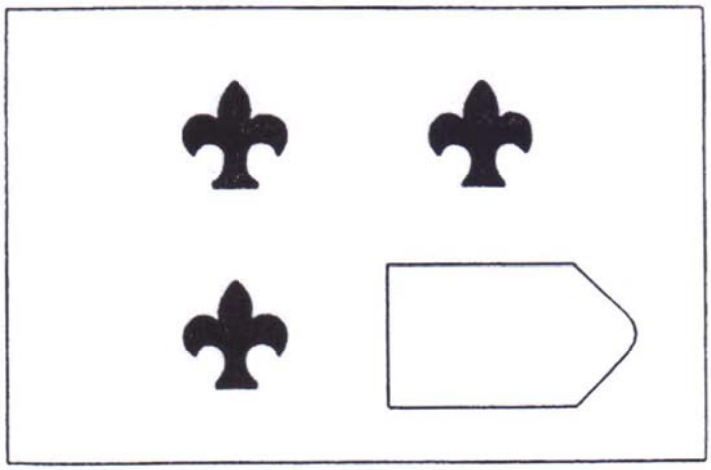
A 12

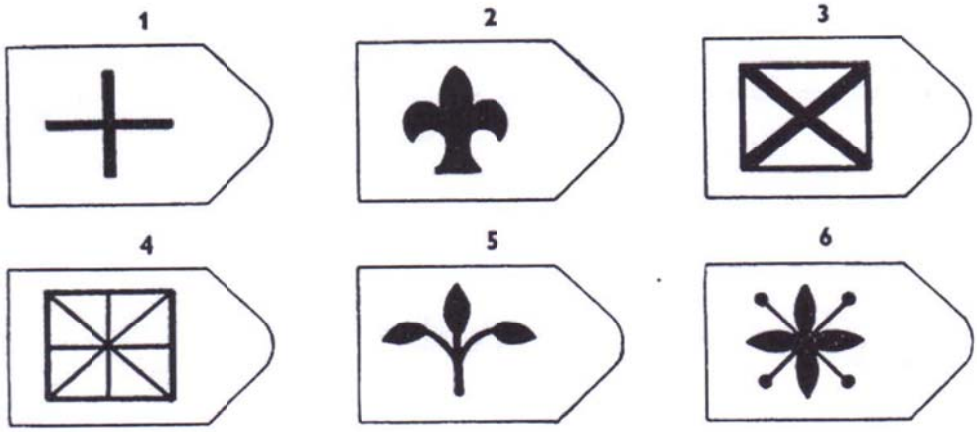




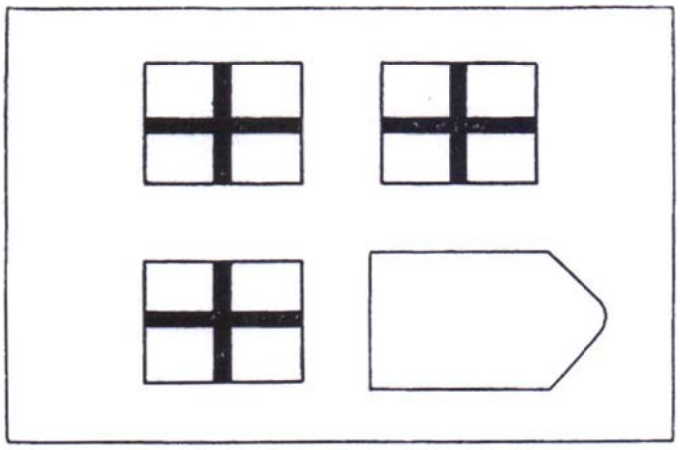
SET B

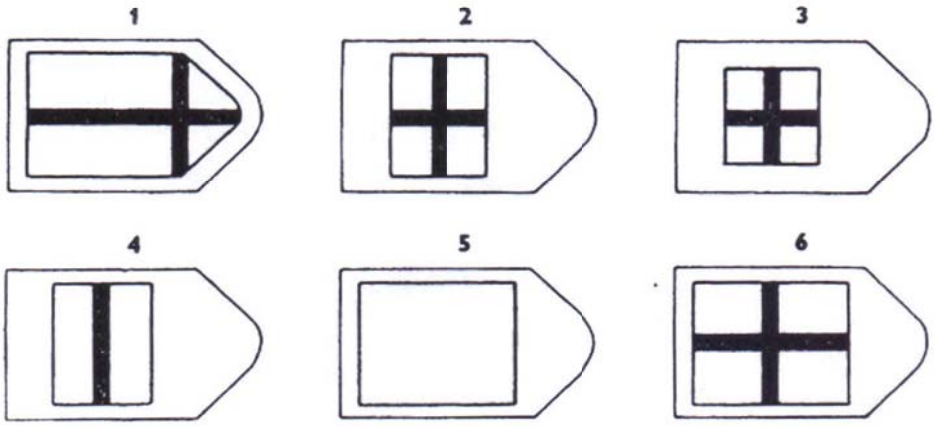
B 1



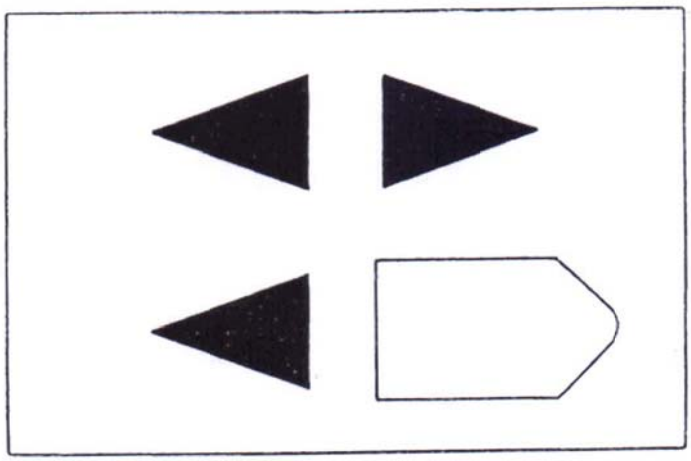


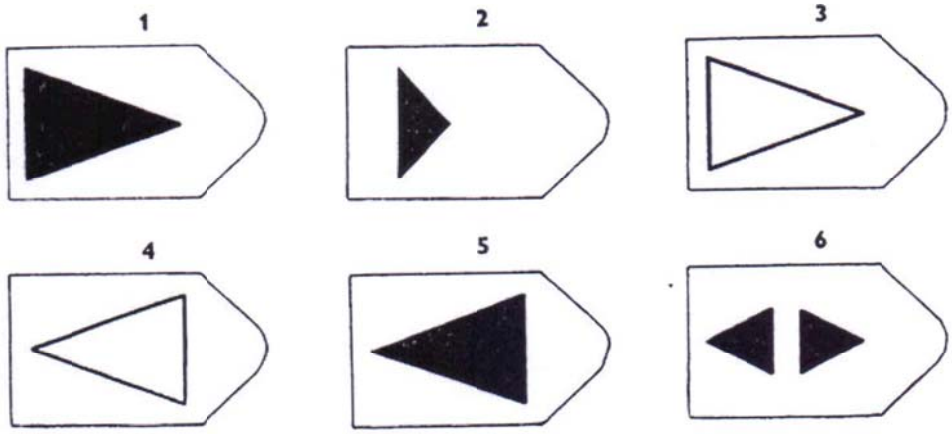
B 2



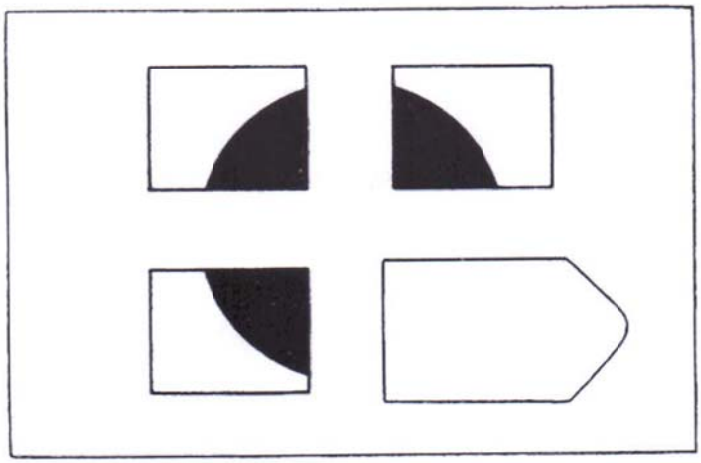


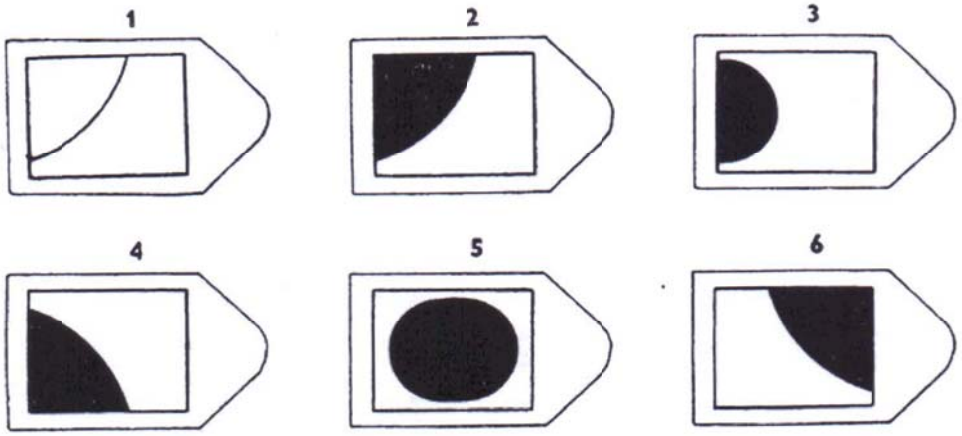
B 3



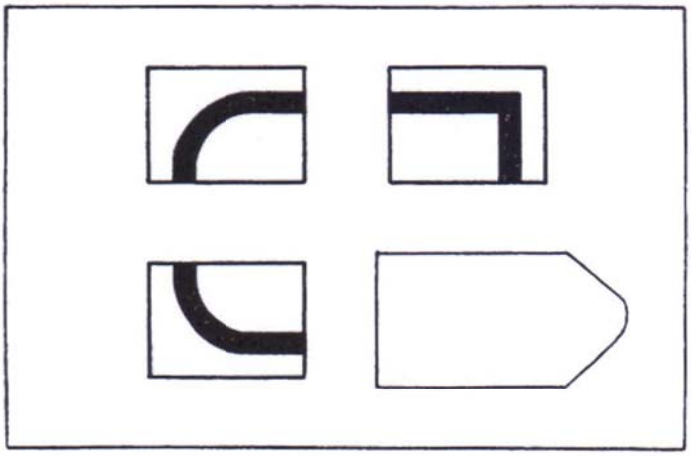


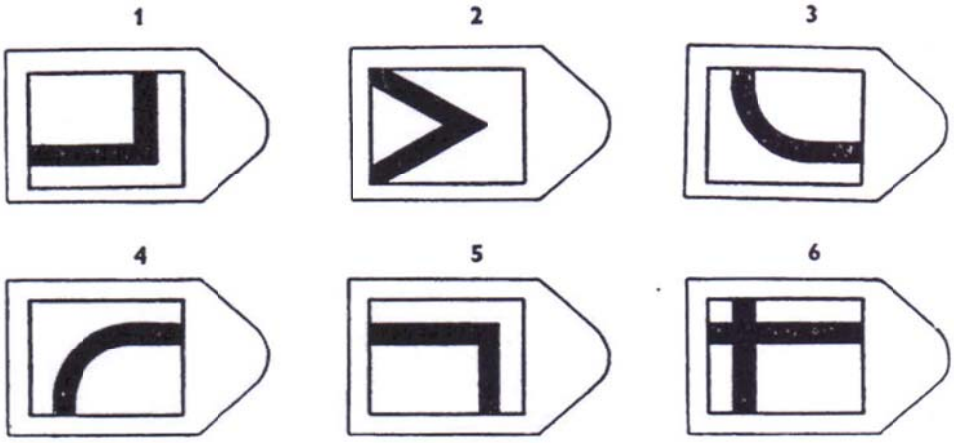
B4





B 5





Plagiarism Undertaking

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ADVERSE LIFE EVENTS AND ADOLESCENTS' EMOTIONAL AND BEHAVIORAL PROBLEMS: COGNITIVE FACTORS AND PERSONALITY TRAITS AS MODERATORS

by Tasnim Rehna

Chapter I

Introduction

Youth, in general, can be termed as an age where individuals witness a cluster of upside down changes ranging from physical to emotional and social to spiritual growth (North Carolina Department of Public Instruction [NCDPI], 2004). Among various facets of youth, adolescence is more vulnerable to stressful extraneous factors like poverty, medical conditions and academic conflicts which resultantly lead to an array of internalizing as well as externalizing conduct patterns (McGee & Williams, 2000; Mohay & Forbes, 2009; Morgan & Todd, 2009; Schumacher & Kurz, 2000). During these growing years multiple developments occur simultaneously. These developments encompass their physical growth including puberty which is followed by a wide range of other psychosocial changes in terms of identity; exploring personal flairs, interests, and talents; developing peer and amorous relations; and getting more autonomous and crazy in making decisions regarding health, adventures, and future life (Steinberg, 2005). Though this stimulating epoch of growth is branded with acute sense of probe, exploration, and growing capacities, it carries along numerous factors which make adolescents even more vulnerable.

Numerous researches reveal that these pivotal changes in early grade adolescents, when combined with increased importance of peer relationships, intensified degree of self-consciousness and uncertainty that even enhance their vulnerability for socio-emotional sensitivity and problems in middle adolescence period (Blakemore, 2008). Furthermore, fluctuating nature and capricious timing of such transitions, proliferate already existing insecurity and instability in adolescents and it gets further complicated if it is not synchronized with their peer groups (NCDPI, 2004). Interestingly, early adolescence

changes vary widely from set of physical, emotional and cognitive changes of first three natal years as these take place with a heightened degree of intrapersonal cognizance and uncomfortable comparison with peers and thus cause more stress (NCDPI, 2004).

Along with socioemotional insecurities, substantial biological changes also take place in brain during early adolescent years, triggering an elevated degree of emotional vulnerability (Steinberg, 2005). This emotional vulnerability governs thinking patterns of adolescents and they fall prey to emotional and dramatic responses to various stressful events of life. As middle grade apprentices mature in age and promote to secondary and higher secondary level epochs, their cortical region of brain also starts maturing and higher order cognitive control unit in the brain steer larger impact on their overall functioning (Steinberg, 2005). Furthermore, these executive functions are linked to an increasing capability of logically calculating pros and cons of a specified response, as well as ensuring precise projections concerning their prospective life. In addition, development of the cortical region of brain is directly proportional to a young person's propensity to dominate the primitive "fight or flight" responses to a situation and allow them to make more confident, vivid and refined response towards any threatening or frightening situations of life (Spenrath, Clarke, & Kutcher, 2011). However, during middle grade years, these changes are in emerging phase and are quite primitive on maturational ground, thus adolescents during this era show higher propensity to react emotionally towards life stressors than those in late adolescence period.

These middle grade adolescents, advertently or inadvertently, are gradually exposed to more advanced and adult life stressors (NCDPI, 2004). Such exposures may vary from mild (i.e., can be holding them responsible for their academic performances) to harsh (i.e., decisions regarding drug usage or antisocial conduct). Middle adolescents, before developing a routine acceptance to such behaviors like older adolescents or adults,

may go through a distorting phase. These experiences, before translating into accumulative values and perspectives for interpreting, assigning values or responding to a variety of life events, may be considered a nightmare in the early years of adolescence epoch. An ample of research has demonstrated the development of many psychopathologies i.e. anxiety, anger and even depression due to exposure to adverse events of life (Gault-Sherman, Silver, & Sigfusdottir, 2009; Johnson, Whisman, Corley, Hewitt, & Rhee, 2012) which subsequently can spoil their willingness to learn (de Anda et al., 2000; Franko et al., 2004; Oliva, Jiménez, & Parra, 2009).

Altogether, adolescence is a stressful epoch with multiple pressures making adolescents vulnerable for numerous emotional and conduct outcomes which is the focus of the present study. The present study centered upon the assumptions to find out either experience of adverse life events lead to emotional and behavioral problems and what role some other factors such as cognitive abilities, cognitive errors, personality traits and demographic variables play in this relationship. Empirical foundations to answer these questions were made on basis of previous researches and theoretical explanations for each of the study variables and have been discussed as under.

Adverse Life Events

Adverse events and subsequent stress resulting in psychopathology and even mortality has often been documented as a substantial public health concern (Brown, Harris, & Eales, 1993; Dohrenwend, 2006; Ford, Collishaw, Meltzer, & Goodman, 2007; Kessler, 1997; Tiet et al., 2001). Documented origin of the research on impact of stressful life events on the physical and mental health of an individual dates back to WW1 where shell stricken and battlefield-fatigued cases were reported (Schwarzer & Schulz, 2001). However, psychologists started documenting stressful life events' victims since late 1960 and amongst pioneers were Brown and Birley (1968) who discovered associations

between adverse life events and fits of schizophrenia and then acute schizophrenia (Birley & Brown, 1970). In their study they categorized "a list of events which on common sense grounds are likely to produce emotional disturbance in many people". Later research successfully established a vivid link between stressful life events and subsequent risk for psychopathology (Flouri & Panourgia, 2011; Hammen 2005; Rutter, 2007). Researches enlisted a wide range of life stressors than focusing on any singular stressor for studying behavioral and emotional issues of adolescents (Flouri & Kallis 2007; Johnson 1986).

Holmes and Rahe (1967) termed an event as stressful event if its occurrences cause readjustments and changes in usual activity of individuals. Conceptual definition of a stressful event thus can be “the person experienced, witnessed, or was confronted with an event where there was the threat of or actual death or serious injury. The event may also have involved a threat to the person's physical or psychological well-being or the physical or psychological well-being of another person” (APA, 2013). Components of any stressful encounter thus can be the way various people absorb them cognitively as a threat, loss, harm or a challenge. However, assessment, result and coping of any such stressor are dependent upon its gravity, length, and ambiguity.

Schwarzer and Schulz (2001) coined normative and non-normative dimensions of these events. They termed those events as normative which happen naturally to people at a certain time and are well expected during normal course of time i.e. school changes, wedding, delivery, examinations, vocation, superannuation, deaths of various people around including parents (McKenry & Price, 2005). Contrarily, non-normative events include infrequent or unforeseen events, such as calamities, accidents, or ailments (Boss, 2001; McKenry & Price, 2005). However, even normative dimension of these events, despite the element of expectedness, carry an element of surprise in it and one can get

prepared in general for the expected harm but still one wonders when it will happen. However, regardless of the types, adolescents are affected by approximately all major and minor adverse events and study reveals that approximately 25% of adolescents witness a major stressor in the form of death of a dear one or some other traumatic episode while majority among the rest endure protracted stressors and diurnal hassles. Frequent among these relate to academic institutes, and relational problems (Donaldson, Prinstein, Danovsky, Spirito, 2000; Williamson et al., 2003).

Theories of Adverse Life Events

Adverse life experiences, in most of the cases, do not require a pathological response as victim assimilates it with the help of his cognitive skills. However, if assimilation fails various psychological disorders and other mental health ailments can follow such as withdrawal, physiological reactivity, and difficulties in readjustment. Several psychological and social theories have been put forward to explain traumatic stress and resultant consequences, and significant among those are as follows:

Janoff-Bulman's assumptive world theory. Janoff-Bulman's (1992) proposed a cognitive model named "assumptive world theory" for comprehending adverse influences of resulting from the experience of adverse life events. It holds the notion that un-traumatized people uphold positive view of themselves as well as others and view the outer world as objective, meaningful, and benevolent. One dark facet of adverse life experience is that it shatters these "fundamental assumptions" (Beck & Clark, 1988; Janoff-Bulman, 1989), and the ultimate recovery necessitates restoration of this fundamental belief about oneself and rest of the world.

Shattering of existing set of beliefs, loss of positive perception of the self, and disbelief in a compassionate meaningful world is a logical outcome of any trauma i.e. loss of someone, incest, sexual assault or other calamity (Janoff-Bulman, 1989; Schwartzberg

& Janoff-Bulman, 1991). Similarly war-related traumas and exposure to militancy have been observed to result in distorted self-control and believe in personal faculties (Solomon, Benbenishty, & Mikulincer, 1991). Congruent effects were found in the survivors of Holocaust who showed distrust and strongly negated an empathetic and benign world (Prager & Solomon, 1995). However, the more these beliefs and cognitions become closer and consistent to the reality, the more they help in interpreting prospective fears and threatened events in a rational and logical manner via positive cognitive appraisal which, in turn, result in the perception of a secure world (Wortman & Silver, 1987). Contrary to this, these shattered beliefs may ultimately result in psychological distress which is reportedly developed after experiencing any adverse life event (Nolen-Hoeksema & Morrow, 1991; Stewart & Salt, 1981). Research has manifested that exposure to acute and extremely adverse events i.e. death of a dear one, loss of job or serious health issue can result in clinical symptoms of depressive disorder or anxiousness within a duration of one year (Bifulco & Brown, 1996; Finlay-Jones & Brown, 1981), and these repercussions are mainly due to malfunctioned cognitions of individuals about themselves and world around (Beck & Clark, 1988).

Stress as a transaction. Lazarus, being a social-personality psychologist, showed interest in explicating the underlying mechanisms of traumatic and adverse life experiences. He proposed and verified a "transactional theory of stress and coping (TTSC)" (Lazarus, 1966; Lazarus & Folkman, 1984). He attached experiential value to the concept of stress but in and of itself it was not quantifiable as a lone factor. Lazarus (1966) argued that the event itself is void of stress or does not constitute the element of stress; rather it is the interaction between the individual and environmental factors that contribute to the development of stress. He labeled stress as a blend of "affective, cognitive, and coping components". He declared that the basic mediating factor of the interaction

between individual and his environment was cognitive interpretation which usually operates on three levels: primary appraisal, secondary appraisal, and reappraisal.

Primary appraisal deals with individual's perception and evaluation regarding what is destined for him in a particular event or situation. In particular, the individual evaluate the impact of estimated discrepancy between the desired and available resources on his psychological well-being. In case of greater discrepancy (i.e., the desired resources overweigh the available ones) the person may perceive the situation as alarming or harmful. However, this previewed threat, if not considered harmful, does not contain the element of stress appraisal. *Secondary appraisal*, triggered by threat perception, is the process that determines nature of coping options or actions available and their usefulness to counter a possible threat. These primary as well as secondary level appraisals may often coexist at the same time and may co-vary with each other, hence making assessment process difficult (Lazarus & Folkman, 1984).

Reappraisal is characterized by a continuous and on-going process of interpreting, changing, or reassigning the labels to initially existing primitive and secondary level appraisals along the changing circumstances. Initial perception of threat may get transformed into a challenge or something mild or irrelevant as reappraisal mostly ends up in cognitive elimination of alleged threat. Numerous circumstantial factors affect appraisals of threat. It includes quantitative strength and intricacy of threat; victims' set of values, commitments, and ambitions; resource availability; uniqueness of the environmental conditions; self-worth; societal support; environmental restraints; coping abilities; extent of insecurity and doubt; perceived control, as well as time span of the peril. Contextual occurrences during this appraisal processes then decide and regulate affective responses and coping mechanism to deal with these responses (Lazarus, 1966; Lazarus & Folkman, 1984).

Cognitive model of stress. Ehlers and Clark (2000) postulated that pathological responses to traumatic events result from an individual's information processing in manner that gives a perception of threat whether internal (towards one's own self or his future) or external (regarding safety of the environment). Negative evaluations of adverse events or the abnormality associated with the event as well as the nature of adverse event are two fundamental aspects that typically lead to these effects. Ehlers and Clark (2000) further theorized that the victims involve in an acute negative appraisals regarding external threat, perceiving the outer world as menacing; and about internal risk, perceiving self as incapacitated. This eventually leads to distorted evaluation of the environment (Mayou, Bryant, & Ehlers, 2001; Steil & Ehlers, 2000), thus ultimately result in the development and maintenance of mental health difficulties.

The aforesaid theories briefly explained mechanism and sequelae associated with the experiences of adverse life events. However, the trajectory of adverse life events to psychopathology has been best explained under "Cognitive Reworking Model" proposed by Horowitz's (1975) which is discussed as follows.

Horowitz's and silver's perspectives on cognitive reworking. Horowitz (1975, 1986) stands as a forerunner in PTSD field owing to contributions in processing of moods, thoughts, and images related to trauma and loss. His theory has footprints in psychodynamic notes of usual and unusual painful reactions, and in traditional concept of assumptive worlds of individuals owing to various reactions (Horowitz, 1975). Horowitz contends that people primarily respond in crying when they encounter any trauma while their secondary response is try to assimilate traumatic information with that of their prior knowledge (Horowitz, 1986). In such situations, people are faced with a phase of information overload which makes it difficult for them to synchronize their thoughts and memories of pre and post traumatic phase. Psychological defense mechanisms are applied

in such situations to avoid memories of trauma and its recurring recalling. Victim of trauma may be in a state of denial about trauma, avoiding its reminder or feeling numb yet basic psychological need to synchronize pre and post trauma information means that traumatic memories are broken into consciousness in the shape of flashbacks, nightmares and intrusions. These willfully experienced traumatic memories offer victim an opportunity to attempt reconciliation with pre-trauma representations.

Interestingly, Horowitz puts forward two contrasting processes happening simultaneously: One by securing victim through suppression of traumatic information and second through controlled promotion of trauma information by fetching it to mind. Consequently, the victim vacillates between withdrawal intentions and ruminations of the traumatic event that in return enables him to work out on traumatic information and resultantly severity of every phase declines. In the process, enduring structures of memory, which are expressive of future goals and self, are attuned in a way to get consistent with latest data and thus trauma processing gets completed. Breakdown in re-channelization of traumatic information results in post trauma reactions because this information rests in working memory and keeps on intruding or is simply avoided.

Horowitz's scientific contribution holds a variety of significant explanations and has justly been regarded as influential. He is pioneer theorist in highlighting the impact of traumatic events on a broad set of beliefs regarding one's own self, outside world, and the future as well as he explained the mechanism of recovery involving extensive and comprehensive cognitive shift. Acknowledging this comprehensive study and its power to explicate the range of emotions and schemas faced by traumatized people, his theory was termed as 'social-cognitive theory' by Brewin, Dalgleish, and Joseph (1996). However his theory lacked in covering in depth areas involving distinction between normal recollections of stressful event and flashbacks, individual differences in reactions to

adversity, reaction during the occurrence of trauma, role played by contextual variable i.e., support and trauma cues (Brewin, 2001; Litz, 1992).

His theory suggests that most of the post traumatic complexities arise out of individual's inability to rework upsetting reflections of adverse life event into a tangible cognitive structure (Silver, Boon, & Stones, 1983; Tait & Silver, 1989). He argued that this 'cognitive reworking' is a result of repetitious progressions of trauma-related ruminations and denial (Horowitz, 1986; Tait & Silver, 1989), which gradually fix these impulsions into a permanent and sustainable mental structure. He further argues that this cognitive adaptation is closely attached with the mechanism of extracting meaning in catastrophe and handling with continuous social as well as personal consequences of trauma (Tait & Silver, 1989). During severely adverse experience cases, cognitive assimilation gets enormously difficult due to longstanding distress as a byproduct of avoidant and intrusive spells (Lepore, Silver, Wortman, & Wayment, 1996; Miller, Rodoletz, Schroeder, Mangan, & Sedlacek, 1996), and this in return gives birth to PTSD symptomatology (Horowitz, Wilner, & Alvarez, 1979).

Undeniably, intensity of distorted cognitions predicts severity of distress in a post trauma event (Creamer, Burgess, & Pattison, 1992). Silver et al. (1983) in their analysis of incest victims, discovered that many female survivors of catastrophe were unable to figure out the event, attach any meanings to it, or at all justify its happening but reported them as severe, disrupting, and distressing even decades of their happening. But those who got successfully coped with the trauma on cognitive level were found to be less troubled with its remembrance. Comparable findings were discovered in Tait and Silver's (1989) study of senior community fellows. Most of the older citizens of study divulged facing repetitive, acute and intrusive thoughts of their extreme negative experiences, which they

went through even decades ago and these ruminations resulted in dissatisfaction with life and failure to find meaning in the event (Holman & Silver, 1996).

Although plenty of data supports theoretical standpoint on cognitive reworking, there exists little indication that the demand to cognitively revisit a nerve-racking event is what results in rumination. Rumination, however, may not be the etiological factor that leads to negative appraisal and further in depression, rather it possibly may be the symptom of maladjustment which is more of an outcome. Further, numerous other studies advocate that reworking process results in lasting benefit than decline (Tedeschi & Calhoun, 1995). This perspective though aligned with Silver's notion that ruminations help finding meanings in distressing events, needs empirical settlement with those researches that manifest long-standing drawbacks of these ruminative procedures.

Nevertheless, it becomes vivid that unfavorable circumstances of life have long standing impact on individuals' thought process and related imagery of the event even when the event has faded in the time zone. These afflicting thoughts are continuing and severe, and a person's capability to successfully deal with succeeding adversities might be meaningfully reduced, placing him at risk for the negativity of potential stressors in future. Theoretically, existing models of developmental psychopathology identify the latent significance of this psychological anguish in the etiology and upholding of emotional and behavioral problems in young people. (Cicchetti & Toth, 1997; Haggerty, Garmezy, Sherrod, & Rutter, 1994). Both established and recent social adversities herald and surge the risk for behavioral and emotional psychopathology during school years. (Goodyer, Tamplin, Herbert, & Altham, 2000; Sandberg, Rutter, Pickles, McGuinness, & Angold, 2001).

Outcomes of Adverse Life Events

Stressful changes in the life of an individual, bringing strain and upsetting health, are called adverse life events. These occurrences are tagged as positive or negative, containable or uncontainable, or tagged owing to other scopes as chronic or connecting to specific domains including health, family, or society. Such adverse life events, of any of the aforesaid category, may potentially change lifestyle (Ferguson, Lawrence, & Matthews, 2000), and are connected to physical health consequences, e. g., breast cancer (Butow, et al., 2000) and development of HIV to AIDS (Leserman et al., 2000). It also carries backing of strong evidence concerning its linkage to mental health consequences, including depression commencement (Holahan, Moos, Holahan, Brennan, & Schutte, 2005) and anxiety disorders (Murphy, Moscicki, Vermund, & Muenz, 2000). For instance, cognitive model of Beck (1986) theorized that negative and distorted self-schemata interact with life stress to predict multitude of psychopathology among adults and adolescents.

Beyond doubt, plentiful common stressors of adolescence and other significant life events are related to mental health and behavioral difficulties including depression and anxiety as well as externalizing symptomatology or conduct problems i.e. anger, hostility and sociopath behaviors (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001). For instance, the manifestation, continuation, and ending of intimate relationships are linked to negative affects like sleeplessness and symptomatic depression through interpersonal conflicts, refusal, and other social stressors (Monoroe, Rohde, Sleeley, & Lewinsohn, 1999). Amorous relations may be major source of stress, when jealousy, aggression, infidelity and conflict occur (Gallaty & Zimmer-Gembeck, 2008). Breakups severely affect mental health and result in commencement of clinical depression in adolescents.

Few researches have directly assessed positive results of coping with stressful events manifesting that handling just manageable challenges are vital to the growth of a wide range of skills and capacities. Researchers indicate that conflicts, obstacles, or failure is latent catalyst for exploration and learning for adolescents as it provides an opportunity to build resources for coping with forthcoming negative events (Aldwin, Levenson, & Spiro, 1994). Majority of researchers agree that results of stressful events of life and daily disturbances are evaluated whether positive or negative largely depends upon the way individuals perceive and react towards them. Dissimilar to children, adolescents confront with variety of novel, challenging and threatening experiences during social transition including leaving home, achieving satisfactory educational or career opportunities and establishing amorous relationships. These challenging situations may often put them at risk to form a wide array of psychological problems. Moreover these stressors have varying degree of effects on them where some take it as a catalyst for positivity, reevaluation of life priorities and develop strong family ties while few others get solitary, depressed, disorderly and increasingly vulnerable to any identical future event.

Clinical literature establishes that adverse life events serve as risk factors for the growth of anxiety, depression and extremity in PTSD or various other behavioral and emotional complications (as cited in Updegraff & Taylor, 2000). Extensively researched results of stressful life events comprise undesirable or maladaptive reactions like negative affect and behavioral outbursts (Flouri & Panourgia, 2011; Nolen-Hoeksema & Morrow, 1991; Stewart & Salt, 1981), and cognitive disturbances such as ruminations and disturbing reflections that can hamper an individual's routine activities and healthy adjustment (Horowitz, 1975; Shaham, Singer, & Schaeffer, 1992).

Literature offers a broader and comprehensive view of research examining the relationship between experience of adverse events and adolescent psychopathology

(Carter, Garber, Ciesla, & Cole, 2006; Chapman, Whitfield, & Felitti, 2004; Evans, 2003; Ford, Collishaw, Meltzer, & Goodman, 2007; Hammen 2005; McCarty & McMahon, 2003; Rutter 2007; Sanders-Phillips, Settles-Reaves, Walker, & Brownlow, 2009; Sandberg et al., 2001; Tiet et al., 2001). Moreover, life stress reportedly draws a common instead of specific pattern of relationship with general psychiatric outcomes (Shanahan, Copeland, Jane Costello, & Angold, 2008). Although, the negative outcomes of adverse life events are many; but the present study engrossed emotional and behavioral problems because of their high prevalence rate. For instance Saleem and Mehmood (2011) reported that emotional and conduct problems are increasing among Pakistani school children and adolescents with an alarming rate; yet very few researches have been directed to study these problems with reference to various adverse experiences of adolescence time period. Thus the current study intended to focus on emotional and behavioral problems as outcomes of the experience of adverse life events among adolescents.

Emotional and behavioral problems. Adolescence is a transitional developmental phase which turns a child into an adult both physically as well as psychologically (Nelson & Israel, 2003). This transition accompanies physical growth, puberty, inclination to self-reliance, rising peer pressure, growing stress regarding body image and interpersonal relationships, as well as exposure to an array of stressors that expose adolescent to contemporaneous and later problems (Kazdin, 2000). Their self-doubts may make them feel less self-assured and more insecure concerning their worldly status and thus naturally they become self-conscious, aggressive or introvert (as cited in Hiremath, Hunshal & Gaonkar, 2008). These risky or maladaptive conducts develop and at times reach their peak during the period of adolescence (Rönnlund & Karlsson, 2006; Walker, Nishioka, Zeller, Severson, & Feil, 2000).

Research studying emotional and behavioral disorders in conduct, mood, eating, anxiety, substance abuse, attention-deficit hyperactivity (ADHD), suicide, relational violence, and other problems in adolescents indicates that gender differences, expression, epidemiology, developmental pathways, comorbidities, causes and contexts of these disorders are different in adolescents than other age groups owing to the unique patters of growth and distinctive challenges (American Psychological Association, 2002; Cicchetti & Rogosch, 2002). Previous researches have drawn a pivotal relationship between negative events of life and emotional anomalies in adolescents. Events of both minor and major magnitude have been found to be predictive of subsequent internalizing and externalizing problems in adolescents.

Studies have even shown that adverse events are predictive of increases in symptomatology after controlling for initial levels of maladjustment (Kraaij et al., 2003). The beginning of these affective and conduct difficulties during adolescence may be fast or slow in time span depending on type of social misfortunes. But the type and nature of these psychological effects and reasons behind their slow or fast emergence remain entirely unknown. A significant supposition denotes that events and problems carry a covert and unwanted psychological build that can be deduced from a thorough recollection of the social features of the occurrence. Developments in neurosciences have labeled these intermediate mental and neural processes liable of managing behavioral responses to various types of adversity (Wolfe & Mash, 2006). Adolescents confront score of adversities during this transitional phase and some of those, which have been explored after a thorough investigation (Saleem & Mehmood, 2011) among Pakistani school children and adolescents, are discussed as follows:

Anxiety. "Anxiety is invoked as an explanatory device in a wide variety of historical and sociological writing. The general form of such accounts is that the

occurrence and timing of some social phenomena is explained by reference to the presence of some elevated state of anxiety which elicits social or political responses by an identifiable group of social agents. Anxiety is a psychic condition of heightened sensitivity to some perceived threat, risk, peril or danger. A distinction between anxiety and fear seems both possible and attractive, but is not ultimately sustainable. One possibility is to define fear as a realistic anxiety, an immediate response to risk or danger, and anxiety as a generalized non-immediate apprehension" (Hunt, 1999).

Anxiousness is a pervasive phenomenon employed in explaining typical as well as anomalous behavior. The contemporary time period is regarded as an era of anxiety owing to the increasingly changing societal values, growing environmental pressures, and adjustment difficulties as a result. Anxiousness can be defined as agonizing obnoxious feeling marked with prospective fear rather than guilty or regret feelings associated with some past event. Characterized with various expressions, it ranges from eustress (beneficial stress) to distress (which is pathological and clinical in nature).

Globally, anxiousness is the chief problem amongst the most widely recognized mental health issues in school going children and young adolescents (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003). The prevailing rates of anxiety problems extend from 4% to 29%, where an average ratio has been seen of 8% (Bernstein & Borchardt, 1991; Boyd, Gullone, Kostanski, Ollendick, & Shek, 2000; Kessler et al., 2005). In line with these studies, Saleem and Mehmood (2013) studied prevalence rates for emotional and behavioral problems among adolescents following a sample of 5053 school children. Among all, the most frequently reported problem was anxiousness with a ratio of 16%. However these statistics may not be heavily relied upon because a lion's share of the young adolescents does not even reach the diagnosis stage owing to the internalizing nature of the problem; hence remained unreported (Tomb & Hunter, 2004).

An inverse relationship has been identified between anxiety and socio-emotional performance of children (Levitt, 1967). Although a certain amount of anxiety is essential for optimum level growth and performance but, at the same time, it may be extremely hard to detect the threshold where this desirable anxiety turns to be neurotic. It may be a matter of individual differences where each individual operates on his own bearable level of anxiety and regulates his routine activities accordingly. However, a pathological anxiety can be identified when an individual fails to cope with daily stressors and seeks clinical or psychological help. Such reactions to daily life hassles are largely shaped by psychological and biological dispositions of one's personality.

However, all important is that anxiety has been linked with significant deleterious impacts on adolescents' psychosocial and academic achievement (Essau, Conradt, & Petermann, 2000). Particularly damaging their interpersonal skills (Albano, Chorpita, & Barlow, 2003; Weeks, Coplan, & Kingsbury, 2009) and leading them towards social isolation, negative self-evaluation, perceived social disapproval, and trouble building new relationships (Bokhorst, Goossens, & De Ruyter, 2001; Weeks et al., 2009). Moreover, school refusal, diminished critical thinking and management skills, and lower scholastic accomplishment have additionally been noted as results (Donovan & Spence, 2000; McLoone, Hudson, & Rapee, 2006; Rapee, Kennedy, Ingram, Edwards, & Sweeney, 2005).

Although conceived as a global and universal phenomenon, childhood anxiety has emic and cultural manifestations as its unique circumstances and indications are affected by sociocultural convictions and practices (Good & Kleinman, 1985; Guarnaccia, 1997). In India, the fundamental reported reason for adolescent anxiety is parental pressure and expectations for high scholastic and academic accomplishment (Deb, 2001). Similar is the case in Pakistan where the problem is more evident in secondary school level when

adolescents have to appear in Class X examination, known as the Secondary Board Examination. Results of this exam are of fundamental significance as they determine the probability of further admission in their basic arear of interest with a competitive scope in the market. Medicine, Engineering and Management are the most favored disciplines because of the higher probability of prospective job insurance. In case of failure, a vast majority of students commit suicide each year (Planning Commission India, 2013) which underlines and explicates the gravity of the problem and the cost community has to abide.

Despite academic catastrophe, failure to adapt to the uncommon stress and strains in life may cause an agitation and psychological unrest inside the person. It is, in fact, the activation of behavior in the form of energy utilization during a nervous shift from parasympathetic to sympathetic control. This behavior or action then consumes the extra energy which is available and not being devoured. However, this consumption holds various expressions as some people have better problem solving abilities and handle such situations more insightfully than others. While others may come up with flight tendencies and look for escape from the acrimonious realities and seek asylum in self-inflicting behaviors i.e. smoking etc.

Thus, environmental pressures and adversities are vital to understand the trajectory of childhood and adolescent anxiety. Seiffge-Krenke (2000) established a link between significant life experiences, social support, peers and family connections, and psychological maladjustments including anxiety problems. Furthermore, twin studies have reported that adverse life events, after controlling for genetic factors, showed strong associations with the onset and manifestation of anxiety symptoms (Eley & Stevenson, 2000); children faced more threatening events exhibited higher level of anxiety indicators than those exposed to less threatening events, illustrating that negative experiences/ events are significant indicator of youth anxiety. A well-established link has also been reported

between stressful life events (i.e., socioeconomic adversity and chronic life adversity) and adolescent psychopathology (Copeland & Hess, 1995; Kim, Conger, Elder, & Lorenz, 2003; Neal & Brown, 1994; Weist, Freedman, Paskewitz, Proescher, & Flaherty, 1995).

Earlier studies have also postulated that a large number of unavoidable stressful events show a predictive link with youth anxiety, particularly in adolescent girls (Deković, Koning, Jan Stams, & Buist, 2008; Dornbusch, Mont-Reynaud, Ritter, Chen, & Steinberg, 1991; Kim et al., 2003; Swearingen & Cohen, 1985). For instance, Swearingen and Cohen (1985), following a cross-sectional design, concluded that secondary school children with greater number of adverse life experiences displayed more intense symptoms of negative affect and anxiety. Clinicians have also linked youth anxiety with parental psychopathology and emotional instability (Burstein, Ginsburg, & Tein, 2010; Strober & Carlson, 1982) along with other stressors of life.

Social withdrawal. Characteristically, adolescent psychopathology constitutes two broader types of impulse control; first is under-control in which individuals have poor or little control over their negative emotions and behaviors (e. g., aggression) and over-control which holds overly inhibited emotions and impulses such as social alienation (Mash & Barkley 2006). The later has been relatively less researched area in the course of developmental psychopathology hence needs theoretical as well as empirical consideration.

Social withdrawal can be defined in terms of continuous expression of a variety of solitary behaviors across social situations where they have to interact with peers that may be familiar or unfamiliar to the children (Rubin & Asendorpf, 2014; Rubin & Coplan, 2004). Some of the young adolescents may experience intense and acute feelings of estrangement and isolation during their efforts for autonomy and withdrawing from parental influence. They struggle to develop deep and closer relations with their peers and gradually move away from the protective and warm environment of home and family. If a

child fails to form closer and healthy relationships with their peers for any of the reason, he is most likely to experience loneliness, being dejected, and withdrawal. However, being narcissist like all other children, he may deny accepting his failure and may increasingly become more withdrawn.

Characteristically, withdrawn children and adolescents mostly spend their time alone and not mix up with other children while playing. Even if they are in a social situation, they try to be in a corner or on the periphery because of their shyness, poor self-confidence, or social anxiety (Bowker & Raja, 2011; Katz, Conway, Hammen, Brenman, & Najman, 2011; Rubin, Bukowski, & Bowker, 2015). Notably, social alienation has expressed a stable pattern during childhood and often increases during adolescence (Hymel, Wagner, & Butler, 1990; Oh, et al., 2008; Rubin, Coplan, & Bowker, 2009).

In literature, social withdrawal has been referred to the extinction or loss of social ties with peers, friends, and different ecological systems. Socially alienated individuals have poor interpersonal networks and are less likely to participate in social gatherings. Studies have linked this pattern of behavior with a number of environmental factors e.g. continuous and prolonged maltreatment of children which in turn result in peer rejection (Bolger & Patterson, 2001) in school and other social settings. In another study (Shields, Ryan, & Cicchetti, 2001), researchers, using a sample of maltreated children, found a mediated link of parental maltreatment with children's negative and deleterious schemas of parents which, in turn, link to negative emotional regulation and likely social rejection.

Concisely, this study illustrates that children with adverse experiences i.e. emotional or physical maltreatment consistently show difficulty and inhibition in developing social and interpersonal skills. For instance, they may react aggressively or misconstrue the behaviors of other children based upon their distorted cognitive

frameworks. Irrespective of the trajectory of this psychopathology, these children are overly inhibited in developing and maintaining their relations in a healthy manner.

Researchers unanimously agree that the underlying factors behind social alienation are multiple extending from a lack of interest to involve with peers and other social relations to an apprehensive escape of social contact (Coplan, Gavinski-Molina, Lagace-Seguin, & Wichmann, 2001). A plenty of research demonstrates that early alienation from peers may result in socio-emotional consequences. It has also reported links with peer victimization (Dill et al., 2004; Estell et al., 2009) and aloneness (Cacioppo, Hughes, Waite, Hawkley, & Thisted, 2006; Hymel, Rubin, Rowden, & LeMare, 1990; Mahon, Yarcheski, Yarcheski, Cannella, & Hanks, 2006; Rubin et al., 2009), and has reciprocal relationship with peer approval and peer liking (Hart et al., 2000; Nelson, Rubin, & Fox, 2005).

Along with peer rejection, withdrawn adolescents also show perceived incompetence in a multitude of functioning areas (Hymel et al., 1990) such as prolonged strain in interpersonal relationships and peer-related adverse life experiences (Caldwell, Rudolph, Troop- Gordon, & Kim, 2004). However it does not necessarily mean that withdrawn children are socially aloof; in fact they might have leastwise one close friend which is usually maintained up to one academic year (Rubin, Wojslawowicz, Rose-Krasnor, Booth-LaForce, & Burgess, 2006). But, such friendships may possibly not be that much warm and cherishing as those of sociable children because withdrawn children lack self-disclosure and are, as rated by their peers, comparatively less fun loving and less cooperative (Rubin et al., 2006). Summing up, withdrawn children and adolescents show interpersonal disengagements, social disapproval, peer victimization, low self-concept and poor quality relationships.

Somatic complaints. As previously discussed, adolescence, being a critical and transitional period (Nelson & Israel, 2003) is commemorated by multiple sources of life stress including school underperformance, family conflicts and dysfunction, fiscal hardships, and authoritarian communal norms etc. Exposure to these stressors, if not handled rightly, can have a negative impact on adolescents' health and may jeopardize them for frequent physical and psychological symptoms (Kazdin, 2000; Murberg & Bru, 2007; Torsheim & Wold, 2001). In fact, frequent and repeated exposure to stress may directs towards the manifestation of psychosomatic symptoms (Rehna, Hanif, Laila, & Ali, 2016) such as headache (Aaseth et al., 2011; Cathcart, Winefield, Lushington, & Rolan, 2010), gastrointestinal complaints (Konturek, Brzozowski, & Konturek, 2011; Surdea-Blaga, Baban, & Dumitrascu, 2012), palpitation (Humaida, 2012) and other bodily pains particularly in children and adolescents (Greene & Walker, 1997). But these symptoms are seldom linked with organic disorders rather an expression of the incapability to discern and regulate one's own emotions (Gross, 1998). However these symptoms, at the same time, are crucial clinical warnings, which may sustain into adulthood, herald subsequent mental illness (Dhossche, Ferdinand, van der Ende, & Verhulst, 2001), and result into blind consultation of health care services. Research has also shown a greater tendency of experiencing stress and subsequent somatic complaints for females as compared to males (Ihlebaek, Eriksen, & Ursin, 2002; Kroenke & Spitzer, 1998).

Feelings of rejection. Perceived or actual social rejection can be defined as a dyadic interaction between the recipient and the perpetrator (McDougall, Hymel, Vaillancourt & Mercer, 2001) where the recipient perceives disliking and hatred by others (Dodge et al., 2003). With the increasing emphasis of literature on interpersonal relationship, the phenomenon of social approval has become more significant in the

context of psychological and social wellbeing (McDougall et al., 2001). Researchers have unanimously agreed that perceived disapproval or feelings of being rejected by other may be linked with an array of conduct and emotional disruptions (McDougall et. al., 2001). For example children with perceived social rejection may have high probability of comorbid problems i.e. aggression, social alienation, and a wide variety of academic difficulties (Osterman, 2000).

Furthermore, literature has also established a link between experience of multiple life adversities and perceived social rejection i.e. peer victimization and self-respect in a social scenario (Hawker & Boulton, 2000). Researchers have observed a strong association between peer victimization, negative evaluations of others' intentions and perception of being rejected during the course of societal interactions (Bond, Carlin, Thomas, Rubin, & Patton, 2001; Hodges, Boivin, Vitaro, F., & Bukowski, 1999; Rudolph, Troop-Gordon, & Flynn, 2009). A cohort study has also endorsed these findings by predicting feelings of social rejection among school children who experienced peer victimization two year earlier (Hanish & Guerra, 2002). These studies provide empirical base for hypothesizing that experience of adverse life events may lead adolescents to develop feelings of social rejection as a consequence.

Aggression. Various perspectives have defined aggression as a multi-faceted phenomenon (Farmer, 2007) with a specific focus on clinical expression of the behavior (Morphet et al., 2014). This behavior is of particular importance in the field of forensic psychology which deals with the manifestation of serious or vicious crimes and violation of social norms (Dahlen, Martin, Ragan, & Kuhlman, 2004; Jacob & Holmes 2011; Ryan & Peterson, 2004). More particularly of adolescence time period, aggressive behaviors have grabbed a central attention of psychiatrists because this emotionally charged and loaded population seriously lack the ability to regulate and control their hostile instincts

(Cunningham, Johnson, Gatenby, Gore, & Banaji, 2003). Aggression among adolescents or school aged children has become a global concern because of its vile and destructive nature which poses serious threats to the adolescents themselves and the society as well (Hassan, Osman, & Azarian, 2009; Mercy, Krug, Dahlberg, & Zwi, 2003; Wang, Iannotti, & Nansel, 2009).

'Aggression' is an umbrella term which bears all the harmful acts such as interpersonal conflicts, physical or verbal damages to other people, destruction of property, and non-compliant behaviors (Elinoff, Chafouleas & Sassu, 2004). Furthermore, it carries the elements of inflicting pain or harm to others which may have cognitive as well as behavioral manifestations (Fishbein & Ajzen, 2010; Lyznicki, McCaffree & Rabinowitz, 2004). Typology of aggressive behaviors has a multi-dimensional dichotomies described in the traditional literature of aggressive behaviors. The most common are direct (which is committed while the target is present in the situation) vs. indirect (this type of aggression is committed in the absence of the victim i.e., passing sarcastic remarks about him, mislabeling, and ascribing fake stories about him to destroy his social standard), affective (it includes the hostile intentions, negative emotions, feelings of hatred, and impulses raised by anger with an intention to harm the target person) vs. instrumental (the perpetrator holds some interest-based provocations against the target instead of inflicting harm), verbal (a hostile tendency to attack and damage the self-concept of others through communication) vs. physical (constitutes of physical attacks and harmful threats towards others through overt actions e.g., hitting, kicking, biting, using weapons, and breaking toys or other possessions), and proactive (it is based upon a planned behavior to attain some goal without being hostile or violent), vs. reactive aggression (this act of aggression is manifested in response to provocation or an alleged or actual peril); which have repeatedly

been discussed in the literature (Anderson & Huesmann, 2003; Fernández, Rodríguez, & Gibbs, 2013; Koolen, Poorthuis, & van Aken, 2012).

Adolescents' aggressive behavior, in any of the aforementioned expression, results from a complex interplay between individual forces, environmental units such as family or school, as well as culture on a broader level. However, the exact identification of the objectives and intentions behind such hostile acts is a difficult and challenging task. There may be many including social imitation or social interaction (Shaver & Mikulincer, 2011) maladaptive peer relation (Malti, 2006), as well as experiences of frustrating or adverse life events (Haller, Harold, Sandi, & Neumann, 2014; Liu, Raine, Venables, & Mednick, 2004; Liu & Wuerker, 2005; Shaver & Mikulincer, 2011). Longitudinal studies have also displayed a predictive link between adverse life experiences and aggressive and delinquent behaviors later in life (Allwood, Baetz, DeMarco, & Bell, 2012; Flouri & Kallis, 2011; Lee, Storr, Ialongo, & Martins, 2012; levers-Landis, Greenley, Burant, & Borawski, 2006; Lloyd & Turner, 2008; Overbeek, Vollebergh, Engels, & Meeus, 2005).

Moderating Role of Cognitive Factors and Personality Traits

Studies have also explored a wide variety of the responses that young people elicit when experiencing traumatic events of same nature, same magnitude, and the same intensity of the stress associated with the events (Rutter 1993, 2006, 2007) depending upon their mental and cognitive abilities, thought patterns, and personality factors. A few researches have particularly focused the factors that can cushion the negative impact of environmental risks on children's mental health. One such protective factor or adaptive resource is cognitive skills (Maddi 2005; Masten, 2001) i.e., verbal and nonverbal intellectual abilities.

Cognitive abilities. The construct of cognitive ability has a complex nature as various researchers have postulated various models to explain the phenomenon. These

theories describe specific intellectual skills (Sternberg, 2003) under the umbrella term of 'cognitive ability/ intelligence' in terms of crystallized ("individual's ability to reason, form concepts, and solve problems using unfamiliar information or novel procedures") and fluid intelligence ("include an individual's acquired knowledge, the ability to communicate one's knowledge, and the ability to reason using previously learned experiences or procedures"; Horn & Cattell, 1966) or verbal and nonverbal abilities. Broadly speaking, the term cognition refers to the ability of an individual to successfully perceive and respond beck to his environment. Cognitive skills can be defined as the brain-based abilities that any individual applies to accomplish any task ranging from simplest to the most complex. They further involve the mechanisms of attention, learning, memory, problem-solving, and decision making (Deary, 2012). These cognitive abilities have been identified to draw specific linkages with the academic performance (Bratko, Chamorro-Premuzic, & Saks, 2006; Chamorro-Premuzic, & Furnham, 2008; Di Fabio & Palazzeschi, 2009; Laidra, Pullmann, & Allik, 2007; Smrtnik Vitulić, & Zupančič, 2011) and future progress (Furnham & Chamorro-Premuzic, 2004) among school aged children. These cognitive skills within school population can be understood and captures with the help of verbal and nonverbal intelligence tests which allow us to assess these skills in a more accurate and standardized manner across educational as well as clinical settings.

Verbal cognitive abilities. The capacity to utilize dialect to carry out specific tasks is called verbal cognitive ability (Cianciolo & Sternberg, 2004). Otherwise stated verbal cognitive ability is the capacity to interpret information and solving problems by the application of linguistic skills (Logsdon, 2010). Verbal intelligence constitutes of the ideas that may be concrete as well as abstract based upon linguistic knowledge i.e. vocabulary, verbal reasoning, or general knowledge (Logsdon, 2010) etc. However, verbal knowledge may likewise be characterized as interpersonal and communicative skill of knowing the

dialectic code, as well as the understanding about the appropriate settings in which any idea can be expressed in the most appropriate manner and to the most relevant person.

Nonverbal cognitive abilities. Nonverbal intelligence comprises of a wider collection of reasoning capabilities involving spatial skills, and artistic abilities such as painting, sketching, diagrammatical reasoning as well as ability of abstract level reasoning. It further contains the higher order mental abilities such as making choices for decisions and inferences depending upon the available pieces of information either factual or fictional. Extending further, making comparison and contrast of diagrams such as identifying similarities and differences, identifying a missing pattern in a sequence or completing the diagrams with the most suitable shape are some of the activity based exercises which are frequently used to assess nonverbal intellectual abilities. Some mathematical expressions and aural exercises involving matching and differentiating non-phonetic sounds and certain type of deductive reasoning may also be regarded part of nonverbal intelligence or cognitive skills.

The term nonverbal cognitive ability, at times, is also coined with the concept of fluid intelligence which is an explicit cognitive mechanism and occurs in a more systematic and controlled manner (Logsdon, 2010). It applies cautious and defined modes for solving problems and making inferences beyond the usage of language. Similarly, in daily life activities, even though verbal expression is the ultimate mode of communication and nonverbal cues seem to be of little significance; people have prompt and bombarded expressions of nonverbal sources including emblems, gestures, postures, facial expression, eye contact and gaze which facilitate as well as compliment the verbal message. In fact, nonverbal intelligence is much more frequently and more readily used than that of verbal intelligence.

Cognitive literature clearly indicates that intelligence quotient (IQ) is a standardized tool of assessing intelligence which covers a wide variety of cognitive abilities (McCall, 1977). Across the whole span of life, IQ is commonly regarded as consistent and stable with high predictive validity; that is to say that one time-point scores of IQ anticipate education and career success in later years of life (McCall, 1977). Simultaneously, researches have tried to know any unexpected variations in the course of IQ stability with respect to brain development. Ramsden et al. (2011) identified strong association with the longitudinal fluctuation of verbal as well as nonverbal cognitive skills with the prospective changes, maturation and growth of brain structure. In an amalgamation of structural and functional tomography of brain, they revealed that verbal and nonverbal intelligence drew distinctive association with the grey matter area in the brain which showed different type of activity while performing verbal tasks i.e. speech and nonverbal tasks i.e. finger movements etc. Shunning many of the individual variation in brain functioning which might confound the findings as reported by numerous cross-sectional studies; Ramsden et al. (2011) followed a longitudinal design which helped them in dissociating specific verbal and nonverbal neural connections.

The neuropsychological operations, associated with intellectual development (particularly related to verbal intelligence) and growth, emerge at the early age in childhood and continue to become specialized and mature with the acquisition of new experiences, interpersonal communication and interactions, and school learning (Finkbeiner & Coltheart, 2009). The interplay between these psychosocial forces makes the whole process multifarious and complex one. However, written skills are acquired relatively in later childhood period and remain a continuous growth process during adolescence and adulthood as the new knowledge and skills are assimilated. The development of overall intellectual abilities is furthered or hampered by a variety of

contextual factors i.e. physical and psychological health, family relations, socioeconomic resources, academic status and circumstances, stimulation in the environment and language development as well (Marturano, 2006; Noble, Farah, & McCandliss, 2006).

Cognitive or intellectual skills have been theorized and explicated under various perspectives; however little attention has been paid to understand their function in adolescent psychopathology or adverse life experiences. At the same time, the literature of developmental psychopathology has always put a question mark on the variability of reactions to traumatic events that why some children are more resilient, better withstand to life adversities, and turn into more healthy and adjusted people than those who become emotionally disturbed (Luthar & Zigler 1991; Masten, 2001). Answering this question, researchers have identified some of the factors that may serve a positive function in the face of adverse life experiences which may be intrapersonal qualities, family characteristics, as well as ecological factors (Garmezy & Rutter, 1983; Greenberg, 2006; Luthar, Cicchetti, & Becker, 2000; Luthar & Zigler, 1991; Maddi, 2005; Masten, 2001; Werner, 2000). At the intrapersonal level, intellectual competence such as verbal and nonverbal cognitive skills serve a key role in cushioning the negative impact of adverse life experiences and subsequent psychopathology in children and adolescents (Pineand & Freedman, 2009).

Particularly, literature has identified the protective role of nonverbal cognitive ability; suggesting that moderate to high level of this skill plays a vital role in minifying the adverse impact of life events on mental health of adolescents (Grant et al., 2006; Masten, 2007). This association may be rooted in cognitive reserve hypothesis which assumes that "high premorbid intelligence, education, an active, stimulating lifestyle, or a physically larger brain provide reserve capacity which protects the individual from the negative effects of aging and disease on brain function." In line with this postulation, empirical

evidence proclaims that cognitive skills (using reserved capacity of brain) not only prevent mental illness or psychopathology (Koenen et al., 2009; Pine & Freedman, 2009; Stern, 2002) but also promote a solution focused approach whenever an adverse situation or stressor is heightened (Fergusson & Lynskey, 1996; Masten et al., 1999). Another study (Flouri, Mavroveli, & Tzavidis, 2011) has tried to explain the mechanism or pathway through which cognitive ability draws its links with stress and developmental psychopathology. Based upon top-down processing theory of emotional regulation or dualism perspective, Flouri et al. (2011) drew a notion that executive level cognitive functioning in humans govern and regulate their lower-order behaviors and emotional responses. The cognitive ability, thus, exerts its effects via emotional regulation to palliate the asperity of traumatic events on mental health or developmental psychopathology.

In a wider perspective, researches have attempted to the pattern of association between stressful life experiences and resultant psychopathology in intellectually disabled children (Hastings, Hatton, Taylor, & Maddison, 2004; Martorell et al., 2009; Tsakanikos, Bouras, Costello, & Holt, 2007). Findings of these studies that experiences of traumatic life events multiplies the odds of psychopathology manifold; such as victimization of cyber-bullying was observed to be related with abbreviated self-esteem as well as a greater level of depressive symptoms (Didden et al., 2009). Using general populations, some studies (i.e., Cooper, Smiley, Morrison, Williamson & Allan, 2007; MacHale & Carey, 2002) observed this possibility that individuals with poor cognitive skills have higher probability of experiencing more negative events e.g. sexual abuse and resultantly suffer from more psychological illness than those with better cognitive abilities.

Regarding overall cognitive abilities, a strong moderating effect has been observed in the association between contextual risk i.e. adverse life events or familial adversities and subsequent emotional and conduct outbursts (Breslau, Lucia, & Alvarado, 2006;

Fergusson & Lynskey, 1996). For instance, Masten et al. (1999) found in their study that general cognitive ability significantly dampened the effect of traumatic stress on sociopathic behavior. More recently, nonverbal cognitive skill has been reported as a key intrapersonal source that serves as a cushion for emotional and behavioral difficulties in face of heightened stress (Flouri & Panourgia, 2011; Flouri & Panourgia, 2012). Nonverbal cognitive skills have been referred to as reasoning skills that involve the processes of thinking, planning, ability to make appropriate decision choices, cognitive appraisal, ability to synthesize, perceptual and visuospatial skills, and problem solving approach which, at one point or other, are the prerequisites to successfully cope with routine life hassles or more stressful or adverse experiences of life (Eysenck & Keane, 2005; Medin, Ross, & Markman, 2001; Plomin & Kovas, 2005).

However, not only the poor cognitive abilities but other cognitive deficits such as maladaptive cognitions or thought pattern may also play a vital role in explaining the variation of reactions to adverse life experiences. Therefore the present study also endeavored to further knowledge on life stress and psychopathology with reference to these thinking distortions as well.

Cognitive errors. Each individual makes evaluations and interpretations (not necessarily by a decision maker) regarding the contextual meanings of experiences and perceived events in his environment, set goals of life, and ascribes meanings to his own and others' actions. Such interpretations and act of attribution have a complex interplay such as judgments regarding the social world activate the formation of cognitive beliefs (relatively enduring in nature) as well as values, which subsequently prospective social evaluation about those beliefs, values and conduct as well. Behavior is then acquired through the assimilated knowledge based upon the beliefs about social world and the motivating values behind those beliefs. However, when these beliefs or values become biased or illogical

somehow, they result into biased and irrational behaviors and this can result in irrational and imprudent justifications of one's actions as well (Ward, Gannon, & Keown, 2005). These irrational beliefs and justifications have been referred to as cognitive distortions or errors in the literature of psychopathology. An abundant of research has studied cognitive distortions from various theoretical explanations with respect to internalizing/ externalizing or emotional/ behavioral difficulties. Literature has characterized these errors into two broader classifications; self-debasing cognitive errors and self-serving cognitive errors which are

Self-Debasing cognitive errors. As the name implies, these thinking errors are self-degrading or self-negating in nature. Such cognitive distortions usually appear as a result of individual's faulty and ineffective information processing owing to their erroneous and inconsistent pattern of thinking which makes their judgments negatively biased towards their own selves. Beck (1967) postulated a theoretical model regarding maladaptive reflexive thoughts which explicate the fundamental falsified and 'depressogenic' cognitive pattern about one's own self, the external world, and the future. Instead of being ego and self-protecting against one's misdeeds, these cognitive errors erroneously degrade the self directly or indirectly which ultimately lead to self-harm.

Beck proposed taxonomy of cognitive variables and characterized cognitive elements into three major domains: "dysfunctional schemas, cognitive distortions/ errors and automatic negative thoughts." The dysfunctional schemas are basically the fundamental beliefs which are strongly embedded in individual's mind and serve as the basement for distorted evaluations of the external environment and events. Cognitive errors can then be described as those actual procedures or mechanisms through which these biased judgments are made while negative automatic thoughts refer to the outputs of

cognitive errors in misinterpretations of the world. Collectively this cognitive triad leads to many kinds of emotional as well as behavioral manifestations in children and adolescents.

These self-degrading thinking distortions have also been described as erroneous or unrealistic beliefs in rational-emotive therapy proposed by Ellis (1977) and as an inclination to ascribe negative experiences or events to more global, internal and consistent factors in learned helplessness theory (Abramson, Seligman, & Teasdale, 1978). Other studies have postulated a strong link between self-debasing thinking distortions and emotional/ internalizing symptomatology (e.g., anxiousness or negative affectivity) among children and adolescents (Quiggle, Garber, Panak, & Dodge, 1992).

Literature shows that emerging researches are increasingly focusing on the examination of cognitive vulnerability in the development and manifestation of childhood and adolescent psychopathology; particularly with reference to maladaptive cognitive distortions (Ara, 2016; Leung & Poon, 2001; Pereira, Barros & Mendonça, 2012; Rehna & Hanif, 2012; Rehna, Hanif, & Tariq, 2012; Weems, Berman, Silverman, & Saavedra, 2001; Weems et al., 2007). As self-debasing cognitive errors erroneously degrade the self hence leading to internalizing suffocation and emotional outburst. Beck (2001) proposed a wide range of maladaptive thoughts; four of which (selective abstraction, overgeneralization, Catastrophizing, and personalization), have been studied extensively in the literature in hand (Leung & Poon, 2001; Leung & Wong, 1998).

Selective abstraction (stimulus focused). This type of cognitive errors stems from attentional limitation beyond the conscious awareness of the individual with a particular focus on negative stimuli. This form of biased thinking more readily attends towards threat and negativity to escape undesirable outcome. More comprehensively, an individual with selective abstraction sort of thinking has an inclination to draw conclusions about some specific event or stimulus or behavior just on the basis of a single minute detail and

disregarding all other contrary information which has more evident and salient features of the situation (Beck, 2011). It just focuses on the disappointing aspects of any situation i.e. "I ruined the whole recital because of that one mistake."

Overgeneralization (response focused). This is a response based thinking pattern which has a tendency to extract a thought or conclusion on the basis of one single or specific experience and apply that rule to all other similar or dissimilar events in quite an irrational and indefensible fashion (Maric, Heyne, van Widenfelt, & Westenberg, 2011). In other words, a unique negative experience is regarded as the archetype of every prospective event i.e. "one bad day at school means school will always be awful."

Catastrophizing. This type of thinking error holds the characteristic of being overly possessed with the worst possible outcome in any hypothetical situation. The individual picks one event he is concerned about and amplify it to the extent that he becomes anxious or phobic. He expects that the prospective situation is going to be adversely dangerous, such as "if it rains there will be a flood Thus" or "I know when I meet the regional manager, I'm going to say something stupid that will jeopardize my job."

Personalization. Personalization is a strong propensity to take the responsibility of any negative event in the environment which may or may not be related to the individual and making it so meaningful for one's self. Being negatively biased towards one's self, this thinking distortion is characterized with the process of ascribing control of negative outcome to more internal and stable cause (Beck, 2011) e.g., "It always rains when I am about to go for a picnic" or "my team lost the game because of me."

Ascription of personalization may well be learned as it gives an illusionary control over arbitrary menacing events. This state of illusion may possibly carry a sense of power to control a chance-determined negative situation and gives the person a belief that he has controlled the environment. This perceived control may lead to a perception that the person

can prevent any damage to such threatening events in the prospect (Langer, 1975). Self-blame also contributes to self-satisfaction that the person has avoided attacking on others hence others will also avoid the same (Gilbert, 1998).

As reported earlier, maladaptive cognitive errors are the core component of Beck's (1967) cognitive vulnerability hypothesis. This model (Abramson et al. 1989; Beck 1967; Beck, 2011) postulates that cognitive content i.e. thinking distortions are likely to place a person at higher risk for developing emotional reactions, such as anxiety and depression, particularly, when an environmental stressor is salient. These cognitive errors are characterized by a negative bias in the interpretations of events which are not based on reality. Even in those cases where there is a more realistic basis for these interpretations, the repetitive nature and the self-deprecating and extremely negative content, causes them to have a significant negative impact on the thoughts, emotions and behavior of individuals, affecting their well-being and adaptive functioning. According to Beck's cognitive model, these cognitive errors are the result of relatively stable negative cognitive schemas, formed during childhood, which guide how information and events are interpreted.

Intellectual papers of Beck and his colleagues suggested that there are people having a strong propensity to amplify the importance of adverse life events by self-blaming and taking the responsibility of that events with an over application of that event and assuming a worst case scenario as an outcome (Beck, Rush, Shaw, & Emery, 1979). These interpretations or malfunctioning thinking errors are regarded subjective and biased in a sense they are irrational and unrealistic conclusions which magnify the negative aspects at the cost of positive or obscure information. A wide range of literature has established strong associations between maladaptive cognitive distortions and internalizing problems such as anxiety, depression, somatic complaints or withdrawal tendencies in children and

adolescents (Bridwell, Steele, Maurer, Kiehl, & Calhoun, 2015; Kingery, Ginsburg, & Burstein, 2009; Maric et al., 2011; Schwartz & Maric, 2015; Stevanovic et al., 2016; Weems & Watts, 2005).

This model also proposes that the content of these cognitive schemas is different in depressed individuals as compared to anxious individuals. More specifically, depressed individuals selectively attend and process negative information and minimize positive information, while anxious individuals selectively attend and process information related to threat and personal vulnerability. Emerging studies have shifted their attention from depression to anxiety by examining biases in different stages of information processing – attention, interpretation and memory – and how these different biases interact to maintain high anxiety among children and adolescents (Daleiden & Vasey, 1997; Muris & Field, 2008; Watts & Weems, 2006). Relatedly, Kendall's (1985) cognitive theory proposes that pathological anxiety results from the chronic hyper-activation of schemes related to personal vulnerability and danger. This hyper-activation would lead individuals, when faced with some kind of threat, novelty or ambiguity, to direct their attentional and processing resources to the information relevant to the threat, resulting in different cognitive distortions. These cognitive distortions would in turn lead to maladaptive thoughts and behaviors.

Contrarily, up till now, only two researches using community samples of adolescents have identified a link between these cognitive errors and adolescents' externalizing symptomatology. Based on self-report measures on general population Leung and Wong (1998) revealed that the level of negative cognitive distortions was comparatively high among adolescents with internalizing symptoms and comorbid problems than those of having externalizing problems or those in control groups. These findings were later replicated by Epkins (2000) with the same results. Though both of the

studies have established a distinction between internalizing and externalizing symptoms with respect to cognitive errors but each study has followed community sample from general population which is commonly perceived to have minimum risk of psychopathology. None of the studies have yet focused at risk community samples for establishing these distinctions.

Self-serving cognitive errors. "Self-serving cognitive distortions are inaccurate or rationalizing attitudes, thoughts, or beliefs concerning one's own or other's social behavior and inaccurate ways of attending to or conferring meaning on experience" (Barriga, Landau, Stinson, Liau, & Gibbs, 2000). The role of maladaptive cognitive errors in the formation and expression of developmental psychopathology has been widely researched with specific linkages to both emotional as well as behavioral outcomes. Barriga, Gibbs, Potter, and Liau (2001) were the pioneers who coined the term "self-serving cognitive errors" to explain the manifestation of externalizing psychopathology among children as well as adolescents. Relevance of these distortions to externalizing problems or sociopathic behaviors has been explained through numerous theoretical standpoints; most important of those is social information processing model (Crick & Dodge, 1994) which assumes that self-serving cognitive biases result from the biased processing of the incoming information in the mind which distorts the reality and lead to rationalizing behaviors. Gibbs, Barriga, and Potter (2001) devised How I Think Questionnaire (HIT-Q) in order to assess self-serving cognitive errors on the basis of four-category taxonomy given by Gibbs and Potter (1992).

Self-centeredness. Self-centeredness is a distorted thought pattern in which the person centers upon his own opinion, motives, desires, moods, and beliefs to the extent that he hardly regards the perspectives and feelings of others. In other words, to fulfill his own

wishes and satisfy his own needs, the person scarcely respects the rights and emotions of others.

Blaming Others. Blaming other is the second important thinking distortion which is characterized with a strong propensity of ascribing blames for one's misdeeds and hurtful acts to the external sources particularly to other individuals, a group of people, or a temporary anomaly (such as being in a bad mood). It may also be defined as attributing one's own biased or misattributing blame for one's exploitation and victimization to fate or other innocent people (i.e. external locus of control).

Minimizing/Mislabeling. Minimizing is a tendency to rationalize one's misconduct as obligatory to attain specific target while mislabeling is dehumanizing others by passing sarcastic remarks. Characteristically this thinking distortion portrays or depicts an illegal or sociopath action as justified, socially acceptable, and even commendable. Moreover an individual holding this thinking pattern gets evil satisfaction by belittling and humiliating other people.

Assuming the Worst. This is an erroneous inclination to superfluously ascribing hostile objectives and intentions to other people by assuming the vilest outcome about any environmental context declaring it inevitable, or believing that there is no probability for improvement in his own or other's social behavior.

These four categories of thinking distortions are further classified into two broader domains named as primary distortions and secondary distortions. Self-centeredness is the primary cognitive distortion characterized by ego centric schemas, beliefs, and attitudes (Gibbs, Potter, Barriga, & Liau, 1996). The rest three (blaming others, mislabeling, and assuming the worst) are secondary cognitive errors. Stemming from the egocentric biasness, self-centeredness is, however, present to a certain degree in all individuals including the responsible adult ones. This might be because of more direct experiences of

our own thinking and ideas whereas; we process others' perspectives and opinions in a more indirect manner (Flavell, Miller, Miller, 1993). Nevertheless, this ego centric distortion usually tends to wane with the growing age. Primary thinking errors, originating from egocentrism, are more frequently prevalent in children and young adolescents which is a stage of pre-conventional and immature moral development (Barriga et al., 2001). Once a child or an adolescent is indulged in some sort of transgression, he is more likely to experience psychological distress associated with the feelings of guilt and a negative self-image. Thus, the secondary type of thinking errors (blaming others, assuming the worst, and minimizing) start emerge which help the child to diffuse the ladened guilt and negative feelings; justify the act of transgression, and reinforce him to keep that act continue. Importantly, these secondary errors may be pre-transgression as well as post-transgression justifications to knock off the self-reproaching thoughts after committing an offense (Barriga & Gibbs, 1996; Barriga et al., 2000; Gibbs, Potter, & Goldstein, 1995; Liau, Barriga, & Gibbs, 1998; Palmer, 2003).

The trajectory of thinking errors depicts that being engaged in any evildoing or aggressive behavior may lead a person to become abashed or remorseful of his misconduct, which directly distorts his belief of being a civilized and good person by nature. This state of conflict raises a sort of cognitive dissonance within the individual which pushes him to apply secondary level cognitive errors to alleviate this frustration or discomfort. As these maladaptive cognitions curtail or completely erase the feelings of self-blame thus guard him against this emotional load. More importantly, where this cognitive pattern guards the person against a negative self-interpretation, it, at the same time, also permit rather elevate aggressive behavior and develop a sense of contentment instead of shame, sorrow, or empathy with the victim (Barriga et al., 2000). As self-debasing thinking errors show closer association with emotional problems; self-serving cognitive errors draw associative pattern

with externalizing or behavioral symptomatology (Barriga et al., 2000) such as delinquent or sociopathic conducts (Andreu, Peña, & Loza, 2013; Barriga & Gibbs, 1996; Barriga et al., 2000; Barriga, Sullivan-Cosetti, & Gibbs, 2009; Capuano, 2011; Plante et al., 2012; Van der Velden, Brugman, Boom, & Koops, 2010). Koolen et al .(2012) further extended these findings and postulated that cognitive distortions do not necessarily work in isolation but they also interact with the relatively permanent and enduring personality traits of individuals and jointly explain psychopathology among adolescents. To understand this complex mechanism, the present study further planned to explore the role of big five personality traits in studying the effects of adverse life experiences and adolescent psychopathology.

Personality Traits. Personality traits are considered as endogenic temperamental characteristics which are biologically determined and remain relatively permanent and stable over time. It was assumed for long that personality is shaped during early years of life and is completely developed by no more than 30 years of age (McCrae & Costa, 1994). Contrarily, later researches argued that average level of changes in personality development is still possible during midlife or elderly period of one's life. The last few decades have tremendously further our knowledge regarding personality traits and have been defined from a multidimensional angle i.e. involving cognitive patterns, affective elements and conduct styles (John, Naumann, & Soto, 2008). Scholars have unanimously agreed to three central points i.e. personality structure (the way particular conduct styles are grouped and organized under umbrella traits), personality development (the way personality characteristics may shape and change in the span of time), and the way personality dimensions impact various important arenas of one's life (Caspi, Roberts, & Shiner, 2005). A major part of this personality literature has primarily focused adult age reflecting personality as more grown up psychological aspect (Caspi, et al., 2005).

However, emerging literature has started putting emphasis on personality development in children and adolescents as well. These studies have tried to applied the structure of adult personality to youth theorizing that personality traits of children and adolescents are structured in an orderly manner (Soto & John, 2014; Tackett, Krueger, Iacono, & McGue, 2008; Tackett et al., 2012) similar to that of adults (Soto, John, Gosling, & Potter, 2008; Tackett et al., 2012). Despite a variety of labels assigned for personality traits, a large body of literature provides support for 'Big-five' model of personality propose by McCrae and Costa (1987) discussed as under.

Neuroticism. Neuroticism can be best described as the propensity to attend negative feelings and low affectivity more readily such as annoyance, anxiousness, melancholy and susceptibility (Jeronimus, Riese, Sanderman, & Ormel, 2014). Neuroticism additionally indicates to the level of 'emotional stability' and controlling basic impulses and is usually defined as being on low pole of both traits thus named as emotional instability. An emotionally stable personality carries higher need of consistent and positive emotional expression whereas an emotionally instable hold lower level of this need being nervous, insecure, and volatile in nature (Toegel & Barsoux, 2012). They react sincerely to occasions that would not influence a great many people, and their responses have a tendency to be more extreme than ordinary. They will probably translate normal circumstances as debilitating, and minor dissatisfactions as miserably troublesome. Their negative affective responses tend to persevere for abnormally drawn out stretches of time, which implies they commonly hold this terrible temperament (Norris, Larsen, & Cacioppo, 2007). These issues in emotional appraisal can reduce a neurotic capacity to think positively, being decisiveness, and to deal with stress or aversive stimuli efficiently (Norris et al., 2007).

Moreover, individuals with high scores on neuroticism more frequently experience dissatisfaction with their lives and have an inability to deal with this discontentment which likely produces the symptoms clinical depression (Caspi, Roberts, & Shiner, 2005). Similarly they show higher tendencies of experiencing stressful situations which further aggravate their level of neuroticism (Jeronimus, Ormel, Aleman, Penninx, & Riese, 2013; Jeronimus, Riese, Sanderman, & Ormel, 2014) and resultantly they have been observed to develop different types of internalizing (i.e., anxiousness, social withdrawal, or negative affect) and externalizing behavioral problems (Ehrler, Evans, & McGhee, 1999; Muris, Meesters, & Blijlevens, 2007; Van Leeuwen, Mervielde, Clercq, & De Fruyt, 2007). On the other side, individuals with lower degree of neuroticism are less likely to get disturbed and emotionally reactive and tend to experience more positive emotions which are characteristics of extravert people.

Extraversion. Extraversion can be referred to individual's marked involvement with the outer world and characterized by brim of energy, sociability, enthusiasm, excitement for new opportunities, and frequent experience of positive feelings (Laney, 2002; Toegel & Barsoux, 2012). In gatherings they jump at the chance to talk and being influential they remain the focus of attention (Olakitan, 2011). However, an exaggerated degree of extraversion is associated with an inflated need of attention and authoritarianism (Toegel & Barsoux, 2012). On the other continuum of extraversion, stands a personality (referred to as introvert) which has an intelligent, self-restrained, withdrawn, and at times apprehended identity. Introverts are deficient in the level of enthusiasm, vitality, and activity than those of extraverts. They typically propend to be quiescent, subdued, cautious, and detached from the outer world. However, these traits do not necessarily mean that they are shy, under-confident, or depressed; they just have a minimum need of stimulation, they

like to be alone contrary to extraverts and are more autonomous and self-regulated than extraverts (Rothmann & Coetzer, 2003).

By and large, there are at least three fundamental attributes of extraversion that make it imperative to research on. In the first place, extraversion has egressed as one of the key attributes of personality (Costa & McCrae, 1992; Goldberg, 1990). Intrinsically, extraversion can potentially explicate the variation of a broader range of behaviors and conducts which is the core concern of personality psychology (Funder, 2001). Next, extraversion trait is a strong predictor of well-being, healthy adjustment, and efficient work execution across a wide array of functioning spheres (Ozer & Benet-Martinez, 2006) ranging from cognitive execution (Matthews, 1992) and social strives (Eaton & Funder, 2003) to socio-economic standards (Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007). Thirdly, extraversion is also linked with menace as well as resilience against a variety of psychopathologies (Widiger, 2005).

Defining on three fundamental psychological domains, researchers suggest that extravert people have persistently been observed to experience more positive moods (Affective domain; Costa & McCrae, 1980; Lucas & Baird, 2004) with an average correlation of r = .40 (Lucas & Baird, 2004), have a relatively brighter and positive perspective about the environment assigning positive valence and positive interpretation to the neutral situations (Cognitive domain; Uziel, 2006), and thus are more sociable, more talkative, and more energetic than those with lower level of this trait (Behavioral domain; Mehl, Gosling, & Pennebaker, 2006). Furthermore, lower level of extraversion is discovered to be associated with different forms of psychopathology i.e., personality disorder (Widiger, 2005), anxiety, depression (Jylha & Isometsa, 2006), and many other disorders (Costa & Widiger, 2002; Markon, Krueger, & Watson, 2005).

Agreeableness. Agreeableness is a propensity to be empathetic and accommodative instead of being distrustful and hostile towards others. It is likewise the degree of one's confiding and accommodating nature, and the extent to which the individual is typically well-groomed. Being conventional, reliable, adaptable, generous, and trusting, agreeable people value social harmony and collaboration, perceive others as honest, and innocent, and readily compromise their interests to please others (Matsumoto & Juang, 2012; Rothmann & Coetzer, 2003; Thompson, 2008). Being higher on agreeableness dimension of personality is generally perceived as ingenuous and submissive whereas low level of agreeableness is considered a trait of belligerent, competitor, rigid, intriguing, and suspicious personality (Bartneck, Van Der Hoek, Mubin, & Al Mahmud, 2007; Toegel & Barsoux, 2012).

Research is now increasing focusing childhood and adolescence time period to understand various dimensions of personality and its correlates (Ghaderi & Ghasemi, 2012; Jensen-Campbell et al., 2002; Koolen et al., 2012; Rothbart, Ahadi, & Evans, 2000) in a way which may link these conceptual and empirical findings in order to predict adult personality in later life. Particularly talking about agreeableness domain, children with higher level of this trait have little threats of peer rejection because of their sensitivity and concern for others' needs and opinions. Rather being less problematic, less hostile, and more flexible have greater chances to get acknowledgment by their peers (Bierman, 2003).

Another study revealed that agreeable youth is emotionally more responsive and is better able to control negative affect in a controversial situation than their counterparts by applying conflict-avoidant measures (Jensen-Campbell, & Graziano, 2001; Tobin, Graziano, Vanman, & Tassinary, 2000). They readily withdraw in favors of their adversary and are less likely to argue with low agreeable children as well as they also try to avoid argumentation with their congenial relationships to the maximum (Graziano, Habashi,

Sheese, & Tobin, 2007). Another study theorized that high degree of agreeableness and friendly compliance during the period of adolescence strongly predicted high academic achievement, social competence, and cultured behaviors later in life (Shiner, 2000). In short, agreeableness is an interpersonal attribute which is linked with psychological well-being, positive mental health, positive moods, healthy interpersonal relationships and tenderness (Laursen, Pulkkinen, & Adams, 2002).

Conscientiousness. Characteristically, conscientiousness is a propensity to be structured, controlled, reliable, disciplined, dutiful, achievement-oriented and well planned instead of being abrupt or impulsive (Costa, & McCrae, 1992). Exaggerated level of conscientiousness is conceived as obstinate, workaholic, and obsessed with perfectionism (Carter et al., 2015) whereas the lower extreme is marked by being spontaneous, messy, unreliable, and also criminogenic (Ozer & Benet-Martinez, 2006; Toegel & Barsoux, 2012). Conscientiousness functions on the mechanisms through which individuals control, manage, and coordinate their motivations and impulses and it is articulated in their overt actions i.e. being cautious, thoughtful, deliberate, tidy and organized (Thompson, 2008). By and large, conscientiousness draws a positive association with eudemonia, especially contentment with life, thus highly conscientiousness individuals have a tendency to be more satisfied with their lives than the individuals lower level of this trait (Steel, Schmidt, & Shultz, 2008).

Literature shows a gradual change and maturity in the development of conscientiousness trait (Roberts, Walton, & Viechtbauer, 2006; Srivastava, John, Gosling, & Potter, 2003) which is linked with the transitional roles from childhood to adulthood (Bleidorn, Klimstra, Denissen, Rentfrow, & Potter, 2013; Roberts & Wood, 2006). Recent studies have speculated that this personality dimension can unequivocally be found in children and adolescents as it is manifested in adulthood (Soto & John, 2014; Tackett, et

al., 2008). However this manifestation can be best described in a u-shaped developmental curve as Denissen, van Aken, Penke, and Wood (2013) found in their meta-analysis that the average degree of conscientiousness trait decreased in early to middle adolescence and then started increasing again from late adolescence period.

At the same time, studies have documented cross-sectional as well as predictive relationship of conscientiousness with higher academic achievement (Duckworth & Seligman, 2005; Jackson, et al., 2010), self-discipline (Duckworth & Seligman, 2005), positive physical health (Hampson, Goldberg, Vogt, & Dubanoski, 2006; Takahashi, Edmonds, Jackson, & Roberts, 2013), healthy interpersonal relations (Wood, Larson, &, Brown, 2009), and fewer emotional and behavioral difficulties (De Bolle, Beyers, De Clerg, & De Fruyt, 2012).

Openness to Experience. Openness is typically characterized by discernment for artwork, sensitivity to feelings and beauty, venture, novel themes, intellectual inquisitiveness, fantasies, and assortment of experience (Thompson, 2008). In comparison with others, they are more inventive, cognizant of their sentiments and feelings, and tend to have unorthodox beliefs. However, an individual high on openness is quite likely be curious and novelty seeking but not necessarily hold interest in artworks or poesy (Toegel & Barsoux, 2012). Openness to experiences has been reported to account moderate or average degree of relationship with various accepts of personal wellbeing (Steel et al., 2008). Furthermore, religious fundamentalism as well as traditional religious beliefs has been documented to draw negative associative patterns with openness trait whereas spirituality lined positive connection with high openness (Saroglou, 2002). Nevertheless, no consistent findings have been document regarding associations between openness trait and developmental psychopathology (Klimstra, Hale III, Raaijmakers, Branje, & Meeus, 2009).

The relationship between adolescent personality and problem behavior has been well documented (Cooper, Agocha, & Sheldon, 2000; Hoyle, Fejfar, & Miller, 2000; Loukas, Krull, Chassin, & Carle, 2000). In a recent review and theoretical analysis, Shiner and Caspi (2003) described several processes that could be involved in the connection between Big Five personality traits and psychopathology and emphasized that the (social) environment plays a role in all these processes. Finch and Graziano (2001) and Finch, Okun, Pool, and Ruehlman (1999) found empirical support for an indirect effect of adolescent personality on problem behavior through social relations. Adolescents' Agreeableness and Neuroticism exerted an effect on depression through two qualities of social relations (social support and negative social exchange), while adolescents' Extraversion exerted an effect on depression through one of these qualities of social relations (social support). Neuroticism also exerted a direct effect on depression. Only in the study of Finch et al. (1999) Extraversion also contributed directly to depression.

Generally speaking of personality traits, literature provides sound support for the interactive effects of adverse life events and personality traits on emotional and behavioral problems. Because severely stressful events are rare, most studies are limited to assessing personality in the aftermath of traumatic events. These studies suggest that individuals suffering from emotional problems have a distinct personality profile characterized by high neuroticism (Chung, Berger, & Rudd, 2007; Chung, Dennis, Easthope, Werrett, & Farmer, 2005), low extraversion (Chung et al., 2005), and low agreeableness (Chung et al., 2007; Talbert, Braswell, Albrecht, Hyer, & Boudewyns, 1993). The few studies that measured aspects of personality traits before a traumatic event found that participants who show high baseline levels of neuroticism (Bramsen, Dirkzwager, & Van Der Ploeg, 2000) and possibly openness (Knezevic, Opacic, Savic, & Priebe, 2005) are more likely to show symptoms of posttraumatic stress. Moreover, those with higher neuroticism scores

immediately after a traumatic experience are more likely to develop symptoms of posttraumatic stress later on (Fauerbach, Lawrence, Schmidt, Munster, & Costa, 2000).

These studies show that neuroticism is a major risk factor for the development of depression and anxiety. Neuroticism is one of the major temperamental basic personality traits, which appears to be stable over time during adulthood and to a large extent genetically determined (Watson, Gamez, & Simms, 2005). High levels of neuroticism are associated with increased risk for major depression and other affective disorders (Clark et al., 1994). Two models have been proposed on the relation between neuroticism and adverse life events. In the first model, adversity and neuroticism contribute independently to the vulnerability of depressive disorders, whereas in the second model it is assumed that besides increasing the overall risk of illness, higher levels of neuroticism also increase the impact of adversities (Kendler, Kuhn, & Prescott, 2004). Moreover, neuroticism may also be associated with a greater likelihood of exposure to adverse life events (e. g., Magnus, Diener, Fujita, & Pavot, 1993), while negative life events may also have a moderate effect on neuroticism (Middeldorp, Cath, Beem, Willemsen, & Boomsma, 2008).

Role of Demographic Variables

Studies have highlighted that other than psychological factors, there are a number of demographic variables that significantly contribute to the manifestation and maintenance of adolescent psychopathology. These demographic variables may include gender, age, family system and socioeconomic status of children or adolescents.

Gender. Literature provides empirical evidence for the significant role of gender in the development of emotional and behavioral psychopathology and suggested an earlier onset and higher rates of emotional symptoms among girls and vice versa for conduct problems (Bongers, Kout, vander Ende, & Verhulst, 2004; Li & Prevatt, 2008). Other studies have reported higher levels of internalizing outcomes (i.e., anxiety,

withdrawal, depression and somatic complaints) for female adolescents while externalizing symptoms have been observed with greater ratios among male adolescents (Angold, Erkanli, Silberg, Eaves, & Costello, 2002; Carter, Jaccard, Silverman, & Pina, 2009; Garnefski, Kraaij, & van Etten, 2005; Kingery, Ginsburg, & Alfano, 2007; Shaw, Dallos, & Shoebridge, 2009; ZahnWaxler, Shirtcliff, & Marceau, 2008). Similarly Bruno (2010) found that girls commit greater number of self-debasing cognitive errors which are more closely associated with internalizing symptomatology while boys show more frequent numbers of self-serving thinking errors (commonly present with externalizing psychopathology) in making interpretations and judgements. Significant gender differences have also been observed for other personal factors e.g. personality traits where girls have been shown with higher level of neuroticism and agreeableness whereas boys have been seen with more prominent features of extraversion, openness and conscientiousness (Chapman, Duberstein, Sörensen, & Lyness, 2007; Costa, Terracciano, McCrae, 2001; Schmitt, Realo, Voracek, & Allik, 2008).

Age. Studies, while making age wise comparisons, have stated inconsistent findings for intensity, magnitude and frequency of emotional and behavioral difficulties among adolescents. For example, some studies (i.e., Liu et al., 2000; Yang, Li, Zhang, Tein, & Liu, 2008) report that problem behaviors occur more frequently and with greater intensity in younger adolescents while other studies (Bilancia & Rescorla, 2010; Cederblad, Pruksachatkunakorn, Boripunkul, Intraprasert, & Hook, 2001; Montague, Cavendish, Enders, & Dietz, 2010) have reported the same for older adolescents. Similar kind of inconsistent findings have been reported for cognitive distortions e.g. Bruno (2010) found that greater number of self-debasing and self-serving cognitive errors were committed middle adolescents rather than younger or older adolescents group. However previous studies (Barriga et al., 2000; Frey & Epkins, 2002) have stated non-significant

age differences on both types of errors. For personality traits, studies have shown a gradual stability and maturity from early childhood to adolescence and to adulthood period i.e. as people age they become more agreeable, more conscientious and less neurotic (Roberts, et al., 2006). However again, some studies (i.e., Soto & Tacket, 2015) have argued that developmental transitions cause irregular and momentary swims in the developmental and maturational patterns of personality traits during the course of adolescence.

Family system. Family system has also been considered a strong correlate of adolescents' emotional and conduct problems in the studies of mental health. For instance, researchers have postulated that children with smaller family size or nuclear family structure experience only a handful of problem behaviors than those living with larger families in joint family structures (Luoma et al., 1999). The rudimentary factors in joint or larger family system that accompanied internalizing or externalizing psychopathologies may involve poor affective involvement, communication gaps, lack of warmth in family interactions, and poor quality time to assess and meet the psychological needs of children (e.g. Crawford & Manassis, 2010; Henderson, Dakof, Schwartz, & Liddle, 2006; Kapi, Veltsista, Kavadias, Lekea, & Bakoula, 2007). Similar patterns have also been observed by Rehna and Hanif (2012) for self-debasing cognitive errors. In their study with depressed adolescents, they found that adolescents from joint family system were more likely to commit cognitive distortions while making judgements in comparison to those from nuclear families. The reasons behind may be the same as those of emotional and behavioral problems with an addition that parents in joint families usually give their children little autonomy for independent decision making which hamper their self-confidence and may distort their cognitive processing while making interpretations of the environment.

Socioeconomic status. Another salient demographic factor that has a strong impact in the development and manifestation of psychopathology is socioeconomic standing of the targeted population (Amone-P'Olak et al., 2009; Guerrero, Hishinuma, Andrade, Nishimura, & Cunanan, 2006; Lorant et al., 2003; Slobodskaya & Akhmetova, 2010). Across cultures, an ample of empirical data has supported the assumption that children and adolescents from poor socioeconomic structures tend to be at greater risk for developing psychopathology e.g. emotional and behavioral outbursts than those from middle or upper economic status (Costello, Keeler, & Angold, 2001; van Oort, van der Ende, Wadsworth, Verhulst, & Achenbach, 2011; Wadsworth & Achenbach, 2005). Similar findings have been reported for self-debasing cognitive errors (Karakaya et al., 2007; Rehna & Hanif, 2012) as well. However, no research has highlighted the role of family system or socioeconomic status in eliciting self-serving thinking distortions.

Summing up the debate, the problem of child and adolescents psychopathology is even awful and worth indeed to explore in Pakistan which has been riddled with multiple stressors such as poor socioeconomic conditions, maltreatment, extremism, terrorism, and ill facilities of health for the last many years. This unfortunate and adverse scenario is imperiling its youth towards hazardous physical and mental health outcomes. The problem is, in fact, shrouded in the negligence and irresponsibility of the policy makers, health care institutions and researchers as well; as the more sensitive is the subject the less research has been focused on it.

Rationale of the Study

The relationship between adverse life events and the subsequent emotional and behavioral problems has extensively been studied (Flouri & Panourgia, 2011; Leadbeater, Blatt, & Quinlan, 1995; Rutter 2007). These researches argue that adverse life events increase the vulnerability for emotional problems of adolescents for example anxiety, depression, and conduct problems or antisocial behavior (Gore, Aseltine, & Colten, 1992; Leadbeater et al., 1995; Stouthamer-Loeber, Loeber, Homish, & Wei, 2001; Thornberry, Ireland, & Smith, 2001). At the same time, studies demonstrate that cumulative life stress instead of a single stressor manifold the risk for psychopathology (Aneshensel, 1992; Jackson & Warren, 2000; Kessler, Davis, & Kendler, 1997). These researches, however, also suggest that individual/social conditions influence the variability in how different individuals react to the same level of stress (Conger, 1995). For example, thinking patterns (particularly cognitive errors) are the ones, which have been documented as risk factor (Flouri & Panourgia, 2011) exacerbating the effect of adverse life events on adolescents psychopathology.

But only few of the studies modeling contextual risk effects on children's emotional and behavioral problems have examined factors that 'buffer' these effects. One such protective factor or adaptive resource is intellectual competence (Masten, 2001; Masten, et al., 2004) such as verbal and nonverbal cognitive abilities. Only one study (Flouri & Panourgia, 2011) has so far highlighted the role of nonverbal cognitive ability in studying the relation between life stress and adolescent psychopathology. But verbal cognitive skills have not been studied in this context yet. Whereas cognitive abilities (verbal and nonverbal) may play a crucial role in buffering the effect of life stress as these are the skills to process information and solving problem. These abilities are directly linked to how a threat is assessed and processed, resources are accessed or healthier environments or

relationships are sought (Masten et al., 1999) to minimize the probability of a negative outcome. Despite being that important, cognitive abilities have continuously been ignored in the research of life stress and resultant psychopathology among children and adolescents. Similar effects were shown with personality traits. Although, studies have demonstrated their predictive link with psychopathology (Löckenhoff, Terracciano, Patriciu, Eaton, & Costa, 2009) but how these traits function when a stressor is heightened is yet to explore.

Based on the gaps in the literature given above, the present study is an effort to provide an understanding of the concepts and the underlying mechanism of emotional and behavioral problems. Moreover the study is aimed to further knowledge on how verbal and nonverbal cognitive abilities, cognitive errors and personality traits interactively play a moderating role in effects of adverse life events on emotional and behavioral problems of adolescents. Investigating the adverse life events and emotional and behavioral problems among Pakistani adolescents is important for many reasons. First and foremost, without this knowledge, it would be difficult to determine prevention, intervention and research needs of any society. Especially in Pakistan which already has persistently been riddled by poor socio-economic conditions, low literacy rate, political instability, and meager healthcare profile (Gadit & Khalid, 2002; Mirza & Jenkins, 2004), this is very much required for many specific reasons including the need of creating awareness about the gravity of the problem, its high cost and serious consequences. Unfortunately, there are not any or very few reliable and valid data available in Pakistan regarding adolescents' behavioral problems and the underlying mechanisms. Though, a number of researches have been conducted on adult issues, only a few studies deal with adolescents' problems (i.e., Hussein, 2008; Loona, 2012; Shamama-tus-Sabah, Gilani, & Wachs, 2011; Syed & Hussein, 2009). But these studies have highlighted the role of social factors in relation to

life stress or psychopathology e.g. family and work environment, parenting styles, parental acceptance-rejection, and type of schools etc. Studies exploring the role of personal factors i.e. personality characteristics or cognitive processing such as thinking styles and intellectual competence in the presence of life adversities and psychopathology are scarce. That is why the present study was designed to explore these important aspects of adolescent psychopathology so that these dimensions can be incorporated in the assessment, prevention and intervention processes appropriately.

Conceptual Model of the Study

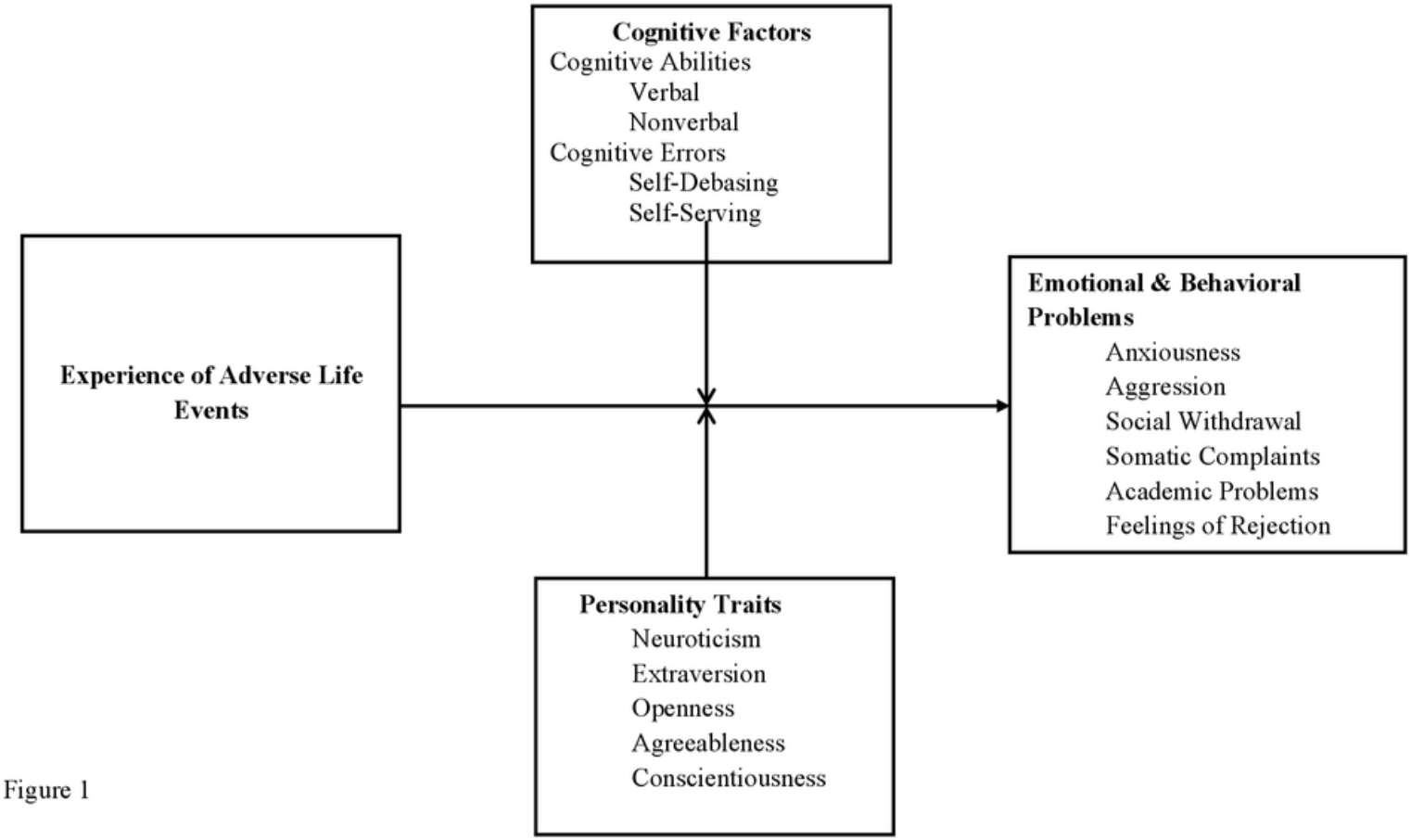

Figure 1

Chapter II

Method

Research Design

The present study was purported to examine the impact of the experience of adverse life events on adolescents' emotional and behavioral problems and to study the moderating role of cognitive factors and personality traits. In order to meet these objectives, the present study was conducted in three phases:

Phase-I: Development and translation of scales. First phase of the study was aimed at developing Adverse Life Event Scale (ALES) to assess the experiences of adverse life events of adolescents and translating How I Think Questionnaire (HIT-Q) to measure self-serving cognitive errors committed by adolescents. Other study scales were already developed, translated, and validated in the indigenous perspective of Pakistan.

Phase -II: Pilot study. The second Phase in the present research was Pilot Study which was carried out to validate ALES, Children Negative Cognitive Errors Questionnaire (CNCEQ) and HIT-Q, to develop other psychometric properties (reliability coefficients and item-total correlations) of the study Scales and examine the relationship between the study variables.

Phase -III: Main study. In Phase-III, Main Study was conducted which was primarily aimed at testing the hypotheses of the study.

Phase-I: Development and Translation of the Scales

This phase was further carried out in two steps:

1. The development Adverse Life Event Scale (ALES)
2. Translation of How I Think Questionnaire (HIT-Q)

Step-1: Development of the adverse life event scale (ALES). At the first step of this phase a scale was developed to explore adverse life events among adolescents if they had experience any during the past 12 months. Although a number of scales (Adverse Life Events Scale: Tiet et al. 1998; Life Events Checklist: Johnson & McCutheon, 1980; Life Event Questionnaire: Norbeck, 1984; The Life Events Checklist: Stack, Haldipur, & Thompson, 1987) have been establish in the Western cultures to assess adverse life events; but these measures have targeted adult population in general and no specific items related to adolescents' experiences have been added in these measures. Moreover some particular adversities were missing in these measures which are unfortunately very common in Pakistan; i.e. sectarian conflicts/ riots, extremism and terrorism etc. Owing to these limitations, the present study needed to develop a scale to bridge these gaps and particularly target the adolescent population. According items were devised with respect to the nature of the event and the level of stress that event had on the adolescents. The scale was developed into the following stages:

Stage -I: Literature review. At the first stage of the study literature was thoroughly reviewed regarding adverse life events e.g. what type of events the literature categorizes as adverse events and also to identify the nature, magnitude, and severity of the stress associated with those events. Moreover some questionnaire/scales devised to assess adverse life events i.e. Life Event Questionnaire (LEQ; Norbeck, 1984), Adverse Life Events Scale (ALES; Tiet et al. 1998), The Life Events Checklist (LEC; Stack et al, 1987)

and Life Events Checklist (LEC; Johnson & McCutheon, 1980) were also consulted for the development of the Scale.

Stage -II: Focus groups discussions (FGDs). At the second stage of the study, six Focus Group Discussions (FGDs) were held with adolescents, parents and teachers to gather the public perspective on adverse life events. Two FGDs were conducted with adolescents (N = 20; 5 boys and 5 girls in each focus group) with an age ranged from 12 to 18 years. Two FGDs were held with parents (N = 19) with an age ranged from 32 to 51 years. One focus group was conducted with mothers (N = 11) while the second was held with fathers (N = 8). Two FGDs [one with female teachers (N = 10); one with male teachers (N = 8)] were carried out with secondary school teachers having age ranged from 26 to 48 years. The purpose of these FGDs was to explore the cultural diversities regarding adverse events e.g. an event may be considered as "adverse" in West but that event may not be considered adverse in Pakistani context. Moreover, it also purported to explore the adverse events with a particular focus on adolescent age range as none of the measures, in hand, deals with adolescents' adverse life experiences but focuses on the adult population. A focus group guide was prepared consisting of five questions (See *Appendix II*) and questions were asked in an orderly manner. In each FGD, participants were first briefed about the nature and objectives of the study and each FGD approximately took 40 to 50 minutes to complete the discussion. After completing each FGD, data, gathered, was transcribed and items were extracted for the scale.

Stage -III: Generation of item pool. After gathering data through a thorough literature review and exhaustive FGDs, the next phase was consisting of item writing. At this stage 72 items were written under theoretically derived categories e.g. 'Health related events', 'School related events', ' Residence related events', 'Personal and Social Events', Family and Friends related Events', and 'Natural Disasters'. The scale was developed in

such a format that subjects first had to indicate whether they had experienced the event or not (as Yes or No) and then to rate the impact of the event on a 4-point rating scale (i.e., not at all = 1, slightly = 2, to a greater level = 3, very much = 4). Total score of ALES is calculated by summing up the impact rating of all the items of the scale.

Stage-IV: Subject matter experts' review. After writing the items, a committee approach of the three subject matter experts (Ph.D. scholars and Doctors who had a good understanding of test development and administration and had expertise in the field of adolescent development) was conducted to review the scale critically. Experts reviewed the content, format and the face validity of the scale. After their joint consensus two items were removed from the scale as they were not considered as adverse events by any of the reviewers. 14 items were suggested as double barreled so they were suggested to restate as separate items. One item was added by the experts as a male specific item equivalent with the menarche (first menstrual period) for females. Few items were suggested to rephrase appropriately and rest of the items were considered as having good face validity.

Stage-V: Finalization of items pool. After taking the subject matter experts' review and opinion a scale with 85 items/events was finalized under the same categories for using in the present study.

Stage-IV: Pre-testing of the questionnaire. The final stage of step-1 was pre-testing of the scale in the pilot study. This pretesting was done with a sample of 303 adolescents who had experienced any adverse life event during the past one month. The purpose of the pre-testing was to establish the psychometric properties of the scale (See *Appendix III*).

Step-2: Translation of how I think questionnaire (HIT-Q). The second step of this phase comprised of the translation of "How I Think Questionnaire (HIT-Q)." HIT-Q measures self-serving cognitive errors and was originally developed by Gibbs et al. (2001)

HIT-Q has been used by various investigators to measure self-serving cognitive errors of children and adolescents (Andreu & Peña, 2013; Barriga, et al., 2009; Capuano, 2011; Plante et al., 2012). For using in the present study, HIT-Q was translated through a back translation method in order to check the semantic equivalence of the translated version. Translation was done in the following stages:

Stage-I: English to Urdu translation. At the first stage of this phase the scale was translated from English to Urdu language. For this purpose five scholars having excellent bilingual understanding were approached to make the translations. These scholars were (1) having the clarity and understanding of the original language (English) with a high probability of finding a readily available target language equivalent, and (2) were able to produce targeted language items readily understandable by the eventual set of respondents. The experts were briefed about the purpose and nature of the study.

Stage-II: Committee approach. After completing the initial translation, all the translations were reviewed from experts (having good bilingual understanding) by applying "Committee Approach". The experts were requested to scrutinize the translated items carefully, and select items conveying the best context, grammar and wording; and were also apprised to verify the "cultural and semantic equivalence" of the items.

Stage-III: Back translation. After the final selection of the Urdu translated items of How I Think Questionnaire (HIT-Q), those items were again translated back into English. Again a group of five bilingual experts were contacted to translate the Urdu translated items into English. The purpose of the back translation was to check the accuracy of the Urdu translations.

Stage-IV: Committee approach. After completing back translation, the final committee approach was conducted for the selection of back translated items. The judges were advised to scrutinize and match the back translated items with the original scale's

items to verify the contextual and semantic equivalence of both (original English, *Appendix VIII*; translated English, *Appendix X*) versions.

Stage-V: Finalization of hit-q for pilot study. After the committee approach of the back translation the items were finalized for the scale (See *Appendix IX*) to administer in the pilot study.

Chapter III

Phase-II: Pilot Study

Objectives

Pilot study was carried out with the following objectives:

- To validate Adverse Life Event Scale (ALES) developed in Phase-I of the present study
- To determine the construct validity of HIT-Q and Children Negative Cognitive Errors Questionnaires (CNCEQ)
- To determine the psychometric characteristics of all the study scales
- To explore the trends of relationship between study variables

Sample

Sample of pilot study comprised of 303 adolescents (boys = 139, Girls = 164) with an age ranged from 10 to 19 years (M = 14.83, SD = 1.16). This age range for adolescence period has been given by World Health Organization (WHO, 2014). Sample was collected from different Government schools of Islamabad through a purposive convenient sampling method. Participants were studying in 7th (4.6%), 8th (38.3%), 9th (25.4%), and 10th (25.4%) grades of their schooling while 57% belonged to joint family system. Initially 340 (boys = 161, Girls = 179) adolescents were approached with an attrition rate of 11% as 37 participants withdrawn from the research after completing half or less questionnaires. Data of these 37 participants was discarded and a final sample of 303 adolescents was used to meet the objectives of the pilot study. Following (Table 1) are given the frequencies and percentages of demographic specifications of the final sample.

Table 1

Frequencies and Percentages of Demographic Characteristics of Sample (N = 303)

Variables	*f*	*%*
Gender		
Boys	435	66
Girls	228	34
Missing	0	0
Age		
Early Adolescents	40	13
Middle Adolescents	138	46
Late Adolescents	92	30
Missing	33	11
Family System		
Nuclear	130	43
Joint	173	57
Missing	0	0
Income Group		
Lower (≤ 24000)	91	30
Middle (42100-40000)	134	44
High (≥ 40100)	64	21
Missing	14	5

Instruments

Following instruments were used in the pilot study:

1. **Adverse life events scale (ALES).** Adverse Life Events Scale was developed in the first phase of this study. ALES (*Appendix III*) consists of 85 items under six theoretically derived categories 'Health related events', 'School related events', 'Residence related events', 'Personal & Social events', Family & Friends related events', and 'Natural Disasters'. ALES is a checklist-cum-rating scale on which adolescents first indicate whether they have experienced the event or not (with a dichotomous response i.e., Yes/No) and then they rate the level of the stress they experienced because of that event on a 4-point

rating scale (i.e., not at all = 1, slightly = 2, to a greater level = 3, very much = 4). Total score of ALES is calculated by summing up the impact rating of all the items of the scale.

2. **School children's problems scale (SCPS).** School Children's Problems Scale (SCPS; *Appendix IV*) was used in the present study to measure emotional and behavioral problems of adolescents. The scale was developed by Saleem and Mehmood in 2011. The scale comprises of 44 items on a Likert type 6-point rating scale ranging from 0 = not at all to 5 = extremely common. SCPS consists of six subscales namely Anxiousness, Academic Problems, Aggression, Social Withdrawal, Feeling of Rejection and Psychosomatic Complaints. High scores on each subscale predict that the adolescent has the high level of that problem. SCPS was found to be a reliable (test-retest reliability = 0.79 and split half reliability = 0.89) and a valid scale with acceptable psychometric properties (Saleem & mehmood, 2011).

3. **Sajjad verbal intelligence test Urdu (SVITU).** Sajjad Verbal Intelligence Test Urdu (SVITU; *Appendix V*) was used to measure the verbal cognitive ability of adolescents. The test was developed, validated and standardized by Hussain (2001). The test comprises 128 multiple choice items with four subscales (vocabulary = 42 items, numerical = 36 items, verbal reasoning = 20 items, and general knowledge = 30 items). True answer is given 1 score and false answer is given 0 score. Total scores range between 0-128. Higher score on any domain shows the higher level of that ability. Hussain (2001) has reported good concurrent and construct validities and highly acceptable reliabilities i. e. KR-20, test-retest, and split-half (.92*, .86* and .86* respectively) reliabilities.

4. **Raven standard progressive matrices (RSPM).** Nonverbal Cognitive Ability of adolescents was measured with Raven's Standard Progressive Matrices (RSPM; Raven 1938). The RSPM (See *Appendix VI*) measures ability to form perceptual relations and to reason by analogy independent of language and formal schooling. The RSPM presents

participants with 60 items (visual puzzles) in five sets (A, B, C, D, & E) with 12 items on each set. Each puzzle is made up of a matrix (usually 2×2 or 3×3) showing change along both x and y axes. From each item one piece is missing and must be identified by multiple choice from six options (sets A and B) or eight options (sets C–E). Difficulty increases progressively within each set, and from one set to the next. Higher score on the total scale shows high nonverbal ability of the child/ adolescent. The RSPM has good test-retest reliability over periods of up to a year across a range of cultures and very good concurrent and construct validity (Raven 2000).

5. **Children's negative cognitive errors questionnaire (CNCEQ).** Children's Negative Cognitive Errors Questionnaire Urdu (CNCEQ; *Appendix VII*) was used in the present study to measure self-debasing cognitive errors among adolescents. The questionnaire was originally developed by Leitenberg, et al., (1986) and translated into Urdu by Rehna and Hanif (2012). CNCEQ is a Likert-type 5-point rating scale with the score range of 1-5. CNCEQ assesses four principal cognitive errors (i.e., Catastrophizing, Overgeneralization, Personalizing, and Selective Abstraction) with six items on each domain. Scores on the upper continuum on any subscale depicts that the child/ adolescent commits greater level of that cognitive errors. CNCEQ has shown good alpha reliabilities ranging from .85 to .92 (Rehna et al., 2012).

6. **How I think questionnaire (HIT-Q).** Urdu version of How I Think Questionnaire was used to assess self-serving cognitive errors of adolescents (HIT-Q; *Appendix IX*). The HIT-Q was originally developed by Gibbs et al., (2001) and was translated in Urdu in the first phase of the current study. HIT-Q is a 54-item instrument designed to measure four categories of self-serving cognitive errors: self-centered, blaming others, minimizing/mislabeling, and assuming the worst and four behavioral referents: physical aggression, oppositional-defiance, lying, and stealing. The present study focused on the

four cognitive distortions and not on the behavioral referents. The HIT-Q also includes an eight-item anomalous responding (AR) scale designed to screen for disingenuous, incompetent, or otherwise suspect responding. A high score on any domain depicts a high degree of committing that cognitive distortion and vice versa. Internal consistency reliabilities, as measured by Cronbach's coefficients alpha, were 0.89 for the overall HIT-Q (Barriga et al., 2001).

7. **NEO five-factor inventory (NEO-FFI).** Urdu version (Chishti, 2002) of the NEO-FFI (*Appendix XI*) was used to assess personality traits of the subjects. NEO-FFI assesses big five personality traits (i.e., Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness) and comprises of 60 items (12 item on each factor). Responses were reported on a five point rating scale ranging from 1-5. Items 1, 3, 8, 9, 12, 14, 15, 16, 18, 23, 27, 29, 30 ,31, 33, 38, 39, 42, 44, 45, 46, 48, 54, 55, 57, 59 are reversed scored. Maximum and minimum score on each factor is 60 and 12 respectively. High score on each factor depicts that the subject is high on that trait and vice versa. Alpha reliabilities for NEO-FFI have been reported from .83 to .90 (Soto, John, Gosling, & Potter, 2011).

Consent form and demographic sheet. A consent form along with appropriate demographic sheet (*Appendix I*) was also attached with instruments to obtain willingness of the subjects and necessary demographic information of the participants. This information included age, gender, family structure, and monthly income etc.

Procedure

Sample was approached with an official approval of Directorate of Education and with the permission of concerned authorities of the schools. These authorities were first briefed about the nature and the objectives of the research and about the estimated period of the data collection. After obtaining the informed consent of the Directorate of Education and the concerned authorities of the school an informed consent (along with demographic

detail) was also signed out by the adolescents. Other research ethics were also taken into account i.e., participants were given the full right to quit their participation at any stage and withdraw from research. Participants were assured of their right of privacy and confidentiality and were assured that their information will be kept quite confidential and will be used for particularly this research only. Researcher approached each participant individually and provided them a brief introduction about nature and objectives of the study. First the adolescents were screened out on the basis of administering Adverse Life Events Scale (ALES) as we only needed those adolescents who had experienced any adverse event during the last one year. After screening them, a booklet consisting on rest of the questionnaires [i.e. School Children Problem Scale (SCPS), Children Negative Cognitive Errors Questionnaire (CNCEQ), How I Think Questionnaire (HIT-Q), Sajjad Verbal Intelligence Test Urdu (SVITU), Raven's Standard Progressive Matrices (RSPM), and NEO-Five Factor Inventory (NEO-FFI)] was handed over to the participants to fill up. Instruments were administered individually and data was collected in two days because of the large number and length of the instruments. Each participant was provided refreshment on both days of data collection. Funding was provided by Higher Education Commission of Pakistan to meet the expenses of this study. After taking the data necessary statistical analyses were computed for the results.

Results

This section of the study holds results of the pilot study including validation of ALES (concurrent and content validity), HIT-Q, CNCEQ (CFA, convergent and discriminant validity), other psychometrics (reliability estimates and item-total correlations), and inter-correlations for all the study variables.

Content validity of ALES

Content validity refers to the degree the items of a test represent the construct understudy or the intended construct (Beck & Gable, 2001; Mastaglia, Toye, & Kristjanson, 2003). This type of validity is ensured by relying on the opinion of acknowledged experts of the particular subject matter on different criterion i.e. relevance, clarity, comprehension, and/ or whether the item is essential or not.

The content validity of ALES was established through the ratings of experts for each item. Items were reviewed by nine experts have a strong background of psychology, psychological testing, and adolescent development. They were requested to rate each item whether it is "essential or not" to be retained in the scale. Based on the ratings provided, the items endorsed by at least one third of the experts were retained in the final scale. At this stage none of the item (Events) was discarded as each item fulfilled the minimum criterion set for retention.

Concurrent Validity of ALES

Concurrent validity is an important way of collecting evidence for a measure to be valid. It can be defined as the extent to which the scores on one measure correspond to the results on another test which needs to be reliable, valid and standard (McIntire, & Miller, 2007). Weir (2005) documented the significance of establishing concurrent validity as:

> The more fully we are able to describe the construct we are attempting to measure at concurrent level, the more meaningful might be the statistical procedures

contributing to construct validation that can subsequently be applied to the results of the test (p. 18).

The validity is ensures by administering both measures at the same point in time and the findings are correlated with each other. In the present study, concurrent validity of Adverse Life Event Scale was confirmed with School Children Problem Scale as shown in Table 2.

Table 2

Relationship of Adverse Life Events Scale with School Children Problem Scale (N=303)

	Adverse Life Events Scale
Anxiousness	.64**
Aggression	.56**
Social Withdrawal	.63**
Somatic Complaints	.71**
Academic Problems	.71**
Feelings of Rejection	.53**
Total	.79**

**$p<.001$

Table 2 shows the results of bivariate correlations between ALES and SCPS and its six dimensions. Values indicate significant (**$p<.001$) positive correlation between Adverse Life Events Scale and each dimension of school children problem scale which provides a strong support for good concurrent validity of ALES.

Factor Structure of CNCEQ and HIT-Q

Confirmatory Factor Analysis (CFA) was conducted to verify the factor structures of CNCEQ and HIT-Q on a sample of 303 adolescents. The objective of assessing these measurement models was to examine the extent to which these models get in line with the literature in hand. This objective was accomplished by using AMOS-18 proposed by Arbuckle and Wothke (1999). A broad range of Fit-indices are used to test the

goodness/fitness of a model. Fit indices used in the present study to judge the goodness of fit included Chi-Square statistics, Comparative Fit Index (CFI), Normed Fit Index (NFI), and Root Mean Square Error of Approximation (RMSEA). Values of CFI and NFI range from 0 to 1 where a value of .90 or above indicates an acceptable fit for the model (Hu & Bentler, 1999). The value of RMSEA and SRMR is restricted by 0 to .08 where a value less than .08 lies in an acceptable for fitting a model (Browne & Cudeck 1993). Findings of CFA for CNCEQ and HIT-Q are reported in the following Table.

Table 3

Goodness-of-Fit Indicators for Four-Factor Model of Children Negative Cognitive Errors Questionnaire and How I Think Questionnaire (N=303)

Model	χ^2	*Df*	χ^2/df	CFI	NFI	RMSEA
CNCEQ	1180.9	216	5.46	.87	.85	.11
HIT-Q	4422.54	1294	4.87	.85	.73	.096

Note: CNCEQ = Children Negative Cognitive Errors Questionnaire; HIT-Q = How I Think Questionnaire

Table 3 shows the goodness of fit indices for the four-factor model of CNCEQ and six-factor model of HIT-Q. Values of both models show a poor fit as the values of RMSEA (.11 and .096) are greater than .08 which are undesirable. The values of CFI and NFI are less than .90 and do not lie in the acceptable range. Overall values do not indicate a good fit for the four-factor model of CNCEQ and the six-factor model of HIT-Q.

Table 4

Factor Loadings and Standard Errors for Four-Factor Model of Children Negative Cognitive Errors Questionnaire (N=303)

Items	Standardized Factor Loadings	SE	Items	Standardized Factor Loadings	SE
	CATA			SA	
1	.82	.07	3	.80	.06
9	.79	.07	10	.78	.07
11	.75	.07	12	.72	.07
18	.83	.08	13	.87	.07
20	.79	.08	15	.79	.07
22	.71	.07	23	.74	.07
	PERS			OG	
2	.84	.09	5	.76	.08
4	.89	.08	8	.86	.08
6	.80	.09	14	.88	.08
7	.84	.08	17	.84	.08
16	.85	.09	19	.86	.08
21	.86	.09	24	.81	.08

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Note: CATA=Catastrophizing, PERS=Personalization, SA=Selective Abstraction, OG=Over Generalization

Table 4 shows factor loadings of each item along with their residuals. Findings indicate that all the items show strong loadings with their corresponding factors.

Table 5

Factor Loadings and Standard Errors for Six-Factor Model of How I Think Questionnaire (N=303)

Items	Standardized Factor Loadings	SE	Items	Standardized Factor Loadings	SE	Items	Standardized Factor Loadings	SE
	AW		52	.52	.07	33	.86	.08
2	.69	.07	54	.79	.07	40	.75	.08
8	.69	.07		**BO**		47	.72	.07
15	.76	.08	6	.80	.08		**AR**	
18	.78	.07	11	.69	.08	4	.50	.06
23	.73	.07	21	.73	.09	13	.65	.07
29	.85	.07	25	.75	.08	20	.67	.08
32	.78	.07	26	.70	.08	27	.59	.07
35	.69	.07	36	.80	.08	31	.73	.08
43	.80	.04	39	.71	.08	38	.85	.09
49	.81	.07	44	.81	.08	45	.83	.09
53	.76	.06	46	.84	.08	51	.68	.08
	SC		50	.71	.08		**PF**	
3	.67	.06		**ML**		1	.56	.09
7	.68	.06	5	.60	.07	9	.48	.11
10	.77	.07	12	.65	.08	16	.73	.09
22	.85	.06	14	.74	.08	24	.83	.10
28	.86	.06	17	.77	.06	34	.65	.09
37	.83	.06	19	.76	.08	41	.83	.11
42	.79	.06	30	.82	.08	48	.66	.09

Note: AW=Assuming the Worst, BO=Blaming Others, SC=Self-Centeredness, ML=Mislabeling, AR=Anomalous Response, PF=Positive Filters

Table 5 shows factor loadings of each item along with their residuals. Findings indicate that all the items show strong loadings with their corresponding factors.

Convergent and Discriminant Validity of CNCEQ and HIT-Q

To determine the convergent validity of Children Negative Cognitive Errors Questionnaire (CNCEQ) Pearson Product Moment Correlation was computed between CNCEQ, its subscales and the Anxiousness domain of School Children Problem Scale (SCPS). Previous researches (Weems et al., 2007) also provide support for a positive correlation between self-debasing cognitive errors and anxiety among youth.

To determine the convergent validity of How I Think Questionnaire (HIT-Q); HIT-Q and its subscales were correlated with the Aggression subscale of SCPS. Fernández, et al. (2013) also found a strong relationship between self-serving cognitive distortion and aggression among adolescents. Whereas to establish the Discriminant validities of CNCEQ and HIT-Q; both scales were correlated with each other. As supported by literature self-serving cognitive errors are more commonly observed in conduct and antisocial behaviors (Barriga, Hawkins, & Camelia 2008) whereas self-debasing cognitive errors are specifically related to internalizing problems i.e., anxiety and depression (Epkins, 2000). These researches provided a base and sound rationale to determine the Discriminant validity of both scales by correlating them with each other. Results of the convergent and Discriminant validities for both Scales (CNCEQ & HIT-Q) are presented in tables 6 to 8.

Table 6

Relationship of Children Negative Cognitive Errors Questionnaire and its Subscales with Anxiousness Scale (N=303)

CNCEQ Scales	Anxiousness
CATA	.64**
PERS	.66**
SA	.52**
OG	.70**
CNCEQ Total	.70**

**$p<.001$

Note: CATA=Catastrophizing, PERS=Personalization, SA=Selective Abstraction, OG=Overgeneralization, CNCEQ = Children Negative Cognitive Errors Questionnaire

Values of correlation coefficients in Table 6 indicate significant positive correlations ($p<.001$) of the subscales and total the scores of CNCEQ with Anxiousness scale (a subscale of SCPS). These findings indicate that CNCEQ has a good convergent validity and psychometrically sound measure to assess self-debasing cognitive errors.

Table 7

Relationship of How I Think Questionnaire and its Subscales with Aggression Scale (N=303)

HIT-Q Scales	Aggression
Self-Centered	.66**
Blaming Others	.61**
Mislabeling	.62**
Assuming the Worst	.70**
Anomalous Response	.46**
Positive Filters	-.15
HIT-Q Total	.67**

**$p<.001$

Note: SC=Self-Centeredness, BO=Blaming Others, ML=Mislabeling, AW=Assuming the Worst, AR=Anomalous Response, PF=Positive Filters, HIT-Q=How I Think Questionnaire

Results in table 7 indicate that all the subscales of HIT-Q have significant positive correlations ($p<.001$) with Aggression (a subscale of SCPS) except Positive Filters subscale which has a negative and non-significant correlation with aggression. Total scores on HIT-Q were also significantly and positively correlated ($p<.001$) with Aggression which indicate a good convergent validity of HIT-Q.

Table 8

Correlation between Children Negative Cognitive Errors Questionnaire (CNCEQ) and How I Think Questionnaire (HIT-Q) and their subscales (N=303)

	AW	SC	BO	ML	AR	PF	HITT
CATA	-.42**	-.50**	-.45**	-.51**	-.22**	.22**	-.46**
PERS	-.64**	-.65**	-.62**	-.66**	-.40**	.27**	-.65**
SA	-.46**	-.48**	-.48**	-.43**	-.35**	.20**	-.47**
OG	-.58**	-.63**	-.60**	-.69**	-.30**	.20**	-.60**
CET	-.58**	-.63**	-.59**	-.62**	-.35**	.25**	-.60**

**$p<.001$

Note: AW=Assuming the Worst, SC=Self-Centeredness, BO=Blaming Others, ML=Mislabeling, AR=Anomalous Response, PF=Positive Filters, HITT=How I Think Total Scores, CATA=Catastrophizing, PERS=Personalizing, SA=Selective Abstraction, OG=Over Generalization, CET= Cognitive Errors Total

Table 8 shows correlations between the total and subscales of CNCEQ and HIT-Q. Results show that all the subscales and total scores on CNCEQ are significantly negatively correlated ($p<.001$) with each of the subscale and total scores of HIT-Q. These findings indicate that both scales CNCEQ and HIT-Q have good Discriminant validities

Following Table 9 shows alpha coefficients, means, standard deviations, skewness and kurtosis for Adverse Life Events Scale, School Children Problem Scale, Children Negative Cognitive Errors Questionnaire, How I Think Questionnaire, their subscales and the subscales of NEO-FFI. Findings indicate that all the study scales and their subscales have high alpha coefficients and scores on all the scale and their subscales are normally distributed.

Table 9

Reliability estimates and descriptive statistics of the scales (N=303)

Subscales	No. of Items	α	*M*	*SD*	Skewness	Kurtosis
ESLE	87	.81	35.32	12.91	.59	-.34
ANX	12	.92	30.41	10.07	-.024	-1.26
AGG	8	.92	20.75	6.46	-.12	-1.03
SW	7	.82	18.17	5.09	-.019	-1.03
SC	4	.76	9.57	3.15	-.06	-.93
AP	8	.74	22.96	7.0	.03	1.68
FR	5	.91	12.60	4.88	-.12	-1.26
TP	44	.90	119.15	24.99	-.37	-1.05
CATA	6	.90	17.98	6.70	.13	-.89
PERS	6	.94	19.46	8.44	-.19	-1.30
SA	6	.90	15.77	6.02	.05	-.94
OG	6	.93	18.17	7.68	.07	-1.32
CET	24	.94	71.38	26.47	-.05	-1.30
SC	9	.88	25.87	13.25	.51	-.96
BO	10	.89	24.55	10.61	.32	-.71
ML	9	.88	27.86	13.82	.66	-.43
AW	11	.89	30.27	14.15	.51	-.70
AR	8	.87	25.58	8.74	.26	-.64
PF	7	.86	35.47	6.49	-1.8	1.7
CET	54	.92	169.61	54.63	.51	-.94
NEU	12	.88	44.95	12.25	-.58	-.79
EXT	12	.85	34.42	10.51	-.003	-1.12
OPEN	12	.74	33.69	8.53	.08	-.82
AGRE	12	.78	37.08	8.68	-.30	-.63
CONS	12	.80	37.28	8.96	-.05	-.86

Note: ESLE=Experience of Stressful Life Events, ANX=Anxiousness, AGG=Aggression, SW=Social Withdrawal, SC=Somatic Complaints, AP=Academic Problems, FR=Feelings of Rejection, TP=Total Problems, CATA=Catastrophizing, PERS=Personalizing, SA=Selective Abstraction, OG=Over Generalization, CET=Cognitive Errors Total, SC=Self-Centeredness, BO=Blaming Others, ML=Mislabeling, AW=Assuming the Worst, AR=Anomalous Response, PF=Positive Filters, CET= Cognitive Errors Total, NEU=Neuroticism, EXT=Extraversion, OPEN=Openness, AGRE=Agreeableness, CONS=Conscientiousness

Table 10

Reliability estimates and descriptive statistics of Sajjad Verbal Intelligence Test Urdu and its subscales and Raven's Standard Progressive Matrices (N=303)

Scales	No. of Items	α	*KR-20*	*Split-half*	*M*	*SD*	Skewness	Kurtosis
VOC	42	.89	.89	.89	22.52	9.003	.04	-1.4
VR	20	.74	.74	.83	10.29	4.11	-.06	-.89
NA	36	.85	.85	.82	21.58	7.01	.13	-1.44
GK	30	.76	.76	.71	17.56	5.17	-.05	-1.05
Total VA	128	.95	.95	.92	71.95	23.50	.15	-1.49
RSPM	60	.78	.78	.75	29.17	6.16	-.45	-.36

Note: VOC=Vocabulary, VR=Verbal Reasoning, NA=Numerical Ability, GK=General Knowledge, SVITU-T= Sajjad Verbal Intelligence Test Urdu Total, RSPM=Raven's Standard Progressive Matrices

Table 10 shows alpha coefficients, KR-20 reliabilities, split-half reliabilities, means, standard deviations, skewness and kurtosis for Sajjad Verbal Intelligence Test Urdu and its subscales and Raven's Standard Progressive Matrices. Values indicate that alpha coefficients, KR-20 reliabilities and split-half reliabilities are high for all the subscales and total scales. Values of skewness and kurtosis show that scores on all the subscale and total scales are normally distributed.

Item-total Correlations for the Study Scales

To examine the internal consistency of all the study scales, item-total correlations were computed for each scale and its subscale and the findings are reported from Table 11 to Table 15.

Table 11

Item-total Correlation of School Children Problem Scale and its Subscales (N=303)

Item	Total	Corrected	Total Scale	Item	Total	Corrected	Total Scale
	Anxiousness			30	.76**	.65	.58
6	.83**	.79	.62	33	.78**	.67	.59
19	.79**	.74	.58	34	.82**	.74	.70
20	.86**	.83	.68	37	.69**	.54	.70
25	.73**	.67	.71	41	.75**	.64	.48
26	.86**	.82	.71		Somatic Complaints		
27	.83**	.78	.70	4	.73**	.53	.49
28	.83**	.78	.79	15	.67**	.45	.32
31	.74**	.68	.67	24	.78**	.57	.65
35	.71**	.65	.66	29	.86**	.69	.81
38	.70**	.65	.55		Academic Problems		
39	.66**	.60	.64	3	.68**	.60	.58
42	.42**	.33	.20	9	.7***	.69	.63
	Aggression			16	.71**	.63	..62
2	.80**	.73	-.26	21	.61**	.18	.28
5	.82**	.76	-.06	32	.72**	.64	.78
8	.82**	.76	-.23	36	.73**	.64	.66
10	.81**	.74	-.06	40	.73**	.65	.63
11	.80**	.72	-.18	43	.68**	.59	.65
12	.87**	.82	-.08		Feelings of Rejection		
17	.71**	.62	-.22	7	.89**	.82	.70
44	.80**	.73	-.11	13	.81**	.71	.59
	Social Withdrawal			14	.91**	.85	.71
1	.31**	.13	.33	18	.84**	.73	.73
23	.76**	.65	.61	22	.87**	.78	.75

**$p<.001$

Table 11 shows item-total and corrected item-total correlations of School Children Problem Scale and its subscales. The correlation coefficients indicate that all the items have significant high correlations with their respective subscales and with the total scale also except item 5, 10, and 12 of aggression scale; which show very low correlations with the total scale but these items have significantly high correlations with their respective subscale. Overall scale is internally consistent and valid to measure emotional and behavioral problems of school children.

Table 12

Item-total Correlation of Sajjad Verbal Intelligence Test Urdu (SVITU) and its Subscales (N=303)

Item	Total	Corrected	SVIT	Item	Total	Corrected	SVIT	Item	Total	Corrected	SVIT	Item	Total	Corrected	SVIT
	VOC			33	.39**	.39	.39	23	.40**	.35	.32	19	.21*	.19	.17
1	.24*	.10	.17	34	.52**	.40	.48	24	.43**	.37	.43	20	.37**	.26	.32
2	.34**	.29	.28	35	.36**	.51	.48	25	.39**	.33	.39		GK		
3	.40**	.36	.37	36	.52**	.29	.30	26	.42**	.36	.40	1	.30**	.22	.17
4	.27*	.13	.14	37	.41**	.40	.43	27	.36**	.30	.36	2	.40**	.32	.25
5	.21*	.16	.24	38	.55**	.50	.53	28	.32**	.26	.34	3	.30**	.21	.14
6	.48**	.43	.43	39	.54**	.42	.39	29	.50**	.44	.46	4	.42**	.34	.26
7	.27*	.11	.17	40	.59**	.49	.36	30	.43**	.37	.35	5	.40**	.32	.39
8	.42**	.37	.38	41	.57**	.45	.40	31	.27**	.20	.20	6	.36**	.27	.26
9	.54**	.50	.52	42	.51**	.39	.34	32	.45**	.39	.43	7	.28**	.19	.23
10	.24*	.10	.17		NA			33	.54**	.49	.49	8	.44**	.36	.35
11	.29**	.24	.23	1	.38**	.33	.29	34	.46**	.38	.41	9	.33**	.24	.22
12	.40**	.35	.31	2	.27**	.20	.20	35	.51**	.41	.45	10	.47**	.39	.32
13	.50**	.46	.46	3	.36**	.30	.29	36	.40**	.34	.36	11	.43**	.35	.35

Item	Total	Corrected	SVIT	Item	Total	Corrected	SVIT	Item	Total	Corrected	SVIT	Item	Total	Corrected	SVIT
14	.53**	.49	.51	4	.39**	.33	.34		VR			12	.45**	.38	.36
15	.36**	.31	.31	5	.40**	.34	.35	1	.29**	.19	.08	13	.32**	.23	.40
16	.48**	.43	.41	6	.29**	.23	.22	2	.43**	.33	.39	14	.24*	.15	.21
17	.52**	.48	.46	7	.49**	.43	.44	3	.28**	.18	.13	15	.53**	.46	.44
18	.58**	.54	.52	8	.42**	.36	.35	4	.46**	.36	.41	16	.38**	.29	.31
19	.64**	.39	.59	9	.37**	.31	.33	5	.38**	.27	.36	17	.30**	.21	.32
20	.52**	.40	.47	10	.32**	.25	.27	6	.35**	.24	.31	18	.30**	.22	.25
21	.31**	.51	.34	11	.31**	.24	.27	7	.49**	.39	.47	19	.45**	.37	.34
22	.43**	.29	.41	12	.42**	.36	.42	8	.53**	.43	.51	20	.34**	.25	.27
23	.55**	.40	.51	13	.42**	.36	.39	9	.33**	.21	.20	21	.26**	.17	.24
24	.42**	.50	.36	14	.44**	.38	.37	10	.54**	.44	.55	22	.33**	.24	.38
25	.54**	.42	.51	15	.41**	.35	.37	11	.42**	.31	.42	23	.27**	.15	.19
26	.50**	.49	.49	16	.38**	.32	.38	12	.46**	.35	.42	24	.41**	.32	.44
27	.42**	.45	.36	17	.41**	.36	.37	13	.56**	.47	.50	25	.32**	.23	.21
28	.48**	.39	.37	18	.31**	.24	.22	14	.28**	.16	.24	26	.42**	.34	.33
29	.39**	.39	.37	19	.47**	.41	.40	15	.53**	.43	.50	27	.26**	.17	.21
30	.56**	.40	.46	20	.40**	.34	.37	16	.59**	.50	.53	28	.30**	.21	.36
31	.44**	.51	.20	21	.46**	.40	.40	17	.53**	.43	.50	29	.33**	.24	.24
32	.39**	.29	.59	22	.43**	.37	.42	18	.49**	.39	.44	30	.31**	.22	.26

**p<.001, **p<.01, *p<.05

Note: VOC=Vocabulary, VR=Verbal Reasoning, NA=Numerical Ability, GK=General Knowledge, SVITU=Sajjad Verbal Intelligence Test Urdu Total

Table 12 shows item total and corrected item-total correlations of Sajjad Verbal Intelligence Test Urdu and its subscales. Correlation coefficients indicate that all the items have significant correlation with their respective subscale and with the total scale also. Although items 1,4,5,7, 10 of Word Meaning Scale, item 19 of Verbal Reasoning Scale and item 14 of General Knowledge Scale have low item-total correlation but will be retained as the relationship is significant at α=.05.

Table 13

Item-total Correlation of the Children Negative Cognitive Errors Questionnaire and its sub-scales (N=303)

Item	Total	Corrected	CNCEQ	Item	Total	Corrected	CNCEQ
	CATA				PERS		
1	.83**	.75	.72	2	.88**	.82	.81
9	.86**	.79	.73	4	.91**	.88	.83
11	.81**	.73	.67	6	.87**	.81	.80
18	.86**	.79	.75	7	.88**	.83	.80
20	.84**	.76	.72	16	.89**	.83	.84
22	.75**	.65	.66	21	.87**	.81	.85
	SA				OG		
3	.82**	.73	.66	5	.83**	.76	.73
10	.81**	.73	.73	8	.89**	.84	.82
12	.79**	.70	.69	14	.89**	.85	.83
13	.88**	.82	.71	17	.88**	.83	.81
15	.82**	.73	.67	19	.86**	.80	.82
[illegible]	.81**	.71	.69	24	.84**	.78	.79

**$p < .001$

Note: CATA=Catastrophizing, PERS=Personalization, SA=Selective Abstraction, OG=Overgeneralization

Table 13 shows item-total and corrected item-total correlations of Children Negative Cognitive Errors Questionnaire and its subscales. Correlation coefficients indicate that all the items have significantly high correlations (p<.001) with their respective subscales and with the total scale also. Overall scale is internally consistent and valid to measure self-debasing cognitive errors among adolescents.

Table 14

Item-total Correlation of the sub-scales of HIT-Q (N=303)

Item	Total	Corrected	HIT-Q	Item	Total	Corrected	HIT-Q
	AW				**BO**		
2	.78**	.72	.69	6	.83**	.78	.72
8	.75**	.69	.74	11	.67**	.59	.66
15	.76**	.69	.64	21	.76**	.70	.73
18	.75**	.69	.68	25	.78**	.71	.68
23	.73**	.67	.68	26	.79**	.73	.67
29	.86**	.82	.75	36	.83**	.79	.78
32	.80**	.75	.71	39	.79**	.73	.75
35	.73**	.67	.58	44	.84**	.80	.76
43	.79**	.75	.70	46	.87**	.84	.80
49	.78**	.72	.75	50	.76**	.70	.66
53	.75**	.69	.63				
	SC				**ML**		
3	.84**	.79	.77	5	.68**	.59	.56
7	.79**	.73	.70	12	.72**	.63	.71
10	.79**	.74	.77	14	.75**	.67	.62
22	.87**	.83	.79	17	.71**	.62	.55
28	.84**	.79	.78	19	.69**	.59	.60
37	.84**	.79	.80	30	.75**	.68	.71
42	.86**	.81	.78	33	.77**	.69	.70
52	.69**	.61	.58	40	.72**	.63	.56
54	.79**	.73	.72	47	.69**	.58	.53
	AR				**PF**		
4	.60**	.49	.54	1	.63**	.55	.001
13	.73**	.63	.64	9	.67**	.51	.27
20	.72**	.63	.58	16	.79**	.69	.16
27	.70**	.59	.47	24	.79**	.71	.12
31	.76**	.66	.58	34	.76**	.64	-.009
38	.80**	.73	.52	41	.84**	.76	.14
45	.80**	.73	.49	48	.74**	.63	.09
51	.75**	.65	.57				

**$p < .001$

Note: AW=Assuming the Worst, BO=Blaming Others, SC=Self-Centeredness, ML=Mislabeling, AR=Anomalous Response, PF=Positive Filters

Table 14 shows item-total and corrected item-total correlations of How I Think Questionnaire and its subscales. Correlation coefficients ($p<.001$) indicate that all the items have significantly high correlations with their respective subscales and with the total scale also. Overall scale is internally consistent and valid to measure self-serving cognitive errors among adolescents.

Table 15

Item-total Correlation of the sub-scales of NEO-FFI (N=303)

NEU			EXTR			OPEN			AGRE			CONSC		
Item	Total	Corrected	Item	Total	Corrected	Item	Total	Corrected	Item	Total	Corrected	Item	Total	Corrected
1	.54**	.44	2	.70**	.61	3	.53**	.40	4	.47**	.34	5	.58**	.46
6	.72**	.66	7	.68**	.59	8	.60**	.47	9	.58**	.46	10	.65**	.54
11	.69**	.62	12	.43**	.31	13	.48**	.34	14	.67**	.56	15	.36**	.22
16	.50**	.40	17	.76**	.69	18	.46**	.32	19	.51**	.38	20	.56**	.46
21	.79**	.74	22	.60**	.51	23	.43**	.27	24	.56**	.46	25	.59**	.49
26	.73**	.66	27	.31**	.17	28	.50**	.36	29	.58**	.45	30	.46**	.32
31	.50**	.40	32	.75**	.68	33	.30**	.20	34	.50**	.38	35	.69**	.61
36	.73**	.67	37	.76**	.69	38	.38**	.21	39	.60**	.48	40	.73**	.64
41	.73**	.66	42	.46**	.36	43	.65**	.53	44	.66**	.56	45	.24**	.17
46	.48**	.37	47	.70**	.62	48	.48**	.34	49	.45**	.34	50	.58**	.67
51	.77**	.71	52	.70**	.63	53	.58**	.46	54	.49**	.35	55	.65**	.28
56	.77**	.71	57	.49**	.36	58	.69**	.59	59	.37**	.22	60	.36**	.66

**$p < .001$

Note: NEU=Neuroticism, EXTR=Extraversion, OPEN=Openness, AGRE=Agreeableness, CONS=Conscientiousness

Table 15 shows item-total and corrected item-total correlations for Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness. Correlation coefficients show that all the items have significant correlations (p<.001) with their respective subscales which indicate that the NEO-FFI in internally consistent and valid measure to assess personality traits of adolescents.

Following Table 16 presents inter-scale correlations of the study variables. Findings show that the experience of adverse life events had significant positive correlations with emotional and behavioral problems of adolescents. Self-debasing cognitive errors also showed significant positive relationship with emotional and behavioral problems except aggression. Aggression had significant negative relationship with self-debasing cognitive errors while a significant positive correlation with self-serving cognitive errors. These self-serving cognitive errors showed a significant negative relationship with emotional problems (i.e. anxiousness, social withdrawal, somatic complaints, and feelings of rejection). Neuroticism demonstrated a significant negative correlation with all types of emotional and behavioral problems while extraversion, openness, agreeableness, conscientiousness, verbal, and nonverbal cognitive abilities exhibited significant negative relationship with these problems.

Table 16

Inter-scale Correlations of the Study Variables (N=303)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. ALE	-	.64**	.56**	.63**	.71**	.71**	.53**	.80**	.52**	.48**	.49**	.56**	.51**	.23**	.29**	.13*
2. ANX	-	-	-.89**	.81**	.67**	.58**	.34**	.61**	.73**	.78**	.76**	.81**	.69**	-.52**	-.56**	-.43**
3. AGG	-	-	-	-.76**	-.60**	-.47**	.22**	-.49**	-.75**	-.77**	-.77**	-.79**	-.66**	.54**	.55**	.45**
4. SW	-	-	-	-	.65**	.52**	.27**	.58**	.77**	.80**	.78**	.81**	.75**	-.52**	-.55**	-.46**
5. SC	-	-	-	-	-	.62**	.53**	.81**	.57**	.58**	.53**	.61**	.62**	-.35**	-.42**	-.27**
6. FR	-	-	-	-	-	-	.63**	.85**	.41**	.39**	.41**	.48**	.46**	.18**	.25**	.13*
7. AP	-	-	-	-	-	-	-	.75**	.41**	.38*	.41**	.48**	.45**	.25**	.23**	.13*
8. TP	-	-	-	-	-	-	-	-	.42**	.39**	.39**	.46**	.51**	.18*	.24**	.10
9. CATA	-	-	-	-	-	-	-	-	-	.89**	.84**	.86**	.76**	-.58**	-.63**	-.56**
10. PERS	-	-	-	-	-	-	-	-	-	-	.89**	.91**	.79**	-.70**	-.71**	-.62**
11. SA	-	-	-	-	-	-	-	-	-	-	-	.89**	.76**	-.63**	-.66**	-.61**
12. OG	-	-	-	-	-	-	-	-	-	-	-	-	.72**	-.61**	-.64**	-.55**
13. CET	-	-	-	-	-	-	-	-	-	-	-	-	-	-.50**	-.62**	-.58**
14. AW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.82**	.65**
15. SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.70**

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1. ALE	.26**	.21**	.14*	.20**	.59**	-.59**	-.51**	-.58**	-.54**	-.49**	-.59**	-.69**	-.71**	-.65**	-.70**
2. ANX	-.53**	-.05	-.04	-.52**	.92**	-.89**	-.76**	-.86**	-.85**	-.47**	-.52**	-.65**	-.54**	-.59**	-.53**
3. AGG	.52**	.01	-.03	.53**	.87**	-.83**	-.73**	-.80**	-.81**	-.47**	-.50**	-.59**	-.49**	-.55**	-.43**
4. SW	-.52**	.03	.03	-.52**	.82**	-.76**	-.65**	-.69**	-.67**	-.42**	-.52**	-.65**	-.58**	-.57**	-.51**
5. SC	-.39**	.18**	-.03	-.34**	.64**	-.63**	-.52**	-.59**	-.57**	-.59**	-.60**	-.66**	-.65**	-.67**	-.72**
6. FR	.23**	.36**	-.18**	-.15*	.57**	-.51**	-.46**	-.53**	-.50**	-.58**	-.62**	-.68**	-.73**	-.70**	-.79**
7. AP	.18**	.35**	-.17**	.22**	.29**	-.28**	-.27**	-.26**	-.28**	-.58**	-.54**	-.50**	-.55**	-.58**	-.69**
8. TP	.19**	.36**	-.14*	.13*	.58**	-.54**	-.48**	-.53**	-.51**	-.70**	-.74**	-.76**	-.78**	-.80**	-.88**
9. CATA	-.59**	-.08	.09	-.61**	.76**	-.68**	-.56**	-.63**	-.64**	-.33**	-.45**	-.54**	-.42**	-.46**	-.40**
10. PERS	-.69**	-.19**	.10	-.73**	.76**	-.73**	-.57**	-.66**	-.66**	-.28**	-.38**	-.50**	-.38**	-.41**	-.35**
11. SA	-.64**	-.13*	.03	-.67**	.75**	-.68**	-.56**	-.65**	-.65**	-.40**	-.46**	-.59**	-.53**	-.52**	-.37**
12. OG	-.62**	-06	.04	-.63**	.79**	-.72**	-.60**	-.69**	-.69**	-.33**	-.46**	-.58**	-.51**	-.49**	-.45**
13. CET	-.63**	-.09	.11*	-.63**	.70**	-.67**	-.54**	-.62**	-.58**	-.40**	-.42**	-.50**	-.47**	-.48**	-.41**
14. AW	.74**	.47**	-.12*	.93**	-.52**	.50**	.29**	.45**	.47**	-.11	-.03	-.02	-.05	-.05	-.06
15. SC	.79**	.37**	-.12*	.90**	-.56**	.52**	.34**	.78**	.48**	-.10	-.03	-.02	-.06	-.05	-.09
16. BO	.73**	.36**	-.15	.82**	-.46**	.42**	.41**	.25**	.33**	.37**	-.24*	-.26**	-.21*	-.26**	-.18*

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
17. ML	-	.38**	-.02	.88**	-.54**	.51**	.31**	.42**	.46**	-.13	-.04	-.02	-.04	-.06	-.08
18. AR	-	-	-.02	.57**	.08	-.08	-.16**	-.07	-.01	-.30**	-.28**	-.32**	-.36**	-.34**	-.43**
19. PF	-	-	-	-.11	.05	-.06	.01	-.004	.08	.36**	.44**	.35**	.43**	.42**	.11
20. HITT	-	-	-	-	-.52**	.49**	.28**	.43**	.46**	-.17	-.11	-.07	-.14	-.14	-.03
21. NEU	-	-	-	-	-	-.88**	-.76**	-.85**	-.82**	-.52**	-.55**	-.66**	-.53**	-.61**	-.51**
22. EXTR	-	-	-	-	-	-	.78**	.85**	.83**	.49**	.50**	.61**	.46**	.56**	.44**
23. OPEN	-	-	-	-	-	-	-	.76**	.79**	.53**	.44**	.52**	.42**	.53**	.43**
24. AGRE	-	-	-	-	-	-	-	-	.84**	.50**	.50**	.61**	.51**	.57**	.46**
25. CONS	-	-	-	-	-	-	-	-	-	.51**	.50**	.56**	.43**	.54**	.40**
26. VOC	-	-	-	-	-	-	-	-	-	-	.89**	.82**	.72**	.94**	.65**
27. VR	-	-	-	-	-	-	-	-	-	-	-	.86**	.80**	.94**	.75**
28. NA	-	-	-	-	-	-	-	-	-	-	-	-	.81**	.94**	.69**
29. GK	-	-	-	-	-	-	-	-	-	-	-	-	-	.88**	.79**
30. VAT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.76**
31. NVA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**$p < .001$, **$p < .01$, *$p < .05$

Note: ALE=Adverse Life Events, ANX=Anxiety, AGG=Aggression, SW=Social Withdrawal, SC=Somatic Complaints, FR=Feeling of Rejection, AP=Academic Prob[33] TP=Total Problems, CATA=Catastrophizing, PERS=Personalization, SA=Selective Abstraction, OG=Over Generalization, CET=Cognitive Errors Total, AW=A[44]ming the Worst, BO=Blaming Others, SC=Self-Centeredness, ML=Mislabeling, AR=Anomalous Response, PF=Positive Filters, HITT=How I Think Total, NEU=Neuroticism, EXTR=Extraversion, OPEN=Openness, AGRE= Agreeableness, CONS=Conscientiousness, VOC= Vocabulary, VR=Verbal Reasoning, NA=Numerical Ability, GK=General Knowledge, VAT=Verbal Ability Total, NVA Nonverbal Ability

Exploratory Analyses for Experiences of Adverse Life Events

The following sections contains some exploratory analyses to find out the ratio of the events that were experienced or not by the subjects, level of stress associated with the events, and manifestation of emotional and behavioral problems, cognitive errors and personality traits regarding each category of adverse life events. None of the subject of the pilot study sample experienced any event related to natural disasters category. Findings are illustrated trough graphs (Figure 2 to 22).

Figure 2 shows the percentage of each type of adverse events whether those were experienced or not by adolescents. Bar chart illustrates that most frequently experienced events were family related (91.70%) or personal/social (88.80%) types of adverse events.

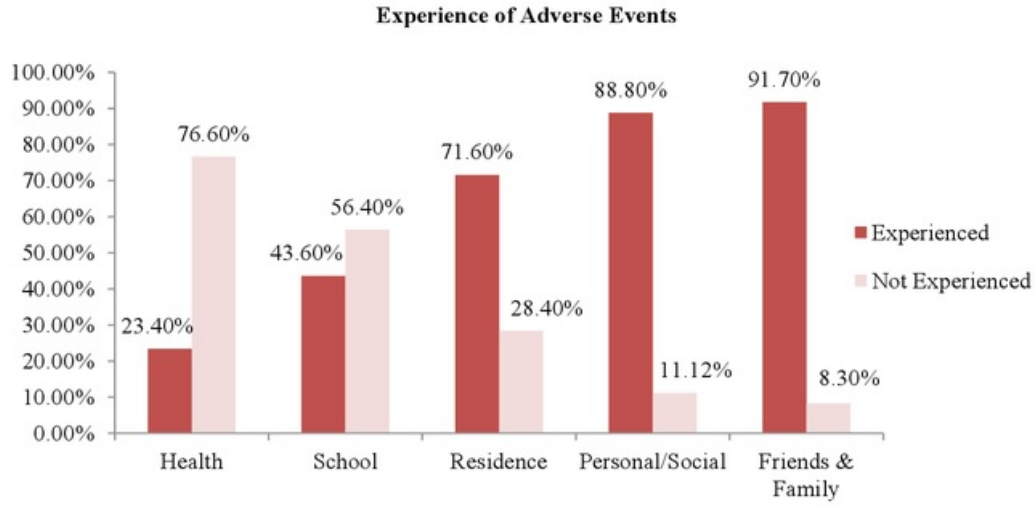

Figure 2. Percentage of adolescents with and without experience of different types of adverse life events

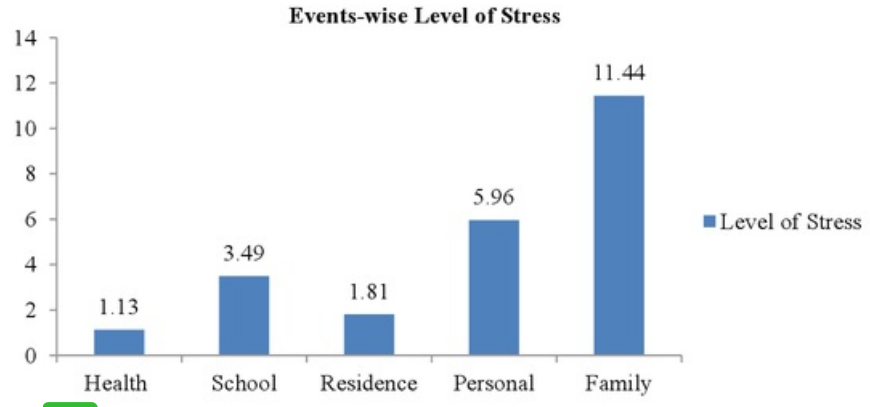

Figure 3. Level of stress associated with different types of adverse life events experienced by adolescents

Figure 3 depicts the level of stress associate with each type of adverse life events. Values indicate that family related adverse events were the most stressful (*M = 11.44*) as considered by the adolescents whereas health related events were percieved as the least stressful (*N = 1.13*) evens by the subjects.

Level of Emotional and Behavioral Problems (Figure 4-9)

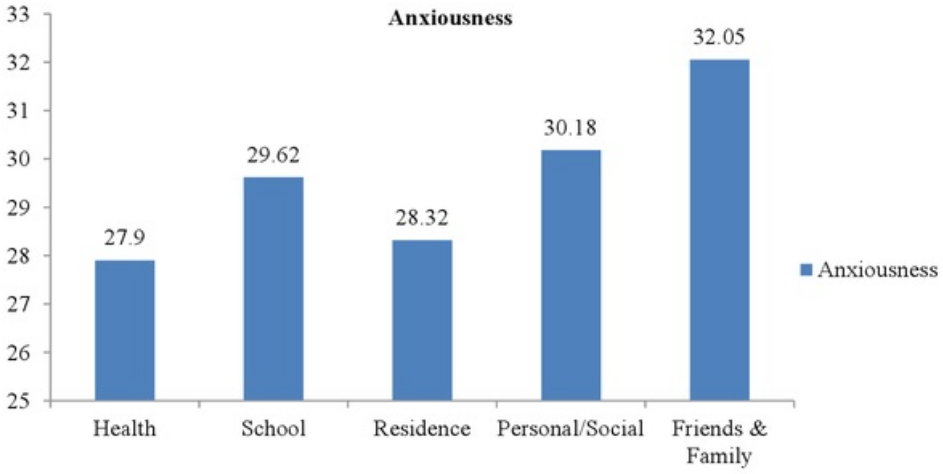

Figure 4. Level of anxiousness associated with different types of adverse life events experienced by adolescents

Figure 4 highlights the level of anxious among the adolescents who experienced differ adverse life events. Values of the Bar chart indicate that adolescents who mostly experienced friends and family related adverse events had the highest level of anxious (M = 32.05) whereas adolescents with health related experiences showed the minimum level of anxiousness (M = 27.9).

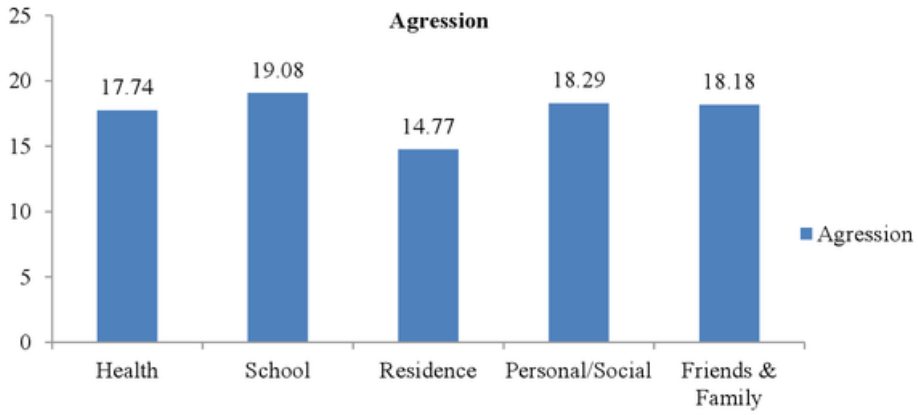

Figure 5. Level of aggression associated with different types of adverse life events experienced by adolescents

Figure 5 demonstrates the level of aggression with respect to each category of adverse events. Values of the bars show that the level of aggression was maximum in the adolescents experienced school related events more frequently (M = 10.08) while the adolescents with residence related negative experiences had the minimum level of aggression. (M = 14.7).

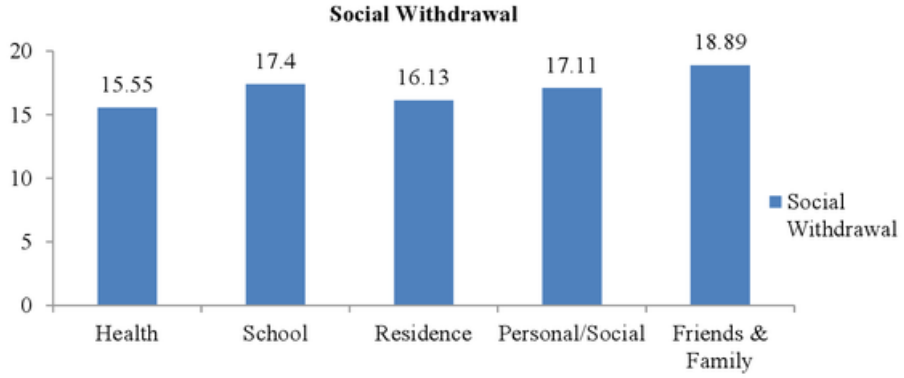

Figure 6. Level of social withdrawal associated with different types of adverse life events experienced by adolescents

Figure 6 illustrates the level of social withdrawal in each type of adverse life events. Data labels show that adolescents with mostly family related adverse experiences had the maximum level of social withdrawal (M = 18.89).

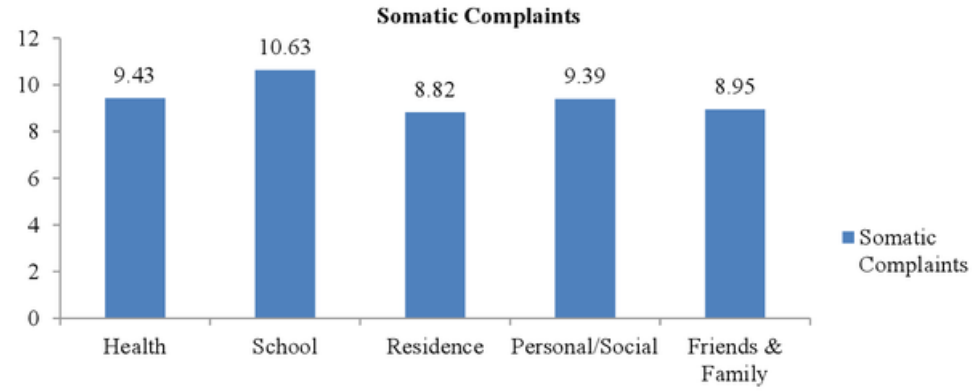

Figure 7. Level of somatic complaints associated with different types of adverse life events experienced by adolescents

Figure 7 illustrates the degree of somatic complaints with each category of adverse life events. Values of the chart reveal that highest level of somatic complaints occurred in the adolescents with school related adverse experiences (M = 10.63).

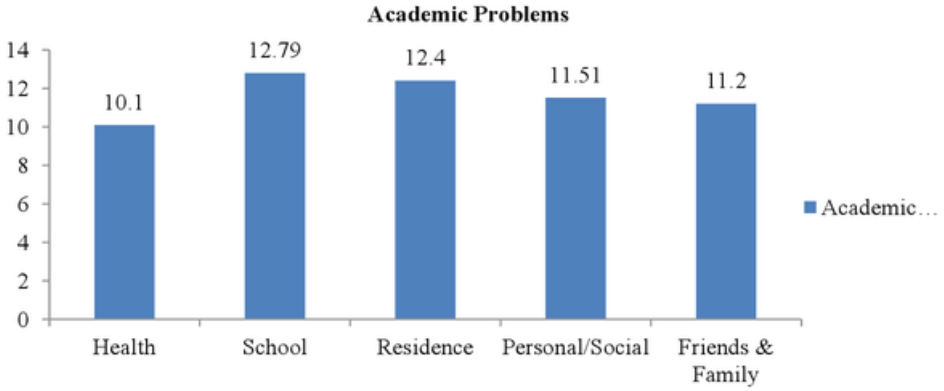

Figure 8. Level of academic problems associated with different types of adverse life events experienced by adolescents

Figure 8 describes the magnitude of academic problems with respect to each type of adverse life events. Data labels indicate that the maximum level of academic problems was found in adolescents with experiences of school related adverse experiences (M = 12.79).

Figure 9. Level of Feelings of rejection associated with different types of adverse life events experienced by adolescents

Figure 9 displays the manifestation of the feelings of rejection with refernce to each type of adverse life events. Values of the graph indicate that the maximum level off rejection feelings occurred among adolescents with experiences of personal/social adverse events (M = 25.32).

Level of Self-debasing Cognitive Errors (Figure 10-13)

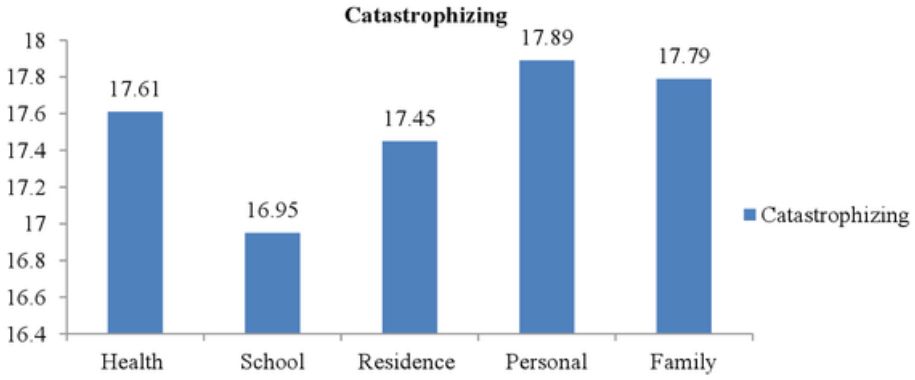

Figure 10. Level of catastrophizing error associated with different types of adverse life events experienced by adolescents

Figure 10 demonstrates the expression of catastrophizing in different categories of adverse life events. Values of the bar chart show that adolescents with personal (M = 17.89) and family (M = 17.79) related events commited the maximum level of catastrophizing. The level of this cognitive error was also high with health related adverse experiences (M = 17.61).

Figure 11 below depicts the manifestations of personalizing among adolescents with adverse life experiences. Values of the graph indicate that the highest level of personalizing was committed by adolescents having personal type of adverse events (M = 20.45).

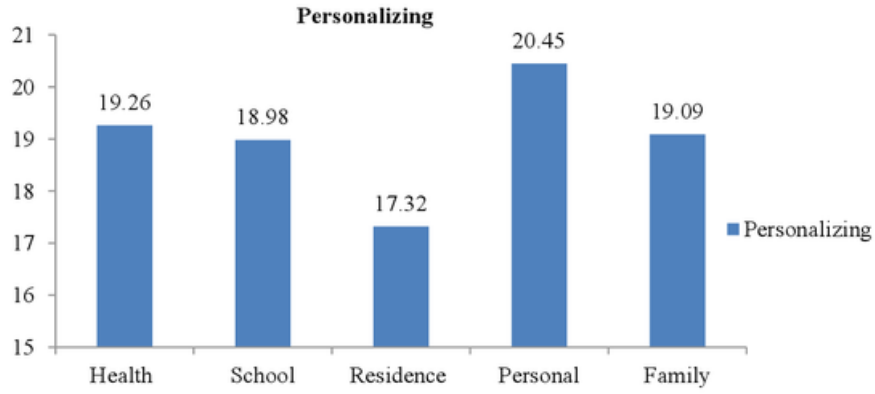

Figure 11. Level of personalizing error associated with different types of adverse life events experienced by adolescents

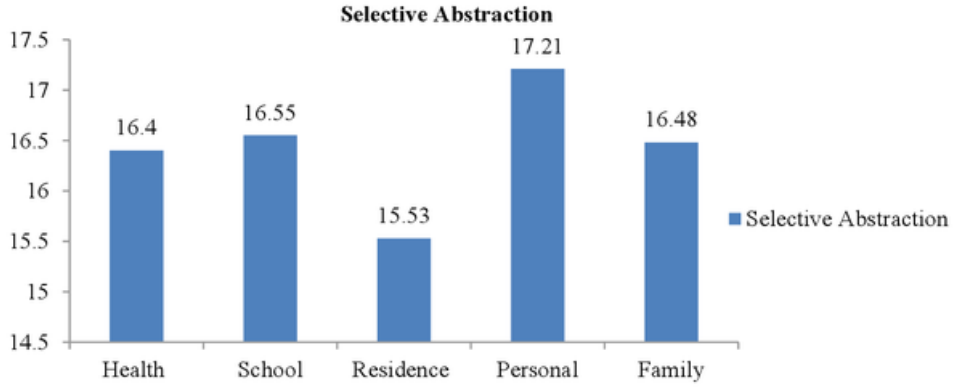

Figure 12. Level of selective abstraction error associated with different types of adverse life events experienced by adolescents

Figure 12 highlights the magnitude of selective abstraction with respect to different types of adverse life experiences. The values of the graph reveal that adolescents with personal type of adverse experiences showed the highest level of selective abstraction (M = 17.21).

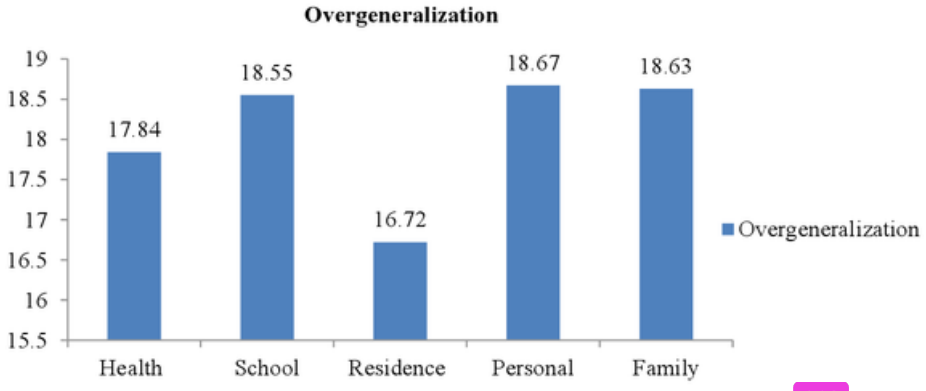

Figure 13. Level of over generalization error associated with different types of adverse life events experienced by adolescents

Figure 13 displays the magnitude of overgeneralization cognitive errors with respect to each category of adverse life events experienced by the adolescents. Data labels

indicate that overgeneralization was almost equally high in personal (M = 18.67), family (M = 18.63), and school (M = 18.55) related adverse experiences.

Level of self-serving Cognitive Errors (Figure 14-17)

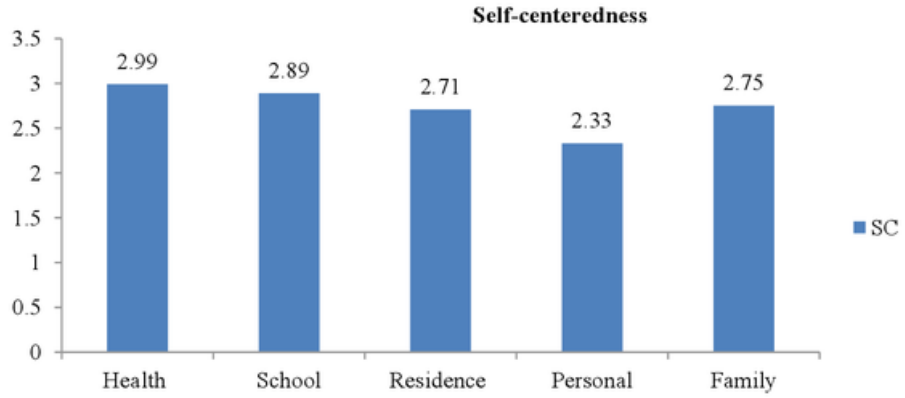

Figure 14. Level of self-centeredness error associated with different types of adverse life events experienced by adolescents

Figure 14 highlights the level of self-centeredness among adolescents having different types of adverse life events. Values of the graph depict that adolescents with health related experiences showed the maximum level of self-centeredness (M = 2.99).

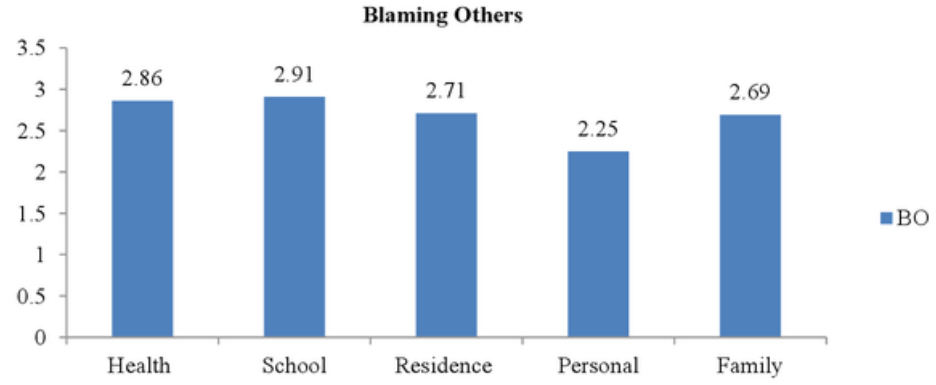

Figure 15. Level of blaming others error associated with different types of adverse life events experienced by adolescents

Figure 15 demonstrates the magnitude of blaming others with respect to different types of adverse life events experienced by adolescents. Values of the chart reveal that blaming others had the maximum level among adolescents with health (M = 2.86) and school related (M = 2.91) negative experiences.

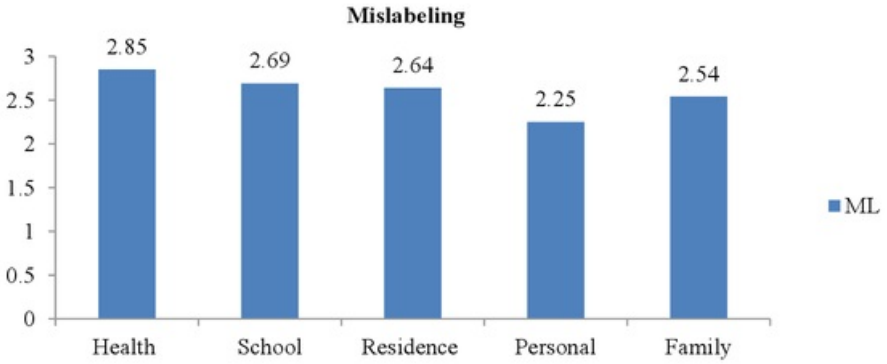

Figure 16. Level of mislabeling error associated with different types of adverse life events experienced by adolescents.

Figure 16 displays the level of mislabeling among adolescents with different adverse life experiences. Data labels indicate that the maximum level of mislabeling was shown by adolescents who had experienced health related adverse events (M = 2.85).

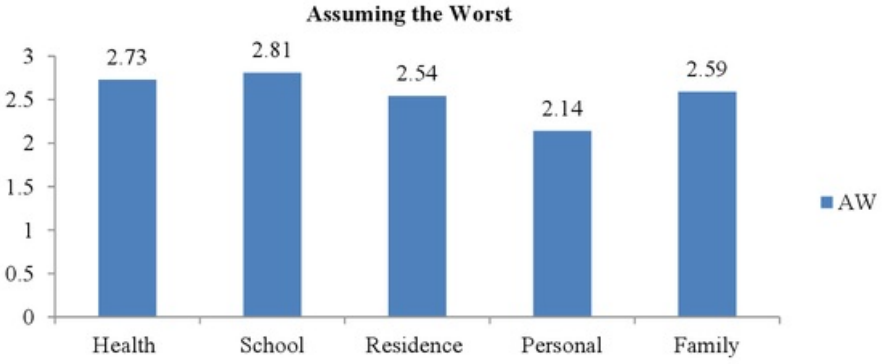

Figure 17. Level of assuming the worst error associated with different types of adverse life events experienced by adolescents

Figure 17 illustrates the level of assuming the worst with respect to different kinds of adverse life experiences of adolescents. Graphical values depict that the level of this

cognitive error was highest among adolescents who had experienced health related events more frequently (M = 2.81).

Level of Personality Traits (Figure 18-22)

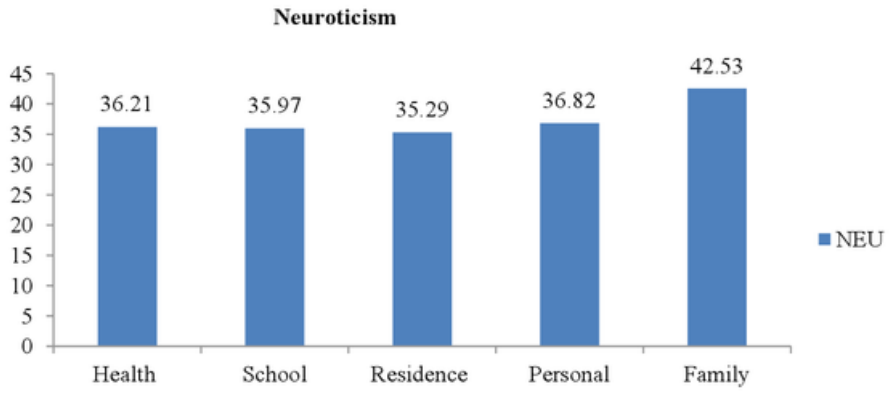

Figure 18. Level of neuroticism trait associated with different types of adverse life events experienced by adolescents.

Figure 18 demonstrates the level of neuroticism among adolescents with various kinds of adverse life experiences. Values in the graph reveal that adolescents who had experienced family related adverse life events expressed the highest level (M = 42.53) of neurotic symptoms than adolescents with other types of adverse experiences.

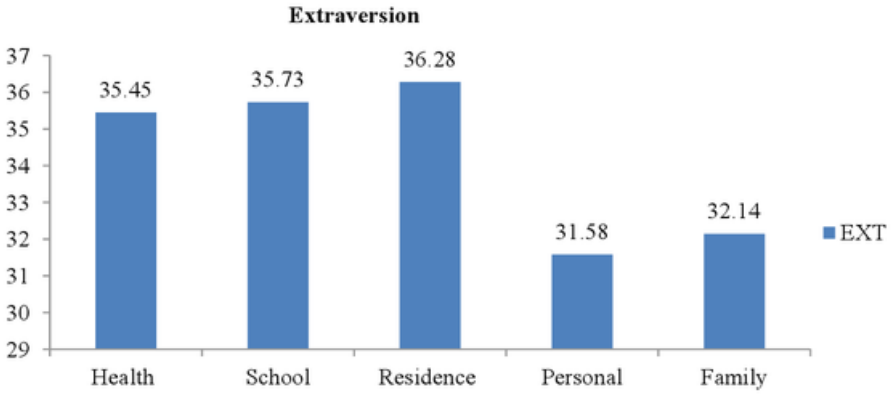

Figure 19. Level of extraversion trait associated with different types of adverse life events experienced by adolescents

Figure 19 highlights the level of extraversion with respect to different adverse life events experienced by the adolescents. Values of the bar chart indicate that the level of extraversion was at maximum among adolescents having residence related negative experiences ($M = 36.28$).

Figure 20 illustrates adolescents' level of openness with respect to various adverse life experiences. Values reveal the highest level of openness among adolescents with residence related negative experiences ($M = 36.78$).

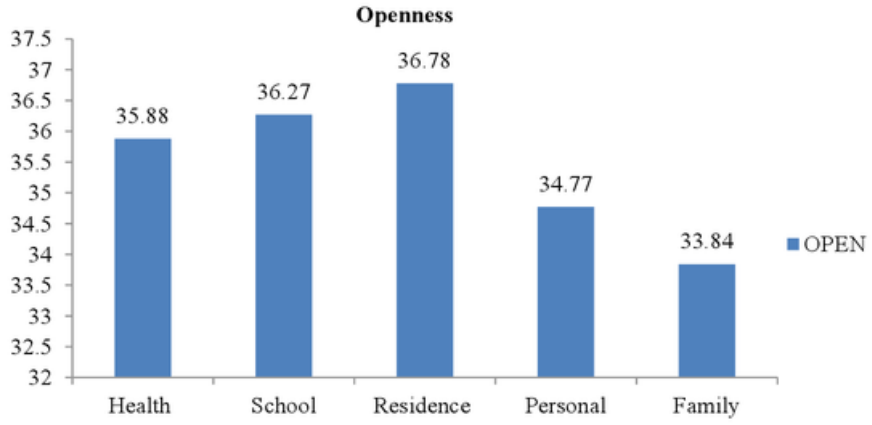

Figure 20. Level of openness trait associated with different types of adverse life events experienced by adolescents

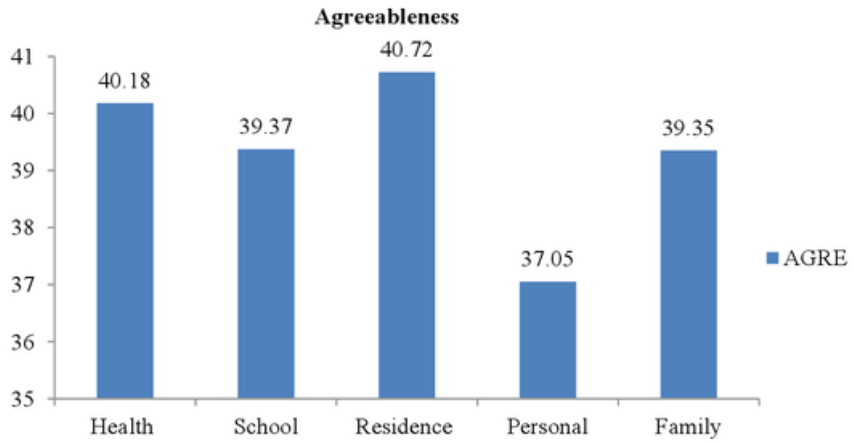

Figure 21. Level of agreeableness trait associated with different types of adverse life events experienced by adolescents

Figure 21 show the graphical presentation of the level of agreeableness among adolescents having different adverse life experiences. Chart values depict that adolescents who had experiences residence related adverse experiences showed the highest level of agreeableness ($M = 40.72$).

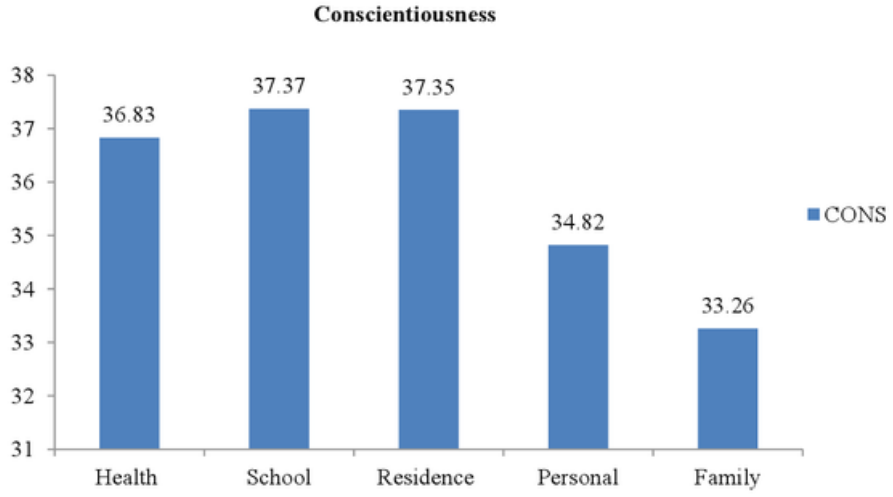

Figure 22. Level of conscientiousness associated with different types of adverse life events experienced by adolescents

Figure 22 depicts adolescents' level of conscientiousness across various adverse life events categories. Data labels reveal that the degree of conscientiousness was at maximum among adolescents with school related ($M = 37.37$) and residence related negative experiences ($M = 37.35$).

Discussion

Pilot study was primarily aimed validating ALES (which was developed in the first part of this study), examining the factor structure of CNCEQ and HIT-Q and establishing the psychometric characteristics i.e. reliability coefficients, and item-total correlations. This part of the study further purported to examine the direction of relationship between all the study variables.

Development and Validation of ALES

During the last few decades, owing to the unfortunate circumstances in the global scenario i.e., terrorism and extremism, social and political instability, poor socio-economic conditions, and meager healthcare profile; children and adolescents have been the most victimized population to suffer physically as well as psychologically. Along with their usual developmental pressures, exposure to these kinds of life adversities has put them at greater risk for the development of emotional and behavioral problems. Researchers have shown a surge interest in studying the effects of stressful life events on the mental health of children and adolescents. A couple of instruments i.e. Life Event Questionnaire (Norbeck, 1984), Adverse Life Events Scale (Tiet et al. 1998), The Life Events Checklist (Stack, Haldipur et al., 1987) and Life Events Checklist (LEC; Johnson & McCutheon, 1980) have been devised to measure the nature and intensity of negative life experiences.

However, these instruments intend to measure adverse life events experienced by adult population and none of them particularly focuses on the adverse experiences faced by children or adolescents. Moreover, all these measures have been gestated, formulated and validated in the western cultures with poor ecological validity in eastern cultures. This little cultures relevance of the events has been a major constraint in the global application of these instruments. Although many of the events are universal in nature, occurring under the similar circumstances with the same intensity, but others are chiseled as well as emic in

nature with specific local and contextual boundaries. So the import and blind use of these instruments in our culture may limit our understanding to the phenomenon being studied and we may omit many of the crucial and grievous events that have been occurring very frequently in Pakistan with the lasting and detrimental impacts on social and emotional health of its natives, particularly, the young population. As the purpose of the present study was to assess the impacts of adverse life events on adolescents' emotional and behavioral problems, so devising a culturally sensitive and appropriate tool to assess the magnitude and intensity of the possible adverse life experiences of adolescents was a pre-requisite of the study. Hence this was the primary objective of the pilot study, to develop and validate ALES to measure adolescents' experiences of adverse life events.

Efforts have been made to make ALES psychometrically valid and reliable measure. Scale was developed through reviewing the literature, already existing instruments of adverse life events and focus group discussions. Events occurring to the adolescents or children or significant others, relevant to different domains of their life (i.e., Health, School, Residence, Personal, Family & Friends and Natural Disasters), were added in the scale. After devising, the items were put in front of the subject matter experts for the critical review of the content and the face validity of the scale. To achieve the first objective of pilot study, the concurrent validity of ALES was established by correlating the scale with SCPS and its subscales. SCPS was set as criterion and it was expected that the adolescents having experiences of adverse life events will also score high on SCPS and its subscales. The significant positive correlations (Table 2) between ALES and SCPS and its subscales provided strong evidence that ALES has a good concurrent validity. Further evidence, to endorse these results, was earned by establishing the content validity of the scale. Items were reviewed by the experts and minimum one third of the favorable ratio for each item was secured. Both the concurrent and content evidences are sufficient to justify

that ALES is a valid instrument to measure adolescents' experiences of adverse life events in the indigenous Pakistani perspective and therefore can confidently be used for the main study as well.

Factor Structure of CNCEQ and HIT-Q

Second objective of the study was to determine the factor-structure and construct validity of CNCEQ and HIT-Q. The research, exploring the relationship between cognitive vulnerability and childhood anxiety is based on Beck's cognitive model (1979), postulating - that psychopathology is the result of systematic errors in perception and misinterpretation of environmental events. A better understanding of these malfunctioning cognitive processes in youth depends largely upon a reliable and valid instrument. Although a number of instruments, e.g., the Children's Attributional Style Questionnaire Revised (Thompson, Kaslow, Weiss, & Nolen-Hoeksema, 1998) and The Children's Dysfunctional Attitude Scale (Abela & Sullivan, 2003) have been developed to assess cognitive errors, most of these instruments focus on only one or two dimensions of the maladaptive cognitions. One instrument that covers a broader range of these cognitive distortions is Children's Negative Cognitive Errors Questionnaire (CNCEQ), developed by Leitenberg et al. (1986). Based upon Beck's cognitive behavior theory, CNCEQ measures four principal cognitive errors: catastrophizing, overgeneralization, personalization, and selective abstraction in three content areas (athletic, social and academic). CNCEQ has been frequently used to measure cognitive errors and faulty information processing among depressed (Kingery et al., 2009) and anxious (Karakaya et al., 2007; Pereira et al., 2012) youth. However, the cross-cultural application of CNCEQ depends upon the psychometric strength particularly the construct validity of the scale.

Earlier studies of probing into the factor structure of CNCEQ have shown inconsistent findings supporting a single-factor, three-factor and a four-factor model of

CNCEQ. First time this inconsistency was pointed out by Cole and Turner (1993) who used confirmatory factor analysis with a non-clinical sample of 356 adolescents: findings supported a single-factor model instead of the four-factor structure proposed by Leitenberg et al. (1986). Stewart et al. (2004) supported the findings of Cole and Turner by using a sample of high school children and suggested a single-factor solution for CNCEQ.

However, a few studies have also supported the multiple factor solution of CNCEQ. Karakaya et al. (2007) had assessed 538 school children (aged 9 to 14 years) and identified a three-factor solution; namely 'catastrophizing', 'personalizing', and 'selective abstraction'. Later on, Kingery et al. (2009) supported a four-factor model comprised of three content areas (social, academic, athletic) and one general factor, but could not find support for the four basic factors proposed by Leitenberg et al. (1986). Summarizing this debate, a strong discrepancy exists between the psychometric studies about the factor structure of CNCEQ, which is yet to be resolved.

Notwithstanding its shortcomings, CNCEQ has promised its potential utility of advancing theory and evaluating cognitive vulnerability among youth being widely used with clinical (Messer Kempton, Van Hasselt, Null, & Bukstein, 1994) as well as community samples (Maric et al., 2011). In Pakistan, one study using the Urdu version of the CNCEQ was carried out comparing depressed with non-depressed adolescents (Rehna, et al., 2012). But the study did not report the factorial validity of CNCEQ with Pakistani adolescents and argued for future research to address the issue. And, up till now, the task has yet to complete.

To verify the four-factor model of CNCEQ in the presents study, CFA was computed (Table 3) on a sample of 303 adolescents but the findings did not support the four-factor model of the questionnaire as none of the fit indices met the desired criteria for a good fitted model. Although these findings are in line with much of the existing literature

(i.e., Cole & Turner, 1993; Kingery et al., 2009; Stewart et al., 2004) but the strong factor loadings of items on their respective subscales (Table 4) encouraged us to reassess the model in the main study with a larger sample.

Another CFA was computed to confirm the six-factor model of HIT-Q (Table 3) which was translated in the Step-II of the pilot study. As discussed previously, HIT-Q measures self-serving cognitive errors which are positively biased towards one's own self. Literature of developmental psychopathology not only focuses the relevance of cognitive content with internalizing problems but also highlight the role of cognitive vulnerability in the manifestation of externalizing problems e.g. aggression, conduct disorder, delinquency (Frey & Epkins, 2002; Garnefski et al., 2005). Cognitive distortions relating to externalizing or conduct are basically central to the social information-processing theory (Crick & Dodge, 1994; Dodge & Coie, 1987), which characterized these distortions/deficits as biases in the information processing and serve as intervening factors between the environmental experiences and behavioral responses. These distortions minimize the feelings of guilt and empathy by blaming others for their own misconduct and mislabeling other people for self-justification (Andreu & Peña, 2013; Barriga et al., 2009; Capuano, 2011; Plante et al., 2012; Van der Velden et al., 2010).

To assess these self-serving cognitive distortions, HIT-Q is the most frequently measure which was developed by Barriga and his colleagues (2001). Comprising of the six factors (self-centered, blaming others, minimizing/mislabeling, assuming the worst, anomalous responses and positive filters), HIT-Q has been translated and validated with samples of French-speaking adolescents (Nas, Brugman, & Koops, 2008; Plante et al., 2012) and Spanish adolescents (Fernandez et al., 2013). These studies have confirmed the original factor structure of HIT-Q as proposed by Barriga et al. (2001) with English adolescents.

However in Pakistan, no instrument is available to assess self-serving cognitive distortions of adolescents. Since, HIT-Q is a theoretical based and empirically tested measure and has also been used for the clinical evaluations of adolescents (Gibbs, Potter, DiBiase, & Devlin, 2009), hence these promising results reinforced the present study to extend the use and applicability of the scale on Pakistani adolescents as well.

First, the scale was translated in Urdu using a back translation approach and followed by the execution of CFA (Table 3). However, the results of CFA did not support the six-factor model of HIT-Q with the Pakistani adolescents. These findings are quite contrary to the existing validations studies of HIT-Q (Barriga et al., 2001; Fernandez et al., 2013; Nas et al., 2008; Plante et al., 2012). But again, the strong factor loadings (Table 5) of each item against the respective subscales encouraged and reinforced us to reexamine the factor structure of HIT-Q in the main study with a larger sample.

Convergent and Discriminant Validity of CNCEQ and HIT-Q

Second objective of pilot study also aimed to examine the construct validity of CNCEQ and HIT-Q. This target was achieved through establishing convergent and discriminant validity coefficients (Table 6 to 8). To determine the convergent validity of CNCEQ (Table 6) the total scores and subscales were correlated with Anxiousness scale (a subscale of SCPS; Saleem & Mehmood, 2011). Findings revealed that Anxiousness showed significant positive correlation with all the subscales and with the total score of CNCEQ where 'Personalizing' showed the most significant relationship ($r = .70$, $p < .001$). These findings can be justified and supported by cognitive vulnerability model (Beck, Emery & Greenberg 1985; Kendall, 1985), postulating that anxious people tend to personalize the responsibility of any stressor or negative life event by amplifying and magnifying the importance of that negative event, generalize it to all other similar or dissimilar arenas of life and have the cataclysmic view of that event (Beck et al. 1985).

These findings reinforced the applicability and accuracy of CNCEQ to measure self-debasing cognitive errors of Pakistani adolescents.

To ascertain the convergent validity of HIT-Q (Table 7), the scale was correlated with Aggression Scale (a sub-scale of SCPS). The relationship between the self-serving cognitive distortion scales and aggression was in all cases in the expected direction. Particularly, when the different types of self-serving cognitive distortions were examined, all types showed significant correlation with aggression while "assuming the worst" showed the highest correlation. Interestingly, these results are quite in line with the study conducted by Fernandez et al. (2013). Convergent validity (r = .72) of the Spanish version was established with Reactive Proactive Aggression Questionnaire (Raine et al., 2006) and findings showed a significant relationship between cognitive distortions and both types of aggression. Further support comes from other researches (Andreu & Peña, 2012; Barriga et al., 2000; Calvete & Orue, 2010; Koolen et al., 2012) showing that committing any antisocial or aggressive behavior may trigger the feelings of shame and guilt which create a conflict between his misconduct and belief of being a good person. This state of dissonance can cause significant disturbance within the individual, hence, self-serving cognitive distortions are applied to relive this discrepancy. Because these errors alleviate or may completely dissolve the feelings of guilt, blame and responsibility, therefore, the individual feels protected from those negative feelings.

To establish the Discriminant validity (Table 8), CNCEQ (a measure of self-debasing cognitive errors) was correlated with HIT-Q (Gibbs et al., 2001), a measure of self-serving cognitive distortions. As expected a significant negative relationship emerged between the total scores of CNCEQ and HIT-Q (r = -.60, p < .001) and between each of the sub-dimension of two scales, except positive filters dimension. Similar findings have been reported in the previous researches by Quiggle et al., (1992) and Barriga et al., (2000).

These researches intended to explore the specific linkage of the two types of cognitive errors with internalizing and externalizing behavioral problems. Findings revealed that self-serving cognitive distortions were particularly related to externalizing behavioral problems i.e., conduct or anti-social behaviors whereas self-debasing cognitive errors were more proximal to internalizing behaviors i.e., anxiety and depression. These results also get theoretical justification, as proposed by Beck (1985), self-debasing cognitive errors (CNCEQ) are negatively biased and targeted towards one's own self with a tendency to personalize the responsibility of negative events and assuming the worst possible outcome.

On the contrary self-serving cognitive errors (HIT-Q) are negatively biased towards other people with the inclination of mislabeling and blaming others for one's own wrongdoings (Barriga et al., 2008). These findings provide an empirical support and endorse the discriminant validity of CNCEQ and HIT-Q for the present study and boost our confidence that both measures are psychometrically and appropriate to use with the youth in Pakistani culture.

Reliability Coefficients of the Study Scales

Third objective of pilot study was to determine the psychometric characteristics of all the study scales. To meet the objective, reliability estimates and item-total correlations were computed for ALES, SCPS, SVITU, RSPM, CNCEQ, HIT-Q and NEO-FFI.

Cronbach's Alpha coefficient of ALES for the present study was .81 (Table 9) which shows that scale is highly reliable and appropriate to use with adolescent for measuring their experiences of adverse life events. Results (Table 9) have also shown high reliabilities for SCPS (.90) and its sub-scales from .74 to .92 indicating that SCPS is a reliable measure to use with adolescents for emotional and behavior problems. Further the findings of item-total correlations (Table 11) revealed that all the items were significantly positively correlated with the total scores of their respective subscales demonstrating that

all the sub scales of SCPS are internally consistent and reliable. These findings are congruent with that of Saleem & Mehmood (2011), as they reported high reliability coefficients for total and sub scales (α = .70 to .92) as well as high internal consistencies.

Reliability coefficients of CNCEQ and its subscales ranged from .90 to .94 (Table 9) which indicate that the scale is internally consistent. Later on, significant positive item-total correlations ranging from .65 to .85 (Table 13) further endorsed the internal consistency of CNCEQ and its subscales. These findings are aligned with the results obtained in the original questionnaire (Leitenberg et al., 1986) and the subsequent researches (Pereira et al., 2012; Flouri & Panurgia, 2011; Kingery et al., 2009) reporting high internal consistency and alpha coefficients for CNCEQ and the subscales.

High reliability estimates and good internal consistencies added to the psychometric strength of HIT-Q. Values of alpha reliabilities for the total scale (α = .92) and subscales (.86 to .89) of HIT-Q are reported in Table 9 indicating that HIT-Q Urdu version is a psychometrically sound and reliable measure to be used with Pakistani adolescents. Results of item-total correlations (Table 14) were also significant and positive indicating that these constructs are internally consistent and closely related. Other studies have reported moderate to high correlations between the HIT-Q scales both in community samples of adolescents and young offenders (Nas et al., 2008). Positive Filters subscale showed a significant and negative correlation with all the self-serving cognitive distortion subscales consistent with Fernández et al., (2013).

Table 9 also provides alpha coefficients for the sub-domains of NEO-FFI. Reliability estimates of personality traits ranged from .74 to .88 for the presents study. Moreover, significant item-total correlations for each of the personality dimension (Table 15) added to its psychometric strength and endorsed the internal consistency and reliability of the scale. Existing researches (Hirschi & Herrmann, 2013; Gullone & Moore, 2000)

provide support for our findings by claiming good reliability estimates for NEO-FFI. Altogether, findings of the present study conclude that NEO-FFI is a reliable measure to assess personality traits of adolescents.

Findings (Table 10) depicted that SVITU and its subscales have good alpha, KR-20 and split-half reliability coefficients (ranging from .71 to .95). Furthermore, significant item-total correlations for total and subscales of SVITU (Table 12) added confidence that SVITU is internally consistence and reliable measure to assess verbal cognitive abilities of adolescents. These findings are closely aligned with the original study (Hussain, 2000) which reported high KR-20 and split-half reliabilities for SVITU and its subscales.

Alpha, KR-20 and split-half estimates were also calculated for RSPM (Table 10) which were .78, .78 and .75 respectively indicating that RSPM is an internally consistent and reliable measure to use with adolescents population. These findings are in line with the previous researches (i.e., Abdel-Khalek, 2005; Moran, 2008; Raven, 2000; Şahİn, Güler, & Basim, 2009) reporting dependable psychometric properties of RSPM.

Last objective of pilot study was to examine the direction of relationship between the study variables. Table 16 displays results findings of inter correlations between the study variables and the values indicate that experience of adverse life events showed significant positive correlation with each of the emotional and behavioral problems of adolescents. These findings get justification and empirical support from numerous researches (i.e., Fischer, Dölitzsch, Schmeck, Fegert, & Schmid, 2016; Flouri, Hickey, Mavroveli, & Huury, 2011; Flouri & Kallis, 2011; Hagan, Sulik, Lieberman, 2015) reporting a significant positive association between negative or traumatic events and adolescents' psychopathology. Kim et al. (2003) provided rather more comprehensive evidence by establishing an inverse relationship between stressful life experiences and internalizing and externalizing behavioral problems among adolescents.

Table 16 also revealed a significant that adolescents' problems showed significant positive relationship with self-debasing cognitive errors (catastrophizing, personalizing, selective abstraction and over generalization) and significant negative relationship with self-serving cognitive errors (self-centeredness, blaming others, mislabeling and assuming the worst). However aggression was positively associated with self-serving cognitive errors and positively associated with self-debasing cognitive errors. Based upon Beck's cognitive model (1976) a number of researches (Aldao, Nolen-Hoeksema & Schweizer, 2010; Beck & Freeman, 1990; Cannon & Weems, 2010; Leung & Poon, 2001; Weems & Silverman, 2006; Weems & Stickle, 2005) have confirmed a positive association between self-defeating cognitions and developmental psychopathology. These researches highlight that youth with emotional difficulties frequently exhibit tendencies of self-blaming for negative occurrences, magnifying the negative effect of these occurrences and attending towards the minor negative details while ignoring more salient positive features of an event. A recent study by Flouri and Panourgia (2014) further endorsed these findings by establishing a linear relationship between negative automatic thoughts and emotional and behavioral problems of adolescents. At the same time some researches (i.e., Barriga et al., 2001; Fernandez et al., 2013; Garnefski et al., 2005) claimed that self-serving cognitive distortions are more closely associated with externalizing behaviors e.g. antisocial, conduct or aggressive behaviors and show a negative relation with emotional symptoms. The aforementioned researches provide empirical justification and endorsed the findings of the present study.

For personality traits, problems behaviors showed positive relationship with neuroticism while negative relationship with extraversion, openness, agreeableness and conscientiousness (Table 16). These findings are also congruent with existing literature which demonstrates that youth with behavioral and emotional difficulties are characterized

with higher level of neuroticism (Lahey & Waldman, 2003; Nigg, 2006; Slatcher & Trentacosta, 2011), and lower level of extraversion, openness, agreeableness, and conscientiousness (Costa & McCrae 1980; Goodwin & Engstrom 2002; Steel et al. 2008).

Verbal and nonverbal cognitive abilities showed significant negative relationship with adolescents' problems. The relation between behavioral problems and cognitive deficits has been widely reported. Researches (e.g., Halonen, Aunola, Ahonen, & Nurmi, 2006; Morgan, Farkas, Tufis, & Sperling, 2008; Trzesniewski, Moffitt, Caspi, Taylor, & Maughan, 2006) have supported the notion that cognitive abilities express a negative association with emotional or behavioral problems of adolescents and may display an inverse pattern over time. These studies establish an empirical base and enhance our confidence on the findings of the present study.

Exploratory Analyses on Adverse Life Events

Some exploratory analyses were also carried out to find the level of stress, emotional and behavioral problems, cognitive errors and personality traits with respect to different types of adverse life experiences of adolescents. Results have been displayed graphically from figure 2 to 22.

These findings revealed that family related adverse events were the most frequently experienced (Figure 2) and most stressful events (Figure 3) as reported by the adolescents. This illustration is quite in concord with the cultural perspective as Pakistan is a collectivist society where family bond is the most crucial and integral ecological base for individual survival. Family is the basic building block and serves as pillar to maintain equilibrium and provide protection from any threat or insecurity that may hamper the wellbeing of its members. Particularly adolescents, being in their developing ages, are more dependent on their families to meet their economic, academic, psychosocial, and most importantly their emotional needs. Therefore any traumatic or negative event

happening to their family members is perceived as the most stressful experience as it directly interferes with their emotional bond which ultimately results in the manifestation of different kinds of emotional problems (Figure 4, 6) i.e., anxiety and social withdrawal among children and adolescents.

However, somatic complaints, aggression and academic problems were higher in adolescents with experiences of school related adverse events. As reported by Torsheim and Wold (2001), students with high level of school related stress showed greater number of somatic symptoms e.g. headache, dizziness, abdominal pain and backache in comparison with those who experienced lower stress related to school domain. Hart, Hodgkinson, Belcher, Hyman, and Strickland (2013) later on confirmed these results and found a significant positive association between school stress and somatic symptoms among adolescents. Moreover, school related adversities i.e. conflicts with peers, educational system, and school violence have significant association with aggressive behaviors and academic problems of adolescents (Jin, Park, & Bae, 2011). These stressors may have an indirect relation with problem behaviors via low self-esteem or ego problems (Park, Choi, & Lim, 2014).

Figure 10 to 13 depict the degree of self-debasing cognitive errors with regard to various forms of adverse life events experienced by adolescents. Findings suggest that all four types of self-debasing cognitive errors (catastrophizing, personalizing, selective abstraction, and overgeneralization) were exhibited at a higher level by the adolescents who experienced personal types of adversities more frequently. Personal traumas or stressful experiences i.e. child abuse or family neglect are usually marked by cognitive elements e.g. tendencies of self-deprecation and self-accusation (Poletti, Colombo & Benedetti, 2014). These self-degrading attitudes basically result from immature and

maladaptive information processing and interpretation of the menace consorted with that adverse event.

Figure 14 to 17 provide graphical depiction of the degree of self-serving cognitive errors expressed in different sorts of adverse life experiences. As their name implies, *self-serving,* these errors have emerged as protective factors rather than risk factors in the context of adverse life experiences. Values of the graphs revealed that the magnitude of these errors was highest in health or school related events which were perceived as the least stressful types of events among all categories (as evidenced from Figure 3) by the adolescents. Researches (Hubbard & Pealer, 2009) have shown that school related traumas e.g. school failure, bullying or poor performance may generate the feelings of guilt and damage to self-image by activating egocentric bias in cognitive processing through which a young adolescent garbles reality to defend his ego. Such cognitive biases are characterized with an inclination to attribute positive outcomes and success to one's own self and assign negative consequences and failure to environmental causes (Coalson, 2014) and this trend prevails ubiquitously among adolescents.

Figure 18 to 22 represent the expression of personality traits of adolescents while experiencing different types of adverse life events. The level of neuroticism was highest among adolescents who had adverse experiences of family or personal domain (considered as more stressful by the subjects). Numerous researches (Bolger & Schilling, 1991; Bolger & Zuckerman, 1995; Gunthert, Cohen, & Armeli, 1999; Penley & Tomaka, 2002) have endorsed this notion that neurotic personalities show temperamental sensitivity and emotional instability toward threatening or stressful events or stimuli i.e. familial loss, parental problems or conflicts (Ellenbogen & hodgins, 2004) and early life adversities including physical, emotional, and sexual abused etc (Herrenkohl, Sousa, Tajima, Herrenkohl, & Moylan, 2008). Moreover, individual with neurotic personality profile

appraise such events as more stressful and tend to make negative evaluation of self, others, and their experiences more readily (Gunthert et al., 1999; Schwebel & Suls, 1999) than individuals with positive personality traits.

Summing up the discussion, findings of the pilot testing revealed that all the study scales show satisfactory psychometric properties including validity coefficients, reliabilities, item-total correlations, and inter-scale correlations. These results provide encouragement to use these measures in the main study for hypothesis testing phase. However, HIT-Q and CNCEQ are decided to be reexamined in the main study (on the basis of strong factor loadings and good convergent and discriminant validity of both measures) for the confirmation of factor-structure. Moreover all the correlations between the study variables lie in expected direction and are further endorsed by exploratory findings suggesting proceeding for the main study.

Chapter IV

Phase-III: Main Study

Phase-III of this research comprised of the main study which was planned to examine the impact of adverse life events on adolescents' emotional and behavioral problems and examining the moderating role of cognitive factors and personality traits. Main study purported to meet the following objectives:

Objectives

1. To study the impact of adverse life events, cognitive abilities (i.e., verbal, nonverbal), cognitive errors (i.e., self-debasing and self-serving), and personality traits on emotional and behavioral problems among adolescents
2. To study the moderating role of cognitive Factors (i.e., cognitive abilities and cognitive errors) in the relationship between the experience of adverse life events and emotional and behavioral problems among adolescents
3. To study the moderating role of personality traits in the relationship between the experience of adverse life events and emotional and behavioral problems among adolescents
4. To examine group differences for demographics on the study variables

Hypotheses

1. Adverse life events lead to emotional and behavioral problems among adolescents
2. Cognitive abilities (i.e., verbal and nonverbal) negatively predict emotional and behavioral problems among adolescents
3. Cognitive errors (i.e., self-debasing and self-serving) positively predict emotional and behavioral problems among adolescents
4. Neuroticism positively predicts emotional and behavioral problems among adolescents

5. Extraversion, agreeableness, openness, and conscientiousness traits negatively predict emotional and behavioral problems among adolescents
6. Verbal (i.e., vocabulary, verbal reasoning, numerical ability, and general knowledge) and nonverbal cognitive abilities buffer the effects of adverse life events on emotional and behavioral problems of adolescents
7. Self-debasing (i.e., catastrophizing, personalizing, selective abstraction, and overgeneralization) and self-serving (i.e., self-centeredness, blaming others, mislabeling, and assuming the worst) cognitive errors boost the effects of adverse life events on emotional and behavioral problems of adolescents
8. Neuroticism personality trait boosts the effects of adverse life events on emotional and behavioral problems of adolescents
9. Extraversion, agreeableness, openness, and conscientiousness personality traits buffer the effect of adverse life events on emotional and behavioral problems of adolescents

Sample

Sample of the main study comprised of 663 adolescents (boys = 435, girls = 228) with the age ranged from 10-19 years (M = 15.22, SD = 1.66). Following a purposive convenient method, participants were approached from Government schools of Islamabad, Rawalpindi, and Gujarat cities of Pakistan with the consent of Directorate of Education, relevant authorities of the schools, and the adolescents themselves. Students were studying in 7th (17%), 8th (29.6%), 9th (22.8%), and 10th (21.9%) academic years of their schooling among those 52.5% belonged to joint family system. A sample of 720 adolescents was collected out of which the data of 57 participants was discarded because of incomplete information. The final sample of the main study, then, comprised of 663 adolescents with

an attrition rate of almost 8%. The demographic detail of the main study sample is given in Table 17.

Table 17

Frequencies and Percentages of Demographic Characteristics of the Sample (N = 663)

Variables	*f*	*%*
Gender		
Boys	435	65.6
Girls	228	34.4
Missing	0	0
Age		
Early Adolescents	105	15.8
Middle Adolescents	416	62.7
Late Adolescents	142	21.4
Missing	0	0
Family System		
Nuclear	311	46.9
Joint	348	52.5
Missing	4	0.6%
Income Group		
Lower	167	25.2
Middle	234	35.3
High	184	27.8
Missing	78	11.8

Instruments

Same instruments (used in the pilot study) were used in the main study as well which are as under:

1. Consent Form and Demographic Sheet (*Appendix I*)
2. Adverse Life Events Scales (ALES; *Appendix III*)
3. School Children's Problems Scale (SCPS; *Appendix IV*)
4. Sajjad Verbal Intelligence Test Urdu (SVITU; *Appendix V*)
5. Raven Standard Progressive Matrices(RSPM; *Appendix VI*)
6. Children's Negative Cognitive Errors Questionnaire (CNCEQ; *Appendix VII*)
7. How I Think Questionnaire (HIT-Q; *Appendix IX*)

8. NEO Five Factor Inventory (NEO-FFI; *Appendix XI*)

Procedure

Data collection was started with the permission of Directorate of Education and relevant authorities of the schools. These authorities were given a brief introduction about the nature and objective of the study and were assured of taking all the research ethics into account while collecting data from adolescents. After the permission was granted, participants were approached and were briefed about objective of the research. Their approval of participation in the research was requested with an assurance of their rights of confidentiality, privacy and quitting the research at any point. Their willingness was taken through a consent form, along with demographic information and then they were screened out on the basis of Adverse Life Events Scale (ALES) as we needed only those adolescents who had experienced any/some adverse life events during the last one year. After screening a booklet of questionnaires [i.e. School Children Problem Scale (SCPS), Children Negative Cognitive Errors Questionnaire (CNCEQ), How I Think Questionnaire (HIT-Q), Sajjad Verbal Intelligence Test Urdu (SVITU), Raven's Standard Progressive Matrices (RSPM), and NEO-Five Factor Inventory (NEO-FFI)] was handed over to the participants. Again data was collected in two days because the length and large number if instruments. Participants were given instructions in Urdu as all the questionnaires were transcribed in Urdu language. All the participants were provided refreshment on both days of data collection. The whole research was conducted on the expense provided by Higher Education Commission of Pakistan.

Results

This section holds the results of the main study analyses regarding hypothesis testing. Main study was aimed at examining the impact of adverse life events, cognitive abilities (i.e., verbal and nonverbal), cognitive errors (i.e., self-debasing and self-serving) and personality traits on adolescents' emotional and behavioral problems. The study also intended to observe the moderating power of cognitive abilities, cognitive errors, and personality traits in the relationship between experience of adverse life events and emotional and behavioral problems of adolescents. In order to meet the aforementioned objectives and to test the hypotheses of this study, linear and multiple regression analyses as well as moderation analyses were carried out in this section. Some additional analyses were also carried out to investigate group differences on demographic factors (i.e. gender, family system, age, and income) for all the study variables.

In order to deal with the missing data, 'common point method' was used and the missing values were replaced with the middle value of the scale. Proportion of missing data was set as less than 10% as proposed by Bennett (2001) whereas data sets with 10% or above missing ratio were regarded as incomplete data sets and were discarded form the study.

As previously discussed (p. 112), it was decided in the pilot study to re-examine the factor structure of CNCEQ and HIT-Q on the basis of strong factor loadings of items on the respective subscales and good convergent and discriminant validity. Indices of the model fit for both scales are given in Table 18.

Table 18

Goodness-of-Fit Indicators for Four-Factor Model of Children Negative Cognitive Errors Questionnaire and How I Think Questionnaire (N=663)

Model	χ^2	*Df*	χ^2/df	CFI	NFI	RMSEA
CNCEQ	956.13	218	4.38	.93	.92	.07
HIT-Q	5632.93	1320	4.26	.91	.89	.07

Note: CNCEQ = Children Negative Cognitive Errors Questionnaire; HIT-Q = How I Think Questionnaire

Table 18 shows the goodness of fit indices for the four-factor model of CNCEQ and six-factor model of HIT-Q. Values of both models indicate acceptable fit as the values of RMSEA (.07 and .07) are less than .08 falling in acceptable range. The values of CFI and NFI are greater than .90 and indicate a good fit for the four-factor model of CNCEQ and the six-factor model of HIT-Q.

Following Table 19 displays alpha coefficients and descriptive statistics for all the study variables. Values of the table suggest that all alpha coefficients of all the study scales lie in satisfactory range indicating the good reliability power of the scales. Values of kurtosis and skewness also lie in acceptable range providing the evidence that the data was normally distributed.

Table 19

Descriptive statistics of the study variables (N=663)

Scales	No. of Items	α	*M*	*SD*	Skewness	Kurtosis
ALES	87	.90	104.39	43.35	.36	.62
Anxiousness	12	.91	23.89	10.81	.53	-1.02
Aggression	8	.89	23.06	5.71	.26	-1.37
Social Withdrawal	7	.85	14.98	5.69	.33	-.97
Somatic Complaints	4	.83	7.75	3.51	.50	-.98
Academic Problems	8	.85	17.58	7.92	.75	1.24
Feelings of Rejection	5	.91	9.52	4.90	.68	-.91
Catastrophizing	6	.87	15.04	6.68	.73	-.41
Personalizing	6	.88	17.56	7.11	.23	-.79
Selective Abstraction	6	.84	14.62	5.73	.51	-.41
Over Generalization	6	.89	15.08	7.19	.69	-.67
Self-centeredness	9	.85	4.97	.66	.12	-1.22
Blaming Others	10	.84	4.56	.87	.14	-.55
Mislabeling	9	.80	1.52	.43	.1.19	1.01
Assuming the Worst	11	.85	1.43	.39	1.09	1.06
Neuroticism	12	.84	38.42	9.87	-.24	-.51
Extraversion	12	.70	15.67	2.88	.40	-.81
Openness	12	.52	34.70	7.49	-.04	-.47
Agreeableness	12	.66	36.51	8.15	.10	-.39
Conscientiousness	12	.70	36.69	8.32	-.41	-.52
Vocabulary	42	.86	22.29	10.19	.23	-1.50
Verbal Reasoning	20	.66	10.71	3.49	-.20	-.94
Numerical Ability	36	.88	20.97	7.53	-.05	-1.38
General Knowledge	30	.86	17.86	5.50	-.28	-.93
Nonverbal Ability	60	.93	29.17	6.16	-.45	-.36

Predictive Role of Study Variables for Emotional and Behavioral Problems

Linear regression analysis was used to investigate the impact of adverse life experiences and nonverbal cognitive ability on adolescents' emotional and behavioral problems. To examine the impact of verbal cognitive abilities, cognitive errors and personality traits on problems, multiple regression analyses were computed by using 'Enter Method Approach.' Pallant (2007) preferred this method as it calculates the joint effect of the set of independent variables on the outcome variable as well as evaluates the individual predictive power of each of the independent variable. Following tables (20-25) present the results of regression analyses on emotional and behavioral problems by adverse life events and other independent variables.

Table 20

Regression Analysis on Emotional and Behavioral Problems by Adverse Life Events (N=663)

Adverse Life Events	*B*	*SE B*	*B*	95% CI *LL*	95% CI *UL*
Anxiousness					
	.08	.01	.33**	.06	.10
$R = .33$, $R^2 = .11$, $\Delta R^2 = .11$ ($F = 80.15$**)					
Aggression					
	.04	.005	.31**	.03	.05
$R = .31$, $R^2 = .09$, $\Delta R^2 = .09$ ($F = 67.71$**)					
Social Withdrawal					
	.04	.005	.32**	.03	.05
$R = .32$, $R^2 = .10$, $\Delta R^2 = .10$ ($F = 76.53$**)					
Somatic Complaints					
	.03	.003	.30**	.02	.03
$R = .30$, $R^2 = .09$, $\Delta R^2 = .09$ ($F = 66.55$**)					
Academic Problems					
	.05	.01	.29**	.04	.07
$R = .29$, $R^2 = .08$, $\Delta R^2 = .08$ ($F = 60.14$**)					
Feelings of Rejection					
	.03	.004	.30**	.03	.04
$R = .30$, $R^2 = .09$, $\Delta R^2 = .09$ ($F = 65.69$**)					

**$p<.001$

Table 20 shows the impact of the experience of adverse life events on each of the emotional and behavioral problems of adolescents. Findings indicated that by taking the experience of adverse life events as the predictor of anxiousness, the magnitude of the model fit (ΔR^2 = .11) revealed significant relationship (F = 80.15, p < .001) by contributing 11% of variability in anxiousness. This implies that one unit increase in the experience of adverse life events will result in .33 increase in anxiousness (B = .33). These findings indicate that experience of adverse life events is a significant predictor of anxiousness among adolescents. The value of Adjusted R^2 (ΔR^2 = .09) with significant F ratio (F = 67.71, p < .001) reflects that experience of adverse life events accounts for 9% variance in aggression. Assessing beta weights reflect that increasing the experience of adverse life events by one unit will increase adolescent aggression by .31 units (B = .31, β = .04, p < .001). For social withdrawal, experience of adverse life events explained 10% of variability with significant F ratio (ΔR^2 = .10, F = 66.55, p < .001). Assessing beta weights reflect that one unit increase in the experience of adverse life events will increase social withdrawal by .32 units (B = .32, β = .04, p < .001). The value of Adjusted R^2 (ΔR^2 = .09) for somatic complaints indicate that experience of adverse life events explained up to 9% variability in somatic complaints among adolescents with significant F ratio (F = 66.55, p < .001). Beta values indicated that one unit increase in adverse life events experience will lead to .30 units increase in somatic complaints (B = .30, β = .03, p < .001). For academic problems 8% of variance (ΔR^2 = .08, F = 60.14, p < .001) and for rejection 9% of variance (ΔR^2= .09, F = 65.09, p < .001) was explained by the experience of adverse life events.

Table 21

Multiple Regression Analysis on Emotional and Behavioral Problems by Verbal Cognitive Abilities (N=663)

	Anxiousness					Aggression					Social Withdrawal				
				95% CI					95% CI					95% CI	
V-A	*B*	*SE B*	*β*	*LL*	*UL*	*B*	*SE B*	*β*	*LL*	*UL*	*B*	*SE B*	*β*	*LL*	*UL*
VOC	-.48	.07	-.45**	-.62	-.33	-.26	.04	-.47**	-.34	-.18	-.25	.04	-.46**	-.33	-.18
VR	-.66	.23	-.21**	-1.11	-.19	-.05	.13	-.03	-.29	.19	-.31	.12	-.19*	-.55	-.07
NA	-.49	.12	-.35**	-.73	-.27	-.25	.06	-.32**	-.37	-.12	-.25	.06	-.33**	-.37	-.13
GK	-.05	.14	-.02	-.33	.24	-.13	.08	-.13	-.28	.02	-.02	.08	-.02	-.17	.13
	R = .39, R^2= .15, ΔR^2= .15 (F = 29.53**)					R = .36, R^2= 13, ΔR^2=.12 (F=24.51**)					R = .39, R^2= .15, ΔR^2=.15 (F=29.24**)				

	Somatic Complaints					Academic Problems					Rejection				
VOC	-.15	.02	-.42**	-.19	-.10	-.27	.06	-.35**	-.38	-.16	-.18	.03	-.38**	-.25	-.11
VR	-.11	.08	-.10	-.26	.05	-.45	.17	-.20*	-.79	-.11	-.30	.11	-.21**	-.51	-.09
NA	-.15	.04	-.32**	-.22	-.08	-.39	.09	-.37**	-.56	-.22	-.23	.05	-.35**	-.33	-.12
GK	-.07	.05	-.12	-.17	.02	-.15	.11	-.11	-.37	.06	-.06	.07	-.07	-.19	.07
	R = .37, R^2= .14, ΔR^2= .13 (F = 25.96**)					R=.33, R^2= .11, ΔR^2=.11 (F=20.69**)					R = .36, R^2=.13, ΔR^2=.12 (F=23.94**)				

**p<.001, **p<.01, *p<.05

Note: V-A= Verbal Ability Scale, VOC = Vocabulary, VR=Verbal Reasoning, NA=Numerical Ability, GK=General Knowledge

Results in table 21 show the impacts of verbal cognitive abilities on each of the emotional and behavioral problems of adolescents. Findings indicate that verbal cognitive abilities jointly accounted for 15% of variance in the anxiousness dimension of emotional and behavioral problems of adolescents with a significant F ratio (ΔR^2 = .15, F = 29.53, p < .001). Findings highlighted vocabulary as the strongest negative predictor (B = -.48, β = -.45, p < .001) of anxiousness suggesting that one unit increase in the ability of vocabulary will result in .48 units decrease in anxiousness. Similarly one unit increase in numerical ability (B = -.49, β = -.35, p < .001) will decrease anxiousness by .49 units. To predict aggression among adolescents the magnitude of the model fit (ΔR^2 = .12), revealed significant overall relationship (F = 24.51, p < .001) by contributing 12% of variance in aggression. Beta values indicate that vocabulary was the strongest negative predictor (B = -.26, β = -.47, p < .001) of aggression. Numerical ability was another significant predictor (B = -.25, β = -.32, p < .001) suggesting that one unit increase in numerical ability will decrease aggression by .25 units. For social withdrawal verbal cognitive abilities collectively explained up to 15% of variance (ΔR^2 = .15, F = 29.24, p < .001). Again vocabulary was the strongest negative predictor (B = -.25, β = -.46, p < .001) of social withdrawal and indicated that by one unit increase in general knowledge ability, social withdrawal will be decreased by .25 units. Numerical ability and verbal reasoning were also significant negative predictors of social withdrawal. The value of Adjusted R^2 for somatic complaints indicates that all the verbal abilities jointly accounted for up to 13% of variance (ΔR^2 = .13, F = 25.96, p < .001) in somatic complaints among adolescents. Findings show that numerical vocabulary and numerical ability were the strong negative predictors of somatic complaints. Beta weights for vocabulary (B = -.15, β = -.42, p < .001) reflect that increasing the ability by one unit will result in .15 units decrease in somatic complaints of adolescents. Whereas one unit increase in the numerical ability will

decrease somatic complaints by .15 units (B = -.15, β = -.32, p < .001). For academic problems verbal abilities collectively contributed up to 11% of the total variance (ΔR^2 = .11, F = 20.69, p < .001). Findings indicate that numerical ability was the strongest negative predictor of academic problems (B = -.39, β = -.37, p < .001). Beta value implies that increasing that ability of general knowledge will decrease the academic problems among adolescents by .39 units. Whereas the ability of vocabulary, as negative predictor (B = -.27, β = -.35, p < .001) explained decrease in academic problems by .27 units. To predict rejection among adolescents verbal abilities collectively explained 12% of variance (ΔR^2 = .12, F = 23.94, p < .001). Vocabulary was a stronger negative predictor (B = -.18, β = -.38, p < .001) of rejection reflecting that one unit increase in vocabulary will decrease feelings of rejection by .18 units. The second strong predictor was the numerical ability (B = -.23, β = -.35, p < .001) and the beta value indicates that one unit increase in numerical ability will decrease feelings of rejection by .23 units. Results also show that the general knowledge ability did not account for significant variance in any of the adolescents' problems. Overall findings indicate that all the verbal abilities showed negative associations with each of the emotional and behavioral problems of adolescents suggesting that increase in verbal cognitive abilities will decrease the effects of emotional or behavioral problems on adolescents.

Table 22

Regression Analysis on Emotional and Behavioral Problems by Nonverbal Cognitive Abilities (N=663)

				95% CI	
Nonverbal Ability	*B*	*SE B*	*β*	*LL*	*UL*
	Anxiousness				
	-.08	.06	-.05	-.19	.04
R = .05, R^2= .003, ΔR^2= .001 (F = 1.69)					
	Aggression				
	-.14	.03	-.18**	-.19	-.08
R = .18, R^2= .03, ΔR^2= .03 (F = 21.27**)					
	Social Withdrawal				
	-.03	.03	-.04	-.09	.03
R = .04, R^2= .001, ΔR^2= .000 (F = .97)					
	Somatic Complaints				
	-.001	.02	-.002	-.04	.03
R = .002, R^2= .000, ΔR^2= .002 (F = .003)					
	Rejection				
	-.05	.04	-.04	-.13	.03
R = .05, R^2= .002, ΔR^2= .001 (F = 1.38)					
	Academic Problems				
	-.09	.03	-.13**	-.14	-.04
R = .13, R^2= .02, ΔR^2= .02 (F = 11.42**)					

**p<.01; p>.05 = non-significant

Table 22 shows the impact of the nonverbal cognitive ability on each of the emotional and behavioral problems of adolescents. Findings indicate that nonverbal cognitive ability emerged as significant predictor of aggression (ΔR^2= .03, β = .18, F = 21.27, p < .001) and academic problems (ΔR^2= .02, β = .13, F = 11.42, p < .01) by contributing 3% of variability in anxiousness and 2% variance in academic problems respectively. However, for all other problems nonverbal cognitive ability did not show significant predictive power (p > .05).

Table 23

Multiple Regression Analysis on Emotional and Behavioral Problems by Children Negative Cognitive Errors (N=663)

	Anxiousness					Aggression					Social Withdrawal				
				95% CI					95% CI					95% CI	
CNCEQ	*B*	*SE B*	*β*	*LL*	*UL*	*B*	*SE B*	*B*	*LL*	*UL*	*B*	*SE B*	*β*	*LL*	*UL*
PERS	.47	.15	.35**	-.11	.49	-.35	.098	-.37**	-.44	-.06	.22	.07	.35**	.08	.36
CATA	.29	.16	.26**	-.003	.63	-.25	.09	-.29**	-.33	.03	.07	.08	.13	-.08	.22
OG	.33	.15	.23*	-.17	.78	-.19	.09	-.22*	-.37	-.01	.19	.07	.27*	.05	.33
SA	.21	.14	.19	-.12	.45	-.17	.09	-.15	-.35	.01	.13	.07	.15*	-.01	.27
	R=.82, R^2=.67, ΔR^2=.66 (F=152.46**)					R=.81, R^2=.66, ΔR^2=.66 (F=148.02**)					R=.83, R^2=.70, ΔR^2=.69 (F=173.07**)				
	Somatic Complaints					Academic Problems					Rejection				
PERS	.11	.04	.42**	.03	.18	.29	.07	.27**	.17	.43	.19	.06	.53**	.08	.21
CATA	.004	.04	.01	.06	.08	.35	.08	.29**	.19	.50	.16	.07	.37*	.02	.29
OG	.10	.04	.35*	.03	.18	.67	.08	.61**	.52	.83	.22	.07	.52**	.09	.35
SA	.05	.04	.14	.02	.18	.43	.08	.31**	.26	.59	.06	.06	.12	.008	.06
	R=.62, R^2=.38, ΔR^2=.37 (F=46.73**)					R=.50, R^2=.25, ΔR^2=.25 (F=54.77**)					R=.50, R^2=.25, ΔR^2=.24 (F=24.26**)				

**p<.001, .01, *p<.05, Non-significant = p>.05

Note: PERS=Personalizing, CATA=Catastrophizing, SA=Selective Abstraction, OG=Over Generalization

Results in Table 23 show that impacts of self-debasing cognitive errors on each of the emotional and behavioral problems of adolescents. Results indicate a strong fit of association between self-debasing cognitive errors and anxiousness dimension of problem behavior of adolescents (R=.82, F = 152.46, p < .001). Model accounted for 66% of variance in anxiousness (ΔR^2 = .66). Among the sub-dimensions of the self-serving cognitive errors, personalizing was the strongest predictor of anxiousness (B = .47, β = .35, p < .001) reflecting that increasing self-debasing cognitive errors by one unit will increase anxiousness by .47 units. Catastrophizing explained .29 units increase (B = .29, β = .26, p < .01) in anxiousness while overgeneralization dimension contributed .33 units increase in anxiousness among adolescents (B = .33, β = .23, p < .05). Results reveal that self-debasing cognitive errors jointly accounted for up to 66% of variance in aggression among adolescents (ΔR^2 = .66, F = 148.02, p < .001). Results further indicate that personalizing and Catastrophizing were the stronger negative predictors of aggression among adolescents. Personalizing explained .35 units decrease in aggression (B = -.35, β = -.37, p < .01) whereas Catastrophizing explained .25 units decrease in aggression among adolescents (B = -.25, β = -.29, p < .01). Overgeneralization was also a significant negative predictor of aggression (B = -.19, β = -.22, p < .05) explaining 19 units decrease in aggression. Selective abstraction was a non-significant predictor of anxiousness and aggression among adolescents. To predict social withdrawal self-debasing cognitive errors collectively contributed 69% of variance with significant F ratio (ΔR^2 = .69, F = 173.09, p < .001). Individually, personalizing was a significant and stronger positive predictor of social withdrawal (B = .22, β = .35, p < .01) causing .22 units increase in social withdrawal among adolescents. Overgeneralization explained .19 units increase (B = .19, β = .27, p < .05) while selective abstraction caused .13 units increase in social withdrawal. The value of Adjusted R^2 (ΔR^2 = .37, F = 46.73, p < .001) indicate that cognitive errors explained 37%

communal variance in somatic complaints of adolescents. While evaluating individually, personalizing was significant stronger predictor of somatic complaints (B = .11, β = .42, p < .01) reflecting that an increase of one unit in personalizing will increase somatic complaints by .11 units. Overgeneralization, another significant predictor of somatic complaints caused .10 units increase in somatic complaints (B = .10, β = .35, p < .05). To predict academic problems of adolescents, cognitive errors contributed 25% of cumulative variance (ΔR^2 = .25, F = 54.77, p < .001) where overgeneralization was the strongest predictor causing .67 units increase in academic problems of adolescents (B = .67, β = .61, p < .001). Selective abstraction was another significant predictor explaining .43 units increase in academic problems of adolescents (B = .43, β = .31, p < .001). Personalizing and catastrophizing also significantly predicted academic problems among adolescents. Results indicate that all the self-debasing cognitive errors shared 24% of variance in predicting feelings of rejection among adolescents (ΔR^2 = .24, F = 24.26, p < .001). While evaluating individually, personalizing and overgeneralization were the stronger predictors of feelings of rejection among adolescents. Personalizing explained .19 units increase (B = .19, β = .53, p < .01) whereas overgeneralization explained .22 units increase (B = .22, β = .52, p < .01) in feelings of rejection among adolescents. Catastrophizing was also a significant predictor causing .16 units increase (B = .16, β = .37, p < .05) in feelings of rejection.

Table 24

Multiple Regression Analysis on Emotional and Behavioral Problems by components of How I Think Questionnaire (N=663)

	Anxiousness					Aggression					Social Withdrawal				
				95% CI					95% CI					95% CI	
HIT-Q	*B*	*SE B*	*β*	*LL*	*UL*	*B*	*SE B*	*β*	*LL*	*UL*	*B*	*SE B*	*β*	*LL*	*UL*
AW	-.21	.05	-.34**	-.30	-.11	.14	.03	.36**	.07	.20	-.10	.03	-.31**	-.15	-.05
SC	-.28	.11	-.22*	-.50	-.07	.15	.07	.19*	.01	.29	-.14	.06	-.22*	-.26	-.03
ML	-.02	.08	-.02	-.19	.14	.06	.06	.07	-.05	.17	-.06	.04	-.10	-.15	.03
BO	-.27	.09	-.24**	-.45	-.09	.13	,06	.18*	.01	.25	-.11	.05	-.18*	-.20	-.01
	R = .68, R^2= .46, ΔR^2= .45 (F = 49.64**)					R = .65, R^2=.43, ΔR^2=.42 (F=43.91**)					R = .65, R^2=.43, ΔR^2=.42 (F=44.46**)				
	Somatic Complaints					Academic Problems					Rejection				
AW	-.02	.01	-.18	-.04	.000	.35	.08	.19**	.18	.51	-.03	.02	-.20**	-.07	-.001
SC	-.07	.03	-.28**	-.12	-.02	.28	.09	.21**	.11	.45	-.09	.04	-.23**	-.16	-.01
ML	-.02	.02	-.07	-.02	.06	.92	.09	.45**	.75	1.09	-.03	.03	-.08	-.03	.09
BO	-.06	.02	-.26**	-.10	-.02	.15	.06	.16*	.04	.26	-.07	.03	-.19*	-.13	-.01
	R = .58, R^2= .34, ΔR^2= .33 (F = 30.61**)					R = .38, R^2=.14, ΔR^2=.14 (F=27.45**)					R = .57, R^2=.32, ΔR^2=.31 (F=28.44**)				

**p<.001, .01, *p<.05, Non-significant = p>.05

Note: AW=Assuming the Worst, SC=Self-Centeredness, ML=Mislabeling, BO=Blaming Others

Table 24 shows the impacts of self-serving cognitive errors on each of the emotional and behavioral problems of adolescents. Results show that all types of self-serving cognitive errors demonstrated a negative association with anxiousness dimension of adolescents' problem behavior by sharing 45% of the total variance (ΔR^2 = .45, F = 49.64, p < .001). Assuming the worst was the strongest negative predictor of anxiousness. Beta values reflect that assuming the worst explained .21 units decease in anxiousness (B = -.21, β = -.34, p < .001) in anxiousness. Blaming other was also a significant negative predictor showing .27 units decrease in anxiousness (B = -.27, β = -.24, p < .05). Self-centeredness caused .28 units decrease in anxiousness with a beta value of -.27. To predict aggression among adolescents self-serving cognitive errors jointly accounted for up to 42% of the total variance with a significant F ratio (ΔR^2 = .42, F = 43.91, p < .001). Assessing through beta weights, assuming the worst was the strongest thinking error causing aggression among adolescents. Assuming the worst increased aggression by .14 units (B = .14, β = .36, p < .001) in aggression among adolescents. Self-centeredness and blaming others also explained significant increase in aggression by .15 and .13 units consecutively. For social withdrawal all of the thinking errors explained up to 42% communal variance (ΔR^2 = .42, F = 44.46, p < .001). While assessing individually, beta weights reflect that assuming the worst was again the strongest negative predictor of social withdrawal among all types of thinking errors by causing .10 units decrease (B = -.10, β = -.31, p < .001) in social withdrawal. Self-centeredness and blaming others were also significant negative predictors of social withdrawal. Beta values reflect that increasing self-centeredness by one unit will decrease social withdrawal by .14 units (B = -.14, β = -.22, p < .05) whereas blaming others explained .11 units decrease in social withdrawal (B = -.11, β = -.18, p < .05). For somatic complaints self-serving thinking errors collectively explained 33% of the total variance (ΔR^2 = .33, F = 30.61, p < .001). Self-centeredness and blaming others

caused .07 and .06 units decrease consecutively in somatic complaints. For academic problems self-serving cognitive errors jointly accounted for up to 14% of variance (ΔR^2 = .14, F = 27.45, $p < .001$). While analyzing individually, mislabeling showed the most significant effect by explaining .92 units increase in academic problems among adolescents (B = .92, β = .45, $p < .001$). Assuming the worst, self-centeredness and blaming others were also significant positive predictors of academic problems of adolescents. All of the thinking errors jointly accounted for up to 31% of variance (ΔR^2 = .31, F = 28.44, $p < .001$) to predict feelings of rejection among adolescents. Assessing through beta values, mislabeling was a non-significant predictor of rejection feelings whereas assuming the worst, self-centeredness and blaming others, being significant negative predictors, caused .03, .09 and .07 units increase in feelings of rejection consecutively.

Table 25

Multiple Regression Analysis on Emotional and Behavioral Problems by NEO-FFI (N=663)

	Anxiousness					Aggression					Social Withdrawal				
				95% CI					95% CI					95% CI	
	B	*SE B*	*β*	*LL*	*UL*	*B*	*SE B*	*β*	*LL*	*UL*	*B*	*SE B*	*β*	*LL*	*UL*
NEU	.42	.04	.38**	.34	.49	.26	.03	.32**	.20	.33	.22	.02	.39**	.18	.26
EXTR	-1.16	.15	-.31**	-.1.46	-.86	-.69	.09	-.35**.	-.88	-.52	-.56	.08	-.29**	-.72	-.39
OPEN	-.19	.06	-.13**	-.31	-.08	-.05	.03	-.07	-.02	.12	-.10	.03	-.14**	-.16	-.04
AGRE	-.31	.05	-.23**	-.41	-.21	-.22	.03	-.32**	-.28	-.16	-.16	.03	-.22**	-.21	-.10
CONS	-.09	.06	-.07	-.21	.04	-.04	.04	-.06	-.04	.11	-.004	.03	-.01	-.07	.06
	R = .61, R^2= .37, ΔR^2= .37 (F = 76.27**)					R=.40, R^2=.16, ΔR^2=.16 (F=25.03**)					R=.57, R^2=.33, ΔR^2=.32 (F=62.66***)				
	Somatic Complaints					Academic Problems					Rejection				
NEU	.12	.01	.33**	.09	.14	.10	.03	.12**	.04	.15	.13	.02	.27**	.09	.17
EXTR	-.43	.05	-.35**	-.53	-.33	-.90	.12	-.33**	-1.14	-.67	-.46	.08	-.27**	-.61	-.32
OPEN	-.06	.02	-.13**	-.09	.02	-.09	.05	-.08	-.18	.000	-.05	.03	-.07	-.10	.01
AGRE	-.08	.02	-.18**	-.11	-.04	-.28	.04	-.29**	-.36	-.20	-.10	.02	-.17**	-.15	-.05
CONS	-.003	.02	-.01	-.03	.04	-.24	.05	-.25**	-.14	-.33	-.09	.03	-.15**	-.15	-.03
	R=.56, R^2=.32, ΔR^2=.31 (F=60.13**)					R=.54, R^2=.29, ΔR^2=.28 (F=53.39**)					R=.52, R^2=.27, ΔR^2=.27 (F=47.89**)				

*p<.001, **p<.01, *p<.05, p>.05 = non-significant

Note: NEU=Neuroticism, EXTR=Extraversion, OPEN=Openness, AGRE= Agreeableness, CONS=Conscientiousness

Table 25 shows the impacts of big five personality traits on emotional and behavioral problems of adolescents. Findings reveal that to predict anxiousness problem among adolescents the big five personality dimensions collectively explained 37% of variance with significant F ratio (ΔR^2 = .37, F = 76.27, p < .001). While assessing individually through beta weights, neuroticism was the strongest positive predictor whereas extraversion, openness, and agreeableness were the strong negative predictors of anxiousness. Beta values indicate that increasing neuroticism by one unit will increase anxiousness by .42 units (B = .42, β = .38, p < .001) whereas increasing extraversion by one unit will result in 1.16 units decrease in anxiousness (B = -1.16, β = -.31, p < .001). Values also reflect that one unit increase in openness and agreeableness will decrease anxiousness by .19 units (B = -.19, β = -.13, p < .01) and .31 units (B = -.31, β = -.23, p < .001) respectively. However, conscientiousness did not show significant effect on anxiousness.

Value of Adjusted R^2 shows that the five personality traits shared 16% of variance to predict aggression among adolescents (ΔR^2=.16, F = 25.03, p < .001). Beta weights reflect that neuroticism was a strong negative predictor of aggression among adolescents suggesting that one unit increase in neuroticism will increase aggression by .26 units (B = .26, β = .32, p < .001). Extraversion and agreeableness were strong negative predictors of aggression. Values reveal that one unit increase in extraversion and agreeableness decreased adolescents' aggression by .69 (B = -.69, β = -.35, p < .001) and .22 (B = -.22, β = .32, p < .001) units respectively. However, openness and conscientiousness did not produce significant effect on aggression among adolescents.

Results show that personality traits jointly accounted for up to 32% of variance (ΔR^2=.32, F = 62.66, p < .001) in predicting social withdrawal among adolescents. While interpreting individually, neuroticism significantly increased while extraversion, openness,

and agreeableness decreased the level of social withdrawal among adolescents. Beta values indicate that one unit increase in neuroticism increased social withdrawal by .22 units (B = .22, β = .39, $p < .001$) while one unit increase in extraversion, openness and agreeableness decreased social withdrawal by .56 units (B = -.56, β = -.29, $p < .001$), .10 units (B = -.10, β = -.14, $p < .01$), and .16 units (B = -.16, β = -.22, $p < .001$) respectively. Conscientiousness did show significant effect on social withdrawal.

To predict somatic complain among adolescents personality traits collectively explained 31% of the total variance with a significant F ratio (ΔR^2=.31, F = 60.13, $p <$ .001). Assessing through beta values, neuroticism, extraversion, openness, and agreeableness produced significant effect on somatic complaints among adolescents. Beta weights show that neuroticism increased somatic complaints by .12 units (B = .12, β = .33, $p < .01$) whereas extraversion, openness, and agreeableness decreased somatic complaints by .43 units (B = -.43, β = -.35, $p < .001$), .06 units (B = -.06, β = -.13, $p < .01$), and .08 unit (B = -.08, β = -.18, $p < .001$) respectively. Values further indicate conscientiousness did not show significant effect on somatic complaints among adolescents.

For academic problems, results of multiple regression analysis indicate that personality traits jointly account for up to 28% variance with significant F ratio (ΔR^2=.28, F = 53.39, $p < .001$). Interpreting individually, except openness, all the traits significantly predicted academic problems of adolescents. Beta weights reflect that increasing neuroticism by one unit increased academic problems by .10 units (B = .10, β = .12, $p <$ .01). One unit increase in extraversion, agreeableness, and conscientiousness decreased academic problems by .90 units (B = -.90, β = -.31, $p < .001$), .28 units (B = -.28, β = -.29, $p < .001$), and .24 units (B = -.24, β = -.25, $p < .01$) respectively. Openness remained a non-significant predictor of academic problems among adolescents.

Regression analysis reveals that the big five personality traits explained 27% communal variance to predict feelings of rejection among adolescents (ΔR^2=.27, F = 47.89, p < .001). Interpreting separately, neuroticism was the strong positive predictor of feelings of rejection. Beta values indicate that increasing neuroticism by one unit increased feelings of rejection by .13 units (B = .13, β = .27, p < .001). The other significant predictors were extraversion, agreeableness, and conscientiousness and these traits predicted .46 units (B = -.46, β = -.27, p < .001), .10 units (B = -.10, β = -.17, p < .001), and .09 units (B = -.09, β = -.15, p < .01) decrease in feelings of rejection respectively. Findings indicate that openness did not show significant effect on feelings of rejection among adolescents.

Moderation Analyses

Moderating role of verbal (vocabulary, verbal reasoning, numerical ability, and general knowledge) and nonverbal cognitive abilities, self-debasing (catastrophizing, personalizing, selective abstraction, and overgeneralization) and self-serving (self-centeredness, blaming others, mislabeling, assuming the worst) cognitive errors and personality traits (neuroticism, extraversion, openness, agreeableness, and conscientiousness) was investigated in order to explicate the relationship between experience of adverse life events and emotional and behavioral problems of adolescents. Moderation of these variables was tested using Macro Process Analysis as proposed by Hayes (2013). Process is basically a computational method for testing path models i.e. moderation, mediation and their combinations and, in a single command, it provides many of the capabilities of Sobel test (Preacher and Hayes, 2004) and interaction term (Preacher & Hayes, 2008). Moreover it not only estimates the OLS regression coefficient but also generates conditional effects in moderation models.

Table 26

Moderating effect of Verbal Cognitive Abilities on Anxiousness among Adolescents (N = 663)

Variable		Anxiousness				
		B	*SE B*	*t*	*P*	*95%CI*
Constant		25.43	.64	39.69	.000	[24.18, 26.69]
EALE		.06	.02	3.005	.003	[.02, .09]
VOC		-.15	.09	-1.66	.097	[-.32, .03]
EALE × VOC		-.004	.001	-3.58	.000	[-.006, -.002]
R^2	.14					
F	54.36				.000	
Constant		24.75	.56	44.08	.000	[23.64, 25.85]
EALE		.08	.02	4.29	.000	[.04, .12]
VR		-.05	.25	-.19	.848	[-.54, .44]
EALE × VR		-.006	.002	-2.64	.008	[-.01, -.001]
R^2	.12					
F	39.58				.000	
Constant		25.01	.60	41.38	.000	[23.82, 26.20]
EALE		.17	.02	9.47	.000	[.13, .20]
NA		-.50	.11	-4.60	.000	[-.72, -.29]
EALE × NA		-.004	.001	-2.89	.004	[-.006, -.001]
R^2	.14					
F	52.92				.000	
Constant		24.46	.56	44.06	.000	[23.37, 25.55]
EALE		.09	.02	5.75	.000	[.06, .13]
GK		-.10	.15	-.69	.484	[-.19, .39]
EALE × GK		-.003	.002	-1.67	.094	[-.0005, .006]
R^2	.11					
F	38.65				.000	

p>.05= Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, VOC = Vocabulary, VR = Verbal Reasoning, NA = Numerical Ability, GK = General Knowledge

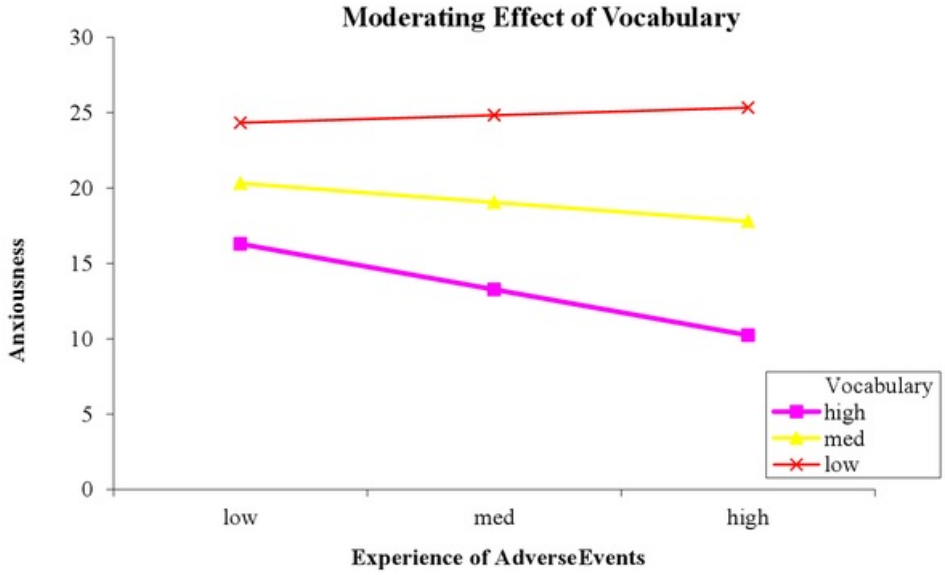

Figure 23. Moderating effect of vocabulary in predicting anxiousness among adolescents

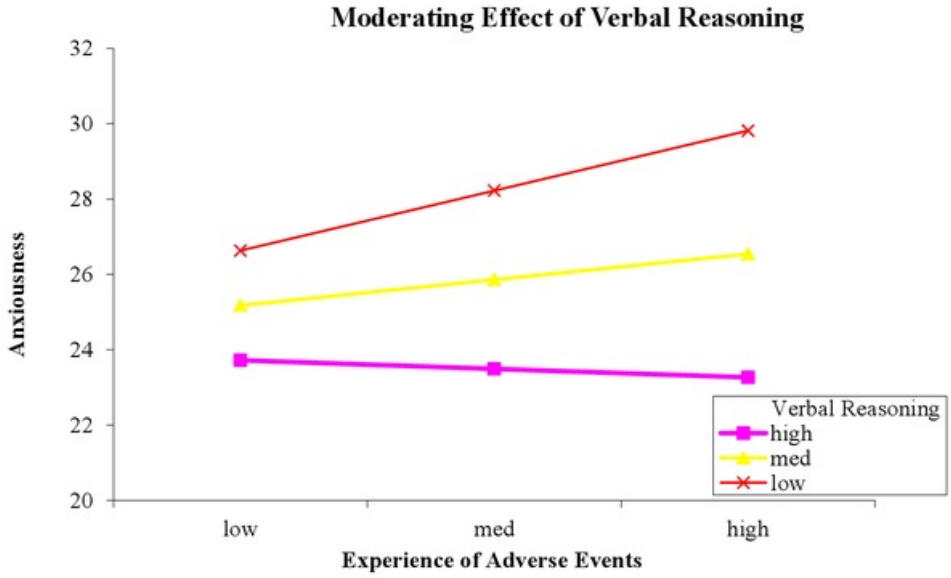

Figure 24. Moderating effect of verbal reasoning in predicting anxiousness among adolescents

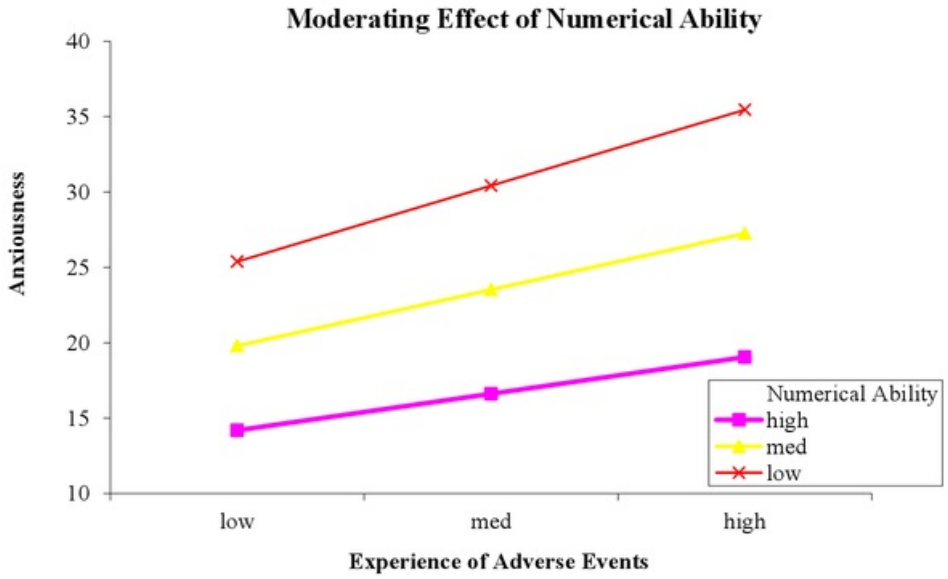

Figure 25. Moderating effect of numerical ability in predicting anxiousness among adolescents

Results presented in Table (26) demonstrate the moderating role of verbal cognitive abilities (i.e. vocabulary, verbal reasoning, numerical ability and general knowledge) in the association between experience of adverse life events and anxiousness among adolescents. Model 1 illustrates the interaction effect of vocabulary and experience of adverse life events on anxiousness among adolescents. Findings suggest that vocabulary and experience of adverse events interactively produced 14% (F (3, 659) = 54.36, R^2 = .14, $p < .001$) of variance in explaining anxiousness. Being a protective factor, vocabulary had a reversed effect in the model by buffering the effect of adverse life experiences on anxiousness among adolescents. The follow up mod graph (Figure 23) further explains this relationship at different levels (i.e. high, medium and low) of vocabulary. The line graph shows that high and medium levels of vocabulary decreased the effect of experience of adverse events on anxiousness whereas low level of the ability increased this effect among adolescents.

Model 2 shows results for the moderating effect of verbal reasoning ability. The interaction term revealed significant interaction effect (B = -.006, R^2 = .12, F (3, 659) = 39.58, p < .001) of verbal reasoning and experience of adverse life events. Mod graph (Figure 24) further explains that verbal reasoning served as a protective factor and buffered the effect of adverse life experiences on anxiousness among adolescents. The line graph shows that high level of verbal reasoning ability minimized the effect of experience of adverse life events on anxiousness whereas medium and high level of the ability raised this effect.

Model 3 demonstrates the results for the moderating effect of numerical ability. Values revealed a significant interaction effect (R^2 = .14, F (3, 659) = 52.92, p < .001) of numerical ability and experience of adverse life events explaining 14% of variance in the level of anxiousness among adolescents. Mod graph (Figure 25) further elaborates this effect by indicating that medium and low levels of numerical ability boosted the effect of adverse experiences on anxiousness whereas high level of numerical ability weakened the this effect.

Model 4 shows moderating role of general knowledge in the association between experience of adverse events and anxiousness among adolescents. Interaction term suggest that general knowledge did account for a significant effect (B = -.003, p = .094) in explaining anxiousness among adolescents.

Table 27

Moderating effect of Verbal Cognitive Abilities on Aggression among Adolescents (N = 663)

Variable		Aggression				
		B	*SE B*	*t*	*P*	*95%CI*
Constant		24.02	.32	73.76	.000	[23.37, 24.66]
EALE		.03	.01	3.29	.000	[.01, .05]
VOC		-.05	.05	-1.06	.288	[-.14, .04]
EALE × VOC		-.003	.0006	-4.11	.001	[-.004, -.001]
R^2	.13					
F	48.69				.000	
Constant		23.78	.29	81.50	.000	[23.20, 24.35]
EALE		.07	.01	6.66	.000	[.05, .09]
VR		-.32	.13	-2.41	.016	[-.58, -.06]
EALE × VR		-.005	.002	-3.53	.000	[-.01, -.002]
R^2	.12					
F	40.31				.000	
Constant		23.69	.31	75.56	.000	[23.08, 24.31]
EALE		.09	.009	10.13	.000	[.07, .11]
NA		-.30	-.06	-.5.47	.000	[-.41, .19]
EALE × NA		-.002	-.001	-2.67	.008	[-.001, -.004]
R^2	.13					
F	47.66				.000	
Constant		23.54	.31	78.32	.000	[22.95, 24.13]
EALE		.05	.009	4.92	.000	[.03, .06]
GK		-.02	-.07	-.29	.764	[-.12, .17]
EALE × GK		-.002	-.001	-2.32	.020	[-.004, -.0004]
R^2	.10					
F	27.74				.000	

p>.05=Non-significant, ***$p < .001$

Note: EALE = Experience of adverse Life Events, VOC = Vocabulary, VR = Verbal Reasoning, NA = Numerical Ability, GK = General Knowledge

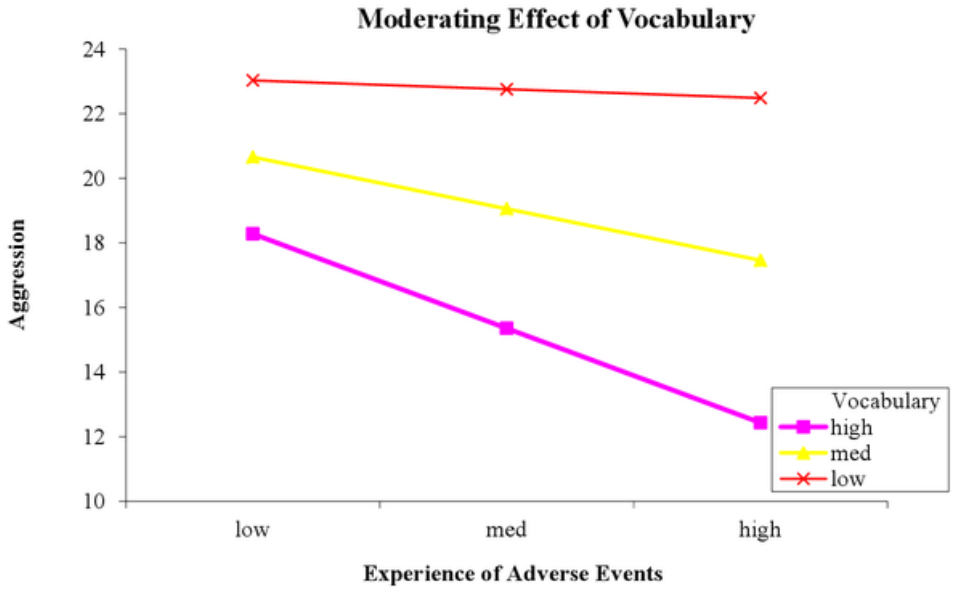

Figure 26. Moderating effect of vocabulary in predicting aggression among adolescents

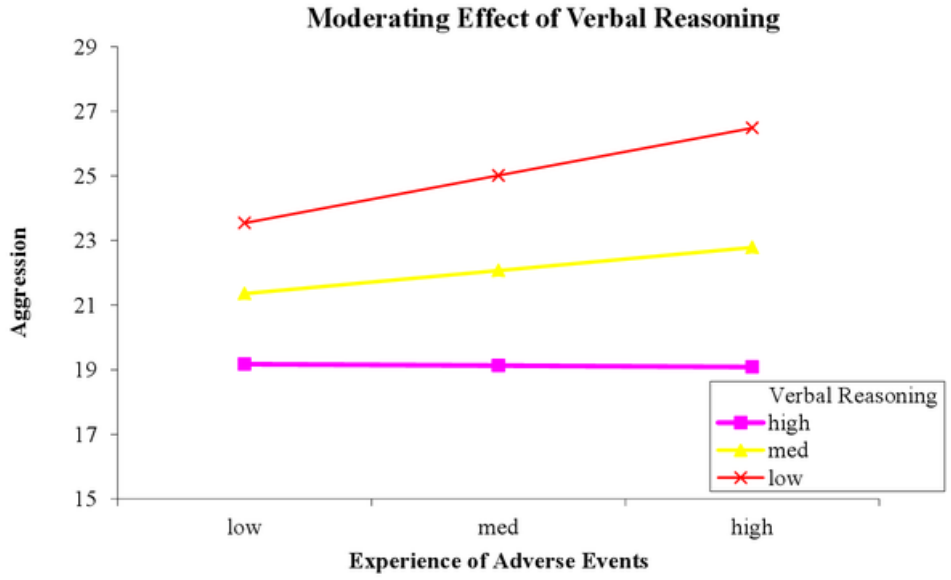

Figure 27. Moderating effect of verbal reasoning in predicting aggression among adolescents

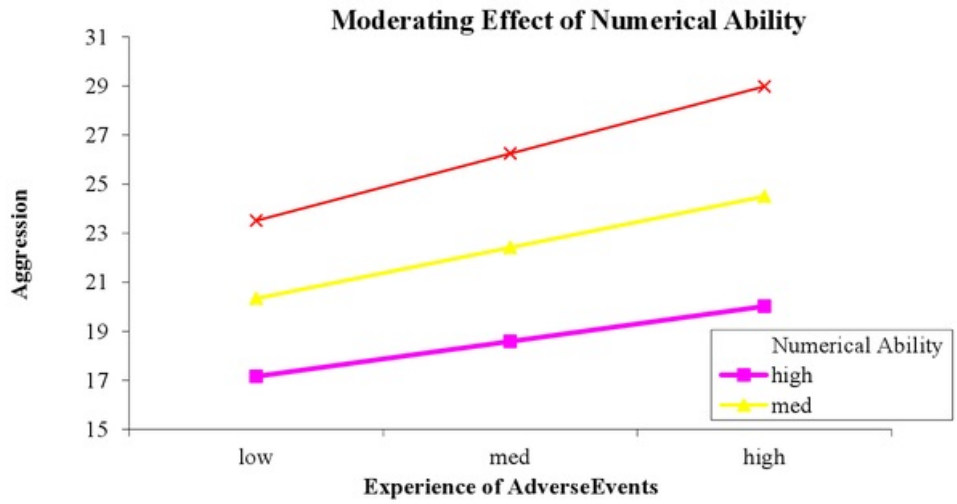

Figure 28. Moderating effect of numerical ability in predicting aggression among adolescents

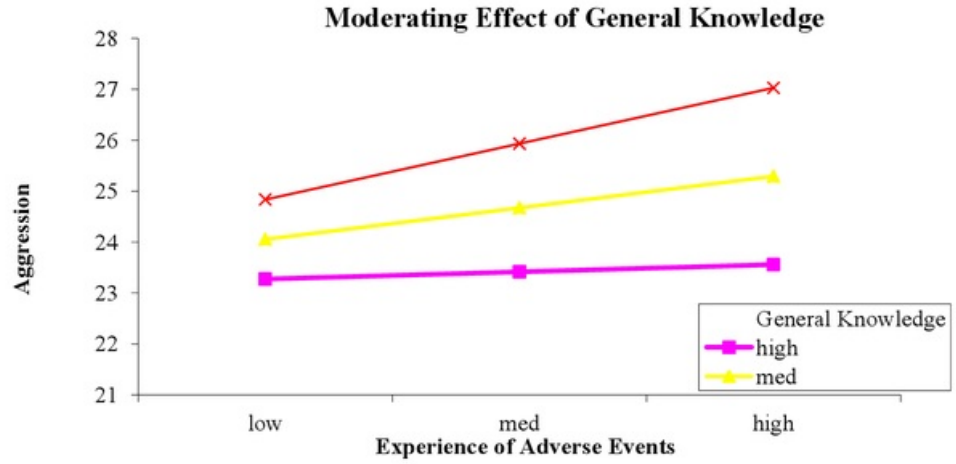

Figure 29. Moderating effect of general knowledge in predicting aggression among adolescents

Table 27 displays the results for moderating role of verbal cognitive abilities in relationship between experience of adverse life events and aggression among adolescents. Showing the moderating role of vocabulary Model 1 depicts significant interaction effect of vocabulary and experience of adverse life events (B = -.003, R^2 = .13, F (3, 659) = 48.69, p

< .001) in explaining aggression. Serving as a protective factor, ability of vocabulary buffered the impact of adverse life experiences on the level of aggression. Mod graph (Figure 26) also explains this pattern of relationship by demonstrating that high and medium level of vocabulary undermined the impact of adverse experiences on aggression; however no differences in the relationship emerged when the ability was at low level.

Model 2 shows moderating power of verbal reasoning in association of the experience of adverse life events and aggression. Interaction term between vocabulary and experience of adverse life events reveal a significant moderation effect (B = -.005, R^2 = .12, F (3, 659) = 40.31, p < .001) of verbal reasoning along with producing 12% of variance in aggression. Mod graph (Figure 27) further illustrates these results that medium and low level of verbal reasoning among adolescents aggravated the impact of adverse life experiences on aggression however the high level of ability weakened this impact.

Model 3 in the table explains the moderating effect of numerical ability. Findings reveal that the interaction effect of numerical ability and experience of adverse events was statistically significant (B = -.002, R^2 = .13, F (3, 659) = 47.66, p < .001) with explaining 13% of variance in adolescents' aggressive behavior. Graphical presentation of these results (Figure 28) explicate these findings by suggesting that medium and low levels of numerical ability aggravate the effect of adverse life experiences on aggressive behavior whereas weak effect was observed when the ability level was high.

Model 4 represents the results for moderation effect of general knowledge. Results reveal that general knowledge significantly moderated (B = -.002, R^2 = .10, F (3, 659) = 27.74, p < .001) the relationship between experience of adverse events and adolescents' aggression along with accounting for 10% of variance. Mod graph (Figure 29) elaborates these results with at different levels of general knowledge ability (i.e. high, medium and low). Line graph illustrates that decrease in general knowledge boost the effect of adverse

life experiences on adolescents' aggression. Medium level of the ability also showed the same trend however the high level of ability did not produce significant variations in explaining this effect.

Table 28

Moderating effect of Verbal Cognitive Abilities on Social Withdrawal among Adolescents (N = 663)

					Social Withdrawal	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		15.92	.33	47.74	.000	[15.26, 16.57]
EALE		.03	.01	2.86	.000	[.009, .048]
VOC		-.08	.05	-1.79	.073	[-.17, .007]
EALE × VOC		-.003	.001	-4.31	.000	[-.003, -.001]
R^2	.15					
F	51.59				.000	
Constant		15.62	.29	52.12	.000	[15.03, 16.21]
EALE		.04	.01	4.51	.000	[.02, .06]
VR		-.03	.12	-.27	.789	[-.27, .21]
EALE × VR		-.005	.001	-3.72	.000	[-.007, -.002]
R^2	.12					
F	41.07				.000	
Constant		15.85	.33	48.64	.000	[15.21, 16.49]
EALE		.09	.01	9.20	.000	[.07, .11]
NA		-.25	.06	-4.36	.000	[-.37, -.14]
EALE × NA		-.003	.001	-4.03	.000	[-.004, -.002]
R^2	.14					
F	51.77				.000	
Constant		15.48	.29	53.16	.000	[14.91, 16.05]
EALE		.05	.009	5.79	.000	[.03, .07]
GK		-.03	.07	-.42	.672	[-.11, .17]
EALE × GK		-.002	.001	-2.96	.003	[-.004, -.001]
R^2	.11					
F	38.46				.000	
Constant		15.95	.33	48.16	.000	[15.29, 16.59]
EALE		.05	.01	3.94	.000	[.03, .08]
VAT		-.005	.02	-.22	.828	[-.04, .05]
EALE × VAT		-.001	.0002	-4.51	.000	[-.001, -.0005]
R^2	.13					
F	45.39				.000	

*p>.05= Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, VOC = Vocabulary, VR = Verbal Reasoning, NA = Numerical Ability, GK = General Knowledge

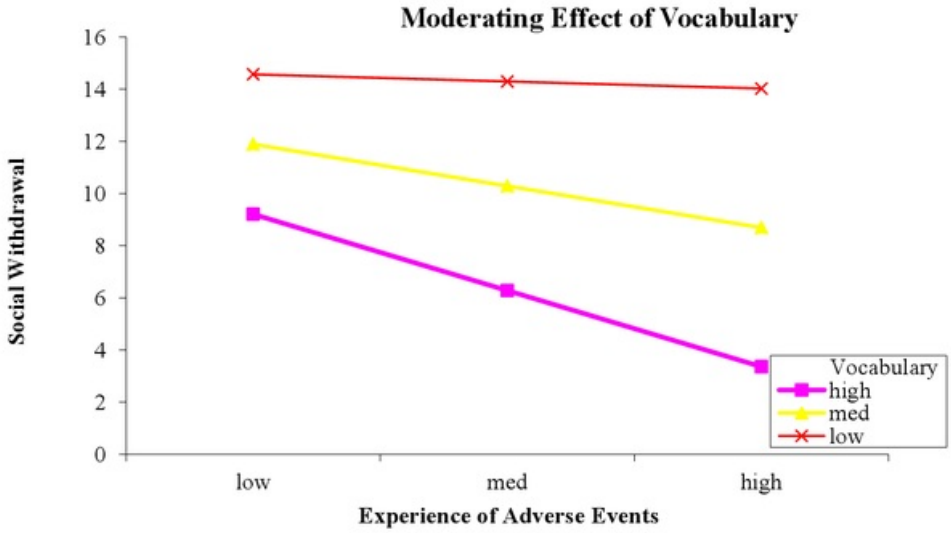

Figure 30. Moderating effect of vocabulary in predicting social withdrawal among adolescents

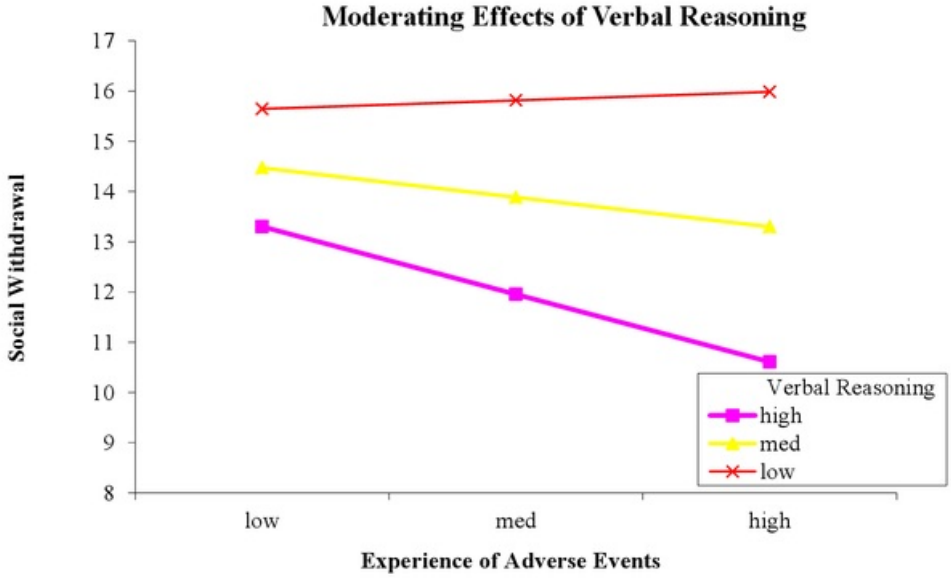

Figure 31. Moderating effect of verbal reasoning in predicting social withdrawal among adolescents

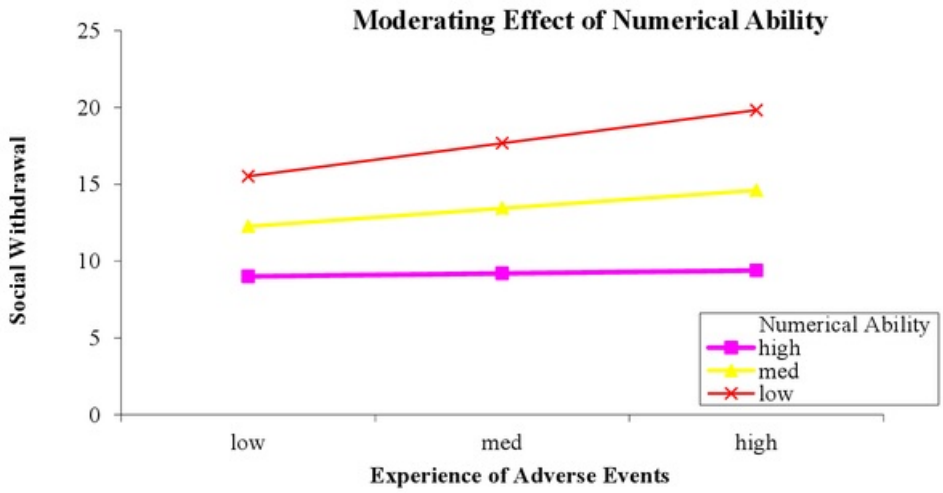

Figure 32. Moderating effect of numerical ability in predicting social withdrawal among adolescents

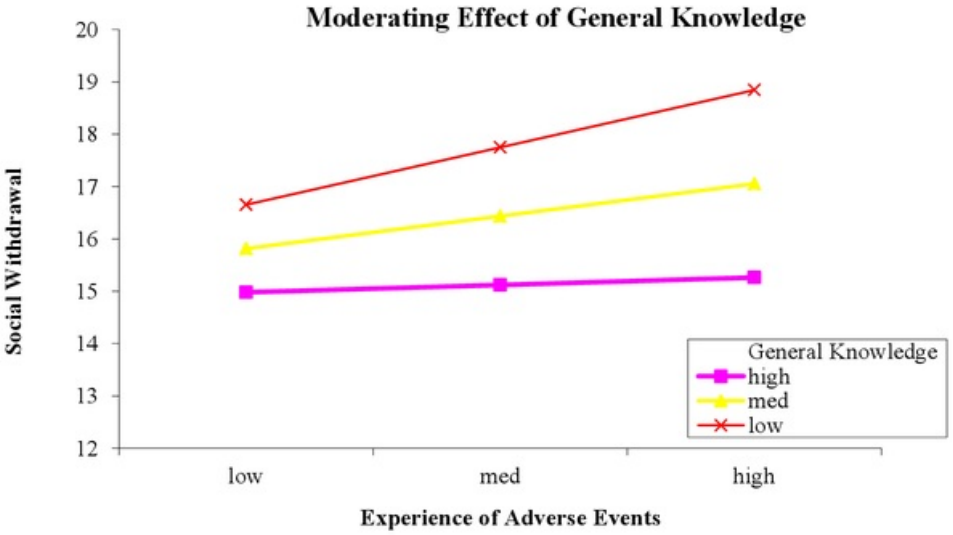

Figure 33. Moderating effect of general knowledge in predicting social withdrawal among adolescents

Results displayed in Table 28 show the moderating role of verbal cognitive abilities in the relationship between experience of adverse life events and social withdrawal among adolescents. Model 1 in the table explains the moderating effect of vocabulary. Results

depicted vocabulary as a strong moderator in explaining the impact of adverse life events on social withdrawal among adolescents. The interaction effect of vocabulary and adverse life experiences was statistically significant (B = -.003, R^2 = .15, F (3, 659) = 51.59, p < .001) by accounting for 15% of variance in social withdrawal among adolescents. Mod graph (Figure 30) illuminates this moderation effect at high, medium and low levels of vocabulary showing that high and medium levels of vocabulary minimized the effect of adverse life experiences. However low level of the ability did not accounted for any visible difference in this effect.

Model 2 in the table displays results for the moderating power of verbal reasoning ability. The significant interaction term (B = -.005, R^2 = .12, F (3, 659) = 41.07, p < .001) reveals that verbal reasoning significantly moderated the impact of adverse life experiences on social withdrawal along with explaining 12% of variance. Mod graph (Figure 31) elucidates these results by demonstrating that high and medium levels of verbal reasoning ability buffered the effect of adverse life experiences on social withdrawal among adolescents whereas the low level of this ability aggravated this effect.

Moderating effect of numerical ability is presented in Model 3 of the table which shows a significant interaction effect of the experience of adverse life events and numerical ability (B = -.003, R^2 = .14, F (3, 659) = 51.77, p < .001) on social withdrawal. Mod graph (Figure 32) further explicates this effect at different levels of numerical ability (i.e. high, medium and low). The line graph shows that medium and low levels of numerical ability exacerbated the effect of adverse life experiences on social withdrawal whereas high level of this ability did not produce any significant difference in this effect.

Model 4 exhibits results for the moderation effect of general knowledge. A significant interaction term suggests that general knowledge significantly moderated (B = -.002, R^2 = .11, F (3, 659) = 38.46, p < .001) the relationship between experience of adverse

life events and social withdrawal among adolescents along with account for 11% of variance. A line graph (Figure 33) illuminates this effect along three levels of numerical ability (high, medium and low). The graph shows that medium and low levels of numerical ability aggravated the effect of the experience of adverse life events on social withdrawal whereas high level of the ability did not produce any variation in this effect.

Table 29

Moderating effect of Verbal Cognitive Abilities on Somatic Symptoms among Adolescents (N = 663)

					Somatic Complaints	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		8.27	.20	41.02	.000	[7.88, 8.67]
EALE		.01	.006	2.33	.020	[.002, .03]
VOC		-.06	.03	-1.98	.047	[-.11, -.001]
EALE × VOC		-.001	.0004	-3.64	.000	[-.002, -.0006]
R^2	.13					
F	46.07				.000	
Constant		8.09	.19	43.36	.000	[7.72, 8.45]
EALE		.03	.006	4.27	.000	[.01, .04]
VR		-.01	.08	-.13	.895	[-.15, .17]
EALE × VR		-.002	.001	-2.70	.007	[-.004, -.001]
R^2	.10					
F	31.16				.000	
Constant		8.17	.20	40.35	.000	[7.77, 8.57]
EALE		.05	.006	8.21	.000	[.04, .06]
NA		-.13	.03	-3.70	.000	[-.20, -.06]
EALE × NA		-.001	.0005	-2.84	.005	[-.003, -.0004]
R^2	.12					
F	39.58				.000	
Constant		7.99	.18	43.83	.000	[7.63, 8.35]
EALE		.02	.006	3.76	.000	[.01, .03]
GK		-.04	.05	-.82	.410	[-.14, .06]
EALE × GK		-.001	.001	--2.06	.039	[-.002, -.0001]
R^2	.10					
F	28.51				.000	

p>.05=Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, VOC = Vocabulary, VR = Verbal Reasoning, NA = Numerical Ability, GK = General Knowledge

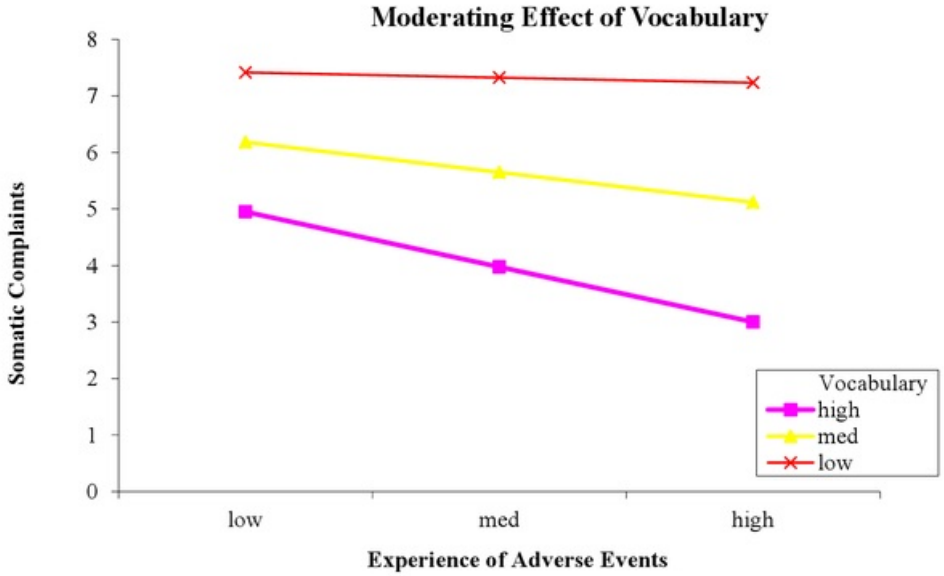

Figure 34. Moderating effect of vocabulary in predicting somatic complaints among adolescents

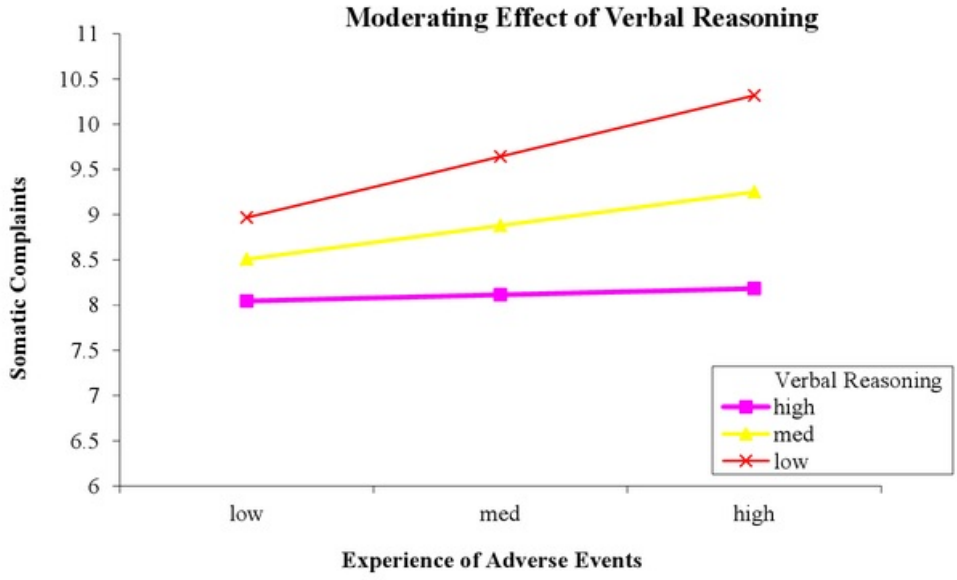

Figure 35. Moderating effect of verbal reasoning in predicting somatic complaints among adolescents

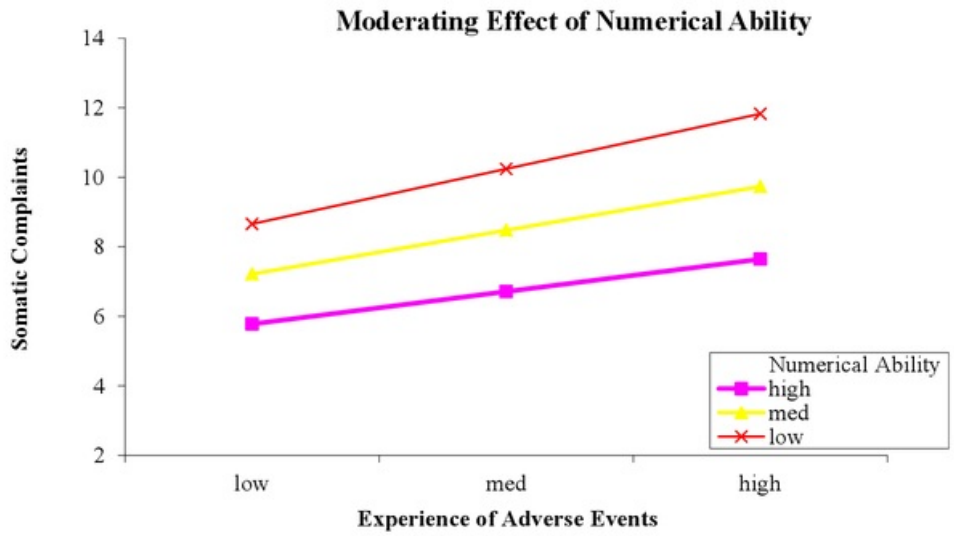

Figure 36. Moderating effect of numerical ability in predicting somatic complaints among adolescents

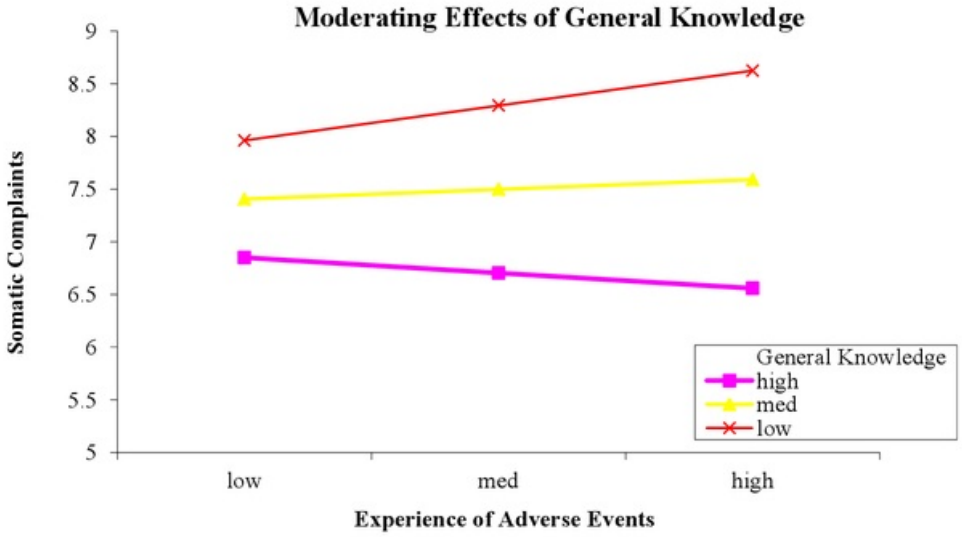

Figure 37. Moderating effect of general knowledge in predicting somatic complaints among adolescents

Results shown in Table 29 reveal the moderating effect of verbal cognitive abilities in the association between experience of adverse life events and somatic complaints among adolescents. Model 1 of the table displays the moderating power of vocabulary. Values

indicate that the ability of vocabulary significantly moderated (B = -.001, R^2 = .13, F (3, 659) = 46.07, p < .001) the effect of adverse life experiences by explaining 13% of variance in somatic complaints. A graphical presentation (Figure 34) made these findings evident by showing that an increase in vocabulary (i.e. high and medium levels) weakened the effect of adverse life experiences on somatic complaints among adolescents. However the low level of ability did not contribute any change in explaining this effect.

Model 2 of the table demonstrates the moderating role of verbal reasoning ability. Findings reveal that the interaction effect of verbal reasoning and experience of adverse life events was statistically significant (B = -.002, R^2 = .10, F (3, 659) = 31.16, p < .001) along with contributing 10% of variance in somatic complaints of adolescents. These results are graphically displayed in Figure 35 which depicts that a medium or low level of verbal reasoning boosted the relationship between the experience of adverse life events and somatic complaints among adolescents whereas high level of verbal reasoning did not explain any change in this relationship.

Model 3 of the table shows a significant moderation effect (B = -.001, R^2 = .12, F (3, 659) = 39.58, p < .001) of numerical ability in studying the impact of adverse life experiences on somatic complaints with explaining 12% of variance. This moderation effect is graphically explained in Figure 36 at different levels of numerical ability (i.e. high, medium and low). The graph exhibits that medium and low levels of the ability deteriorated the effect of adverse life experiences on somatic complaints whereas high level of the ability was related to low relationship between adverse life experiences and somatic complaints.

Results displayed in model 4 show a significant interaction effect of general knowledge and adverse life experiences (B = -.001, R^2 = .10, F (3, 659) = 28.51, p < .001) with explaining 10% of variance in somatic complaints of adolescents. These findings are

further explained in mod graph (Figure 37) which depicts that general knowledge significantly moderated the relationship between experience of adverse life events and somatic complaints among adolescents. The graph shows that high level of general knowledge alleviated the effect of adverse life experiences whereas medium and low levels of the ability exacerbated this effect on somatic symptoms.

Table 30

Moderating effect of Verbal Cognitive Abilities on Academic Problems among Adolescents (N = 663)

					Academic Problems	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		19.09	.47	40.53	.000	[18.17, 20.02]
EALE		.06	.01	4.21	.000	[.02, .09]
VOC		-.02	.07	-.26	.795	[-.11, .15]
EALE × VOC		-.004	.001	-5.03	.000	[-.006, -.002]
R^2	.11					
F	41.89				.000	
Constant		18.34	.42	43.96	.000	[17.52, 19.16]
EALE		.07	.01	4.70	.000	[.04, .09]
VR		-.12	.18	-.65	.515	[-.23, .46]
EALE × VR		-.006	.002	-3.21	.001	[-.09, -.002]
R^2	.09					
F	30.17				.000	
Constant		18.47	45	40.87	.000	[17.58, 19.36]
EALE		.13	.01	10.18	.000	[.10, .15]
NA		-.44	.07	-6.03	.000	[-.58, -.29]
EALE × NA		-.003	.001	-3.06	.002	[-.005, -.001]
R^2	.13					
F	45.55				.000	
Constant		17.65	.39	45.32	.000	[16.88, 18.41]
EALE		.06	.01	5.006	.000	[.04, .08]
GK		-.05	.11	-.54	.588	[-.15, .26]
EALE × GK		-.0004	.001	-.33	.745	[-.002, .002]
R^2	.08					
F	26.55				.000	

p>.05=Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, VOC = Vocabulary, VR = Verbal Reasoning, NA = Numerical Ability, GK = General Knowledge

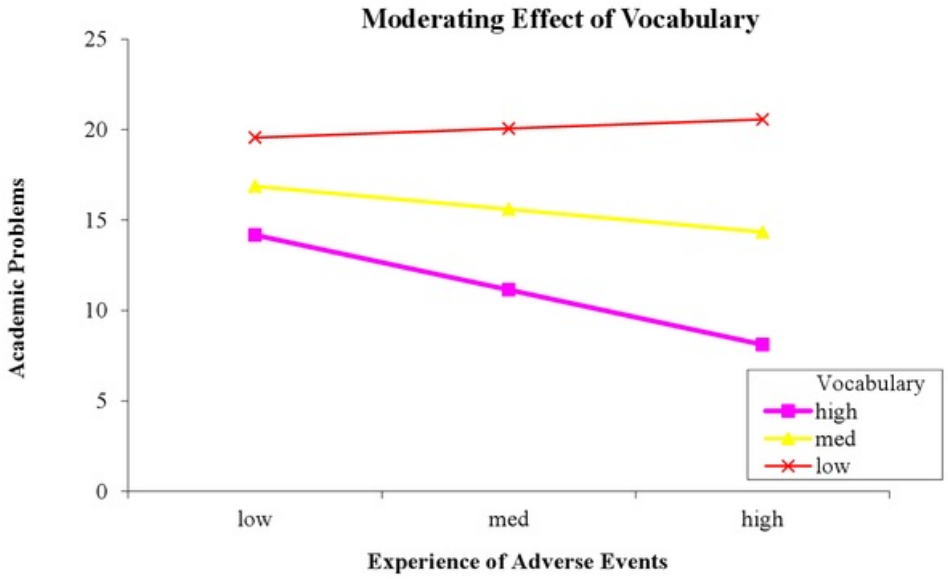

Figure 38. Moderating effect of vocabulary in predicting academic problems among adolescents

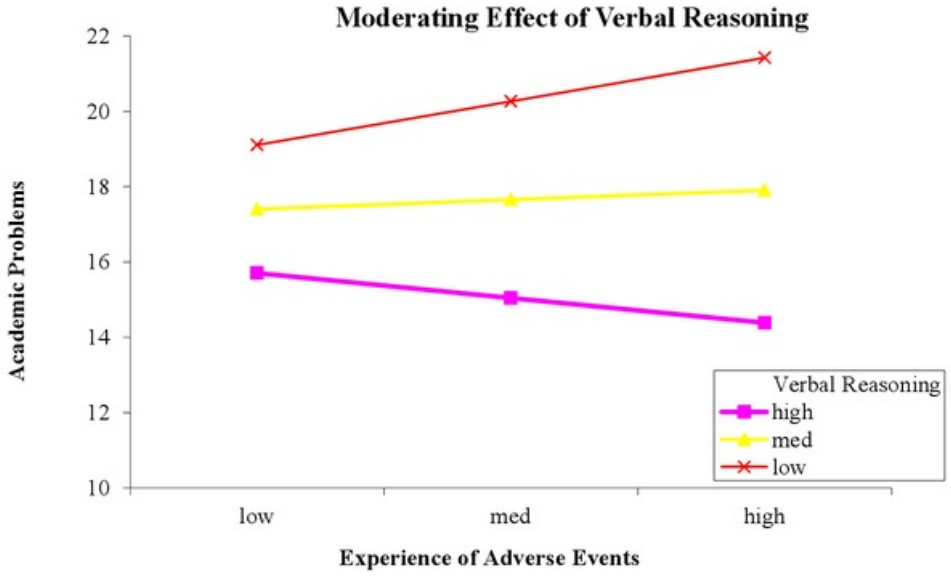

Figure 39. Moderating effect of verbal reasoning in predicting academic problems among adolescents

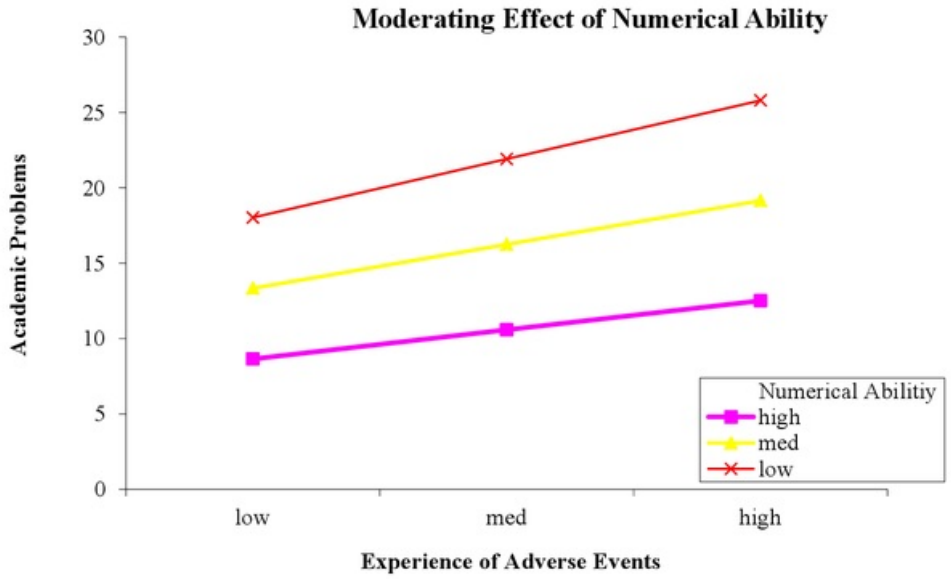

Figure 40. Moderating effect of vocabulary in predicting somatic complaints among adolescents

Table 30 exhibits the results for the moderating role of verbal cognitive abilities in the relationship between experience of adverse life events and academic problems among adolescents. Model 1 of the table highlights the moderation effect of vocabulary. Values of the interaction term express that vocabulary significantly moderated the effect of adverse life experiences (B = -.004, R^2 = .11, F (3, 659) = 41.89, p < .001) and explained 11% of variance in academic problems of adolescents. These results are illustrated through mod graph (Figure 38) which defines this moderation effect at high, medium and low levels of vocabulary. Line graph shows that high and medium levels of vocabulary had a negative effect in the relationship and palliated the effect of adverse life experiences on academic problems. At the contrary, low level of the ability escalated this effect.

Model 2 of the table shows results for the moderation effect of verbal reasoning ability. Findings of the model indicate that verbal reasoning had a significant moderation

effect (B = -.006, R^2 = .09, F (3, 659) = 30.17, p < .001) in the association between experience of adverse life events and academic problems of adolescents along with producing 9% of variance. A mod graph (Figure 39) further explicate these findings by suggesting that high level of verbal reasoning buffered the impact of adverse life experiences on adolescents' academic problems whereas low level of the ability deteriorated this effect. However medium level of verbal reasoning ability did not contribute any visible effect in this relationship.

Results for the moderation effect of numerical ability are given in model 3 of the table. A significant interaction term suggests that numerical ability significantly moderated (B = -.003, R^2 = .13, F (3, 659) = 45.55, p < .001) the effect of adverse life experiences on academic problems along with accounting for 13% if variance. These results are further elucidated through a graphical presentation (Figure 40) which depicts that medium and low levels of numerical ability boosted the effect of adverse life experiences on academic problems whereas high level of the ability was related to low relationship between experience of adverse events and academic problems among adolescents.

As far general knowledge is concerned, results reveal that this ability did accounted for significant moderation (B = -.006, p = .745) in the relationship between experience of adverse events and academic problems among adolescents.

Table 31

Moderating effect of Verbal Cognitive Abilities on Feelings of Rejection among Adolescents (N = 663)

Variable		Feelings of Rejection				
		B	*SE B*	*t*	*P*	*95%CI*
Constant		10.18	.29	34.98	.000	[9.60, 10.75]
EALE		.03	.009	3.05	.002	[.01, .04]
VOC		-.05	.04	-1.19	.231	[-.13, .03]
EALE × VOC		-.002	.0005	-3.57	.000	[-.003, -.001]
R^2	.12					
F	49.19				.000	
Constant		9.99	.26	38.09	.000	[9.48, 10.51]
EALE		.03	.01	3.88	.000	[.02, .05]
VR		-.03	-.11	-.29	.774	[-.25, .19]
EALE × VR		-.004	-.001	-3.24	.001	[-.006, -.001]
R^2	.10					
F	37.73				.000	
Constant		10.16	.28	35.88	.000	[9.61, 10.72]
EALE		.07	.008	9.56	.000	[.06, .09]
NA		-.23	.05	-4.82	.000	[-.32, -.14]
EALE × NA		-.002	.001	-3.64	.000	[-.004, -.001]
R^2	.12					
F	50.46				.000	
Constant		9.71	.25	38.50	.000	[9.21, 10.20]
EALE		.04	.008	4.91	.000	[.02, .05]
GK		-.02	.07	-.22	.825	[-.12, .15]
EALE × GK		-.001	.001	-1.26	.208	[-.001, .002]
R^2	.09					
F	31.69				.000	

*$p > .05$ = Non-significant, ***$p < .001$*

Note: EALE = Experience of Adverse Life Event, VOC = Vocabulary, VR = Verbal Reasoning, NA = Numerical Ability, GK = General Knowledge

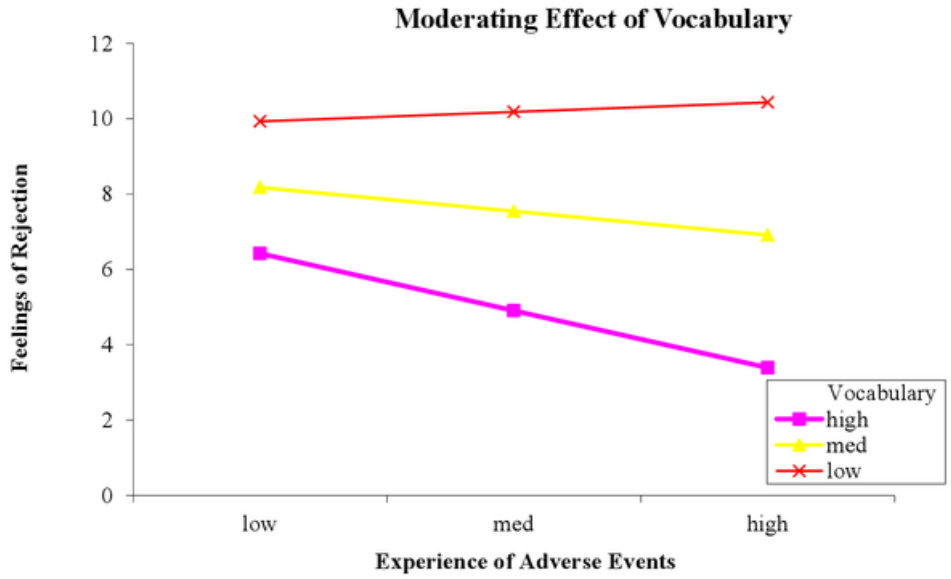

Figure 41. Moderating effect of vocabulary in predicting feelings of rejection among adolescents

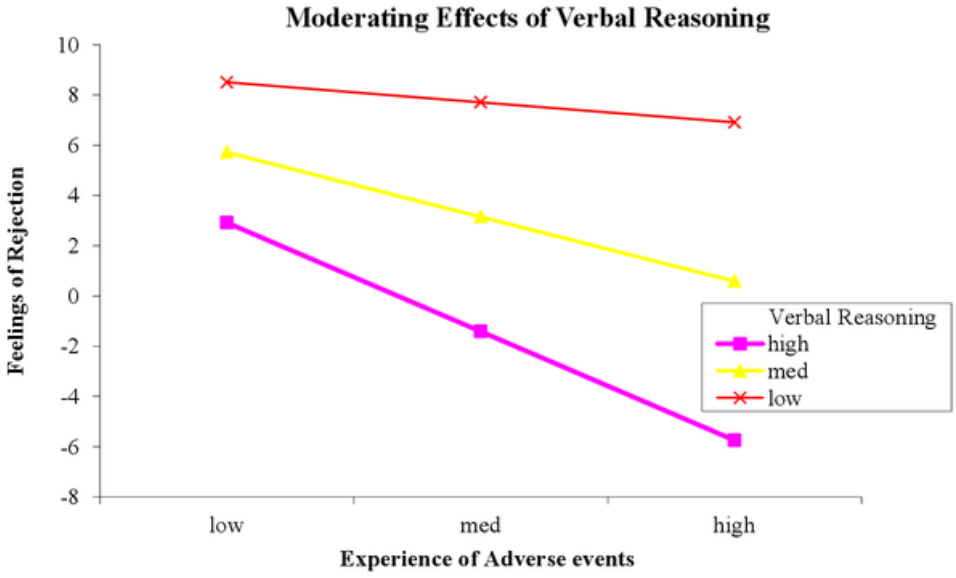

Figure 42. Moderating effect of verbal reasoning in predicting feelings of rejection among adolescents

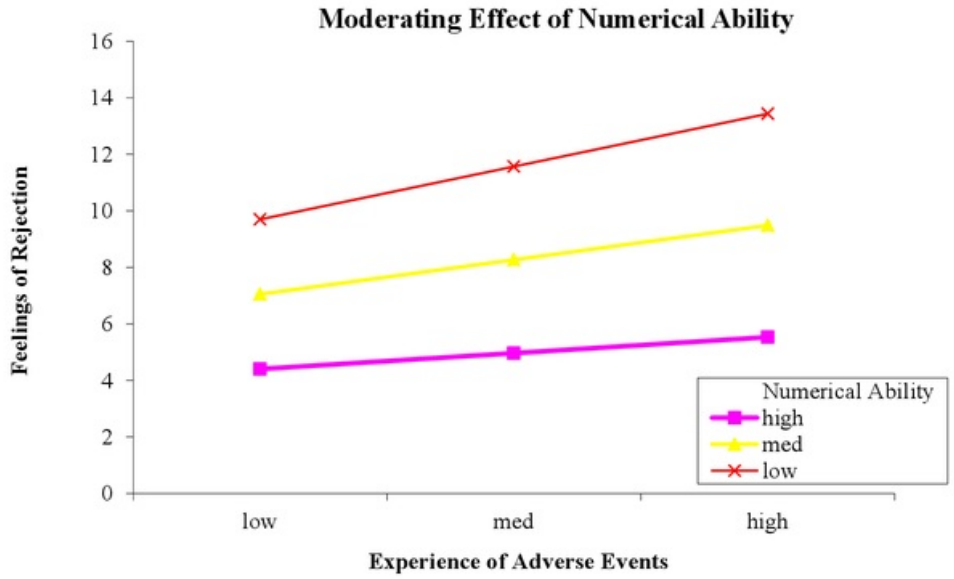

Figure 43. Moderating effect of numerical ability in predicting feelings of rejection among adolescents

Table 31 displays results for the moderating role of verbal cognitive abilities in the relationship between experience of adverse life events and feelings of rejection among adolescents. Model 1 of the table expresses the moderation effect of vocabulary. A significant interaction effect suggest that feelings of rejection significantly moderated (B = -.002, R^2 = .12, F (3, 659) = 49.19, p < .001) the impact of adverse life experiences on feelings of rejection while explaining 12% of variance. These results are further explicated through mod graph (Figure 41) which defines this moderation effect at high, medium and low levels of vocabulary. The pattern of the lines show that high and medium levels of vocabulary weakened the effect of adverse life experiences on feelings of rejection while low level of the ability boosted this effect.

Moderating role of verbal reasoning ability is manifested in model 2 of the table. Values of the model suggest a significant moderation effect (B = -.004, R^2 = .10, F (3, 659) = 37.73, p < .001) of verbal reasoning ability for the relation of adverse life experiences

and feelings of rejection along with accounting for 10% of variance. Figure 42 graphically explicate this moderation effect by suggesting that high and medium levels of verbal reasoning ability buffered the impact of adverse life experiences on feelings of rejection whereas low level of the ability was related to greater impact of adverse life experiences.

Model 3 of the table expresses the moderation effect of numerical ability. Values in the model suggest a strong interaction effect (B = -.002, R^2 = .12, F (3, 659) = 50.46, p < .001) of numerical ability and experience of adverse life events in explaining feelings of rejection among adolescents while explaining 12% of variance. A mod graph (Figure 43) further elaborates these results at different levels of numerical ability (i.e. high, medium and low). The graph depicts that medium and low levels of numerical abilities aggravated the effect of adverse life experiences on feelings of rejection among adolescents. However when the ability level was high, the impact of adverse life experiences on feelings of rejection was low.

Moderation effect of general knowledge is shown in model 4 which reveals that general knowledge ability did not accounted for a significant moderation effect (B = -.001, p = .208) in the relationship between experience of adverse life events and feelings of rejection among adolescents.

Table 32

Moderating effect of Self-Debasing Cognitive Errors on Anxiousness among Adolescents (N = 663)

Variable		Anxiousness				
		B	*SE B*	*t*	*P*	*95%CI*
Constant		24.02	.34	70.57	.000	[23.36, 24.69]
EALE		.07	.06	8.86	.000	[.052, .081]
CATA		.85	.008	14.39	.000	[.73, .96]
EALE × CATA		.004	.001	2.63	.009	[.006, .009]
R^2	.39					
F	141.41				.000	
Constant		23.88	.34	69.99	.000	[23.21, 24.56]
EALE		.082	.007	11.14	.000	[.07, .09]
PERS		.75	.056	13.49	.000	[.64, .86]
EALE × PERS		.004	.001	2.81	.005	[.006, .01]
R^2	.34					
F	108.31				.000	
Constant		24.09	.36	65.97	.000	[23.37, 24.81]
EALE		.07	.01	9.20	.000	[.06, .09]
SA		.73	.07	9.97	.000	[.59, .88]
EALE × SA		.009	.002	5.18	.000	[.013, .06]
R^2	.28					
F	98.74				.000	
Constant		24.10	.32	74.45	.000	[23.47, 24.74]
EALE		.06	.01	8.72	.000	[.05, .08]
OG		.86	.05	17.32	.000	[.76, .96]
EALE × OG		.005	.001	4.50	.000	[.007, .03]
R^2	.42					
F	180.54				.000	

p>.05=Non-significant, ***$p < .001$

Note: EALE = Experience of Adverse Life Event, CATA = Catastrophizing, PERS = Personalization, SA = Selective Abstraction, OG = Over Generalization

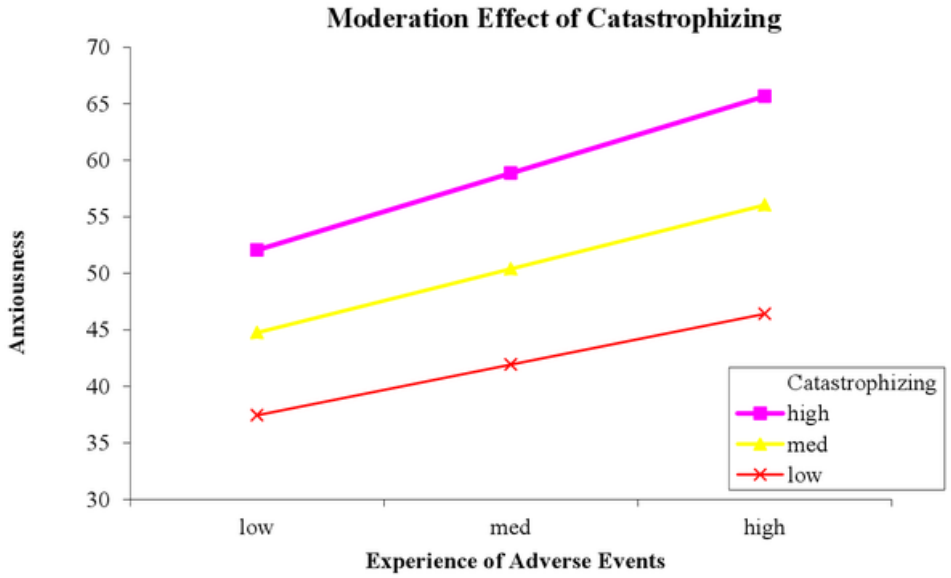

Figure 44. Moderating effect of catastrophizing in predicting anxiousness among adolescents

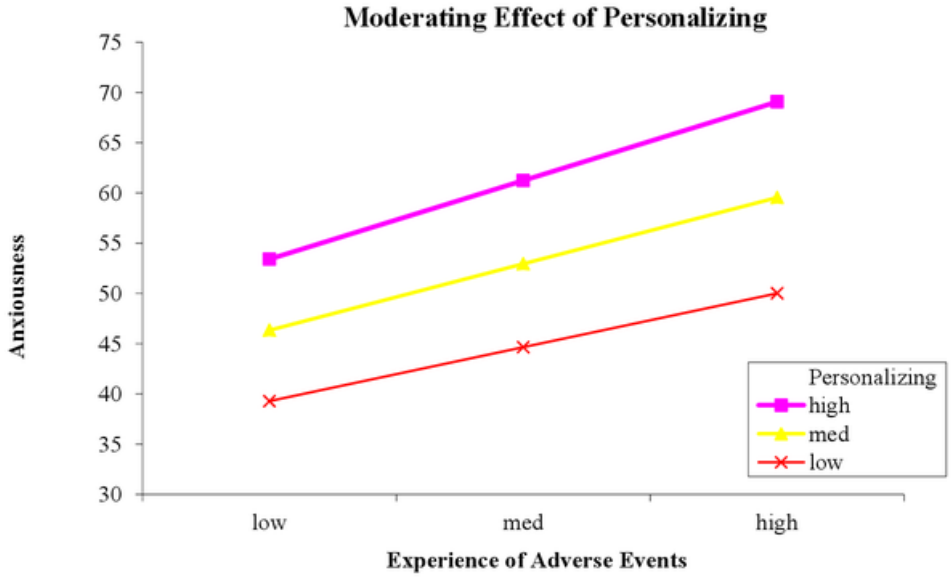

Figure 45. Moderating effect of personalizing in predicting anxiousness among adolescents

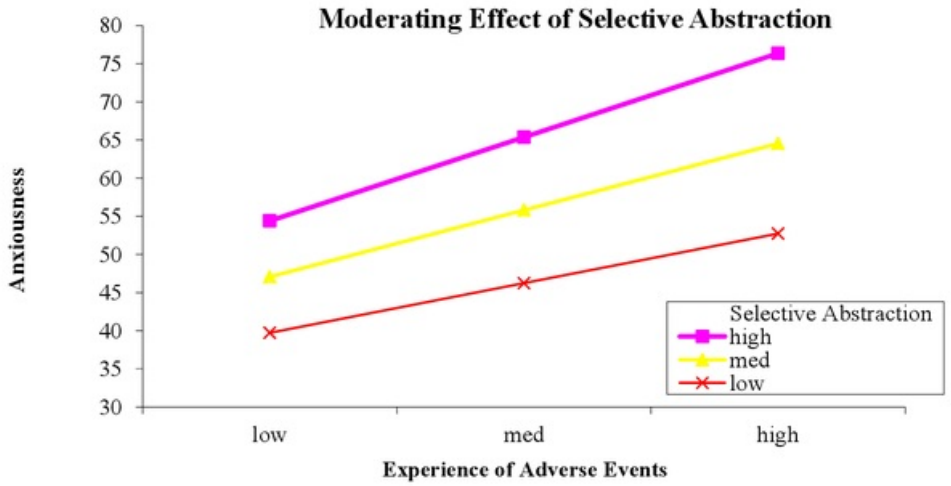

Figure 46. Moderating effect of selective abstraction in predicting anxiousness among adolescents

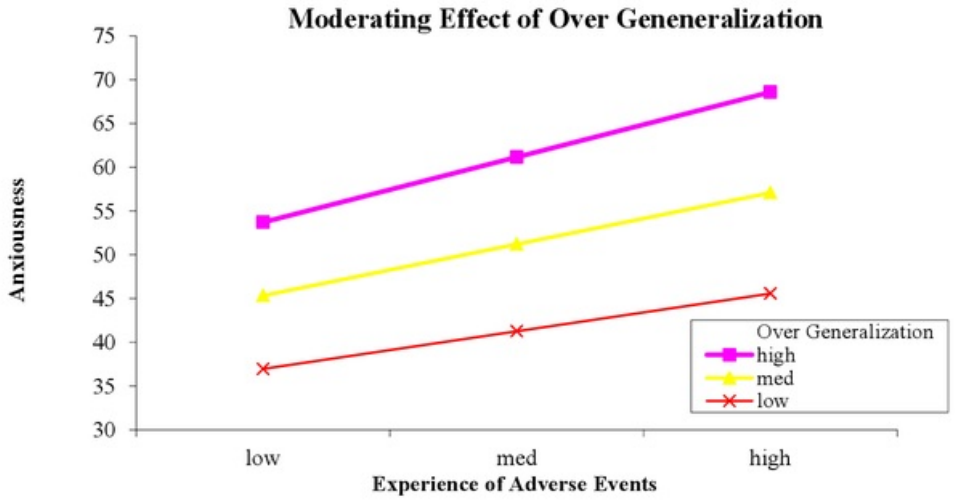

Figure 47. Moderating effect of over generalization in predicting anxiousness among adolescents

Table 32 displays results for the moderating role of self-debasing cognitive errors in relationship between experience of adverse life events and anxiousness among adolescents. Model 1 of the table expresses the moderating power of catastrophizing. Values indicate that catastrophizing significantly moderated (B = .004, R^2 = .39, F (3, 659) = 141.41, p <

.001) the impact of adverse life experiences on anxiousness with explaining 39% of variance. Interaction plot (Figure 44) explicates this moderation effect at high, medium and low levels of catastrophizing. Figure shows that catastrophizing exacerbated the effect of adverse life experiences on anxiousness among adolescents. As the level of catastrophizing increased the impact of adverse life experiences on anxiousness also intensified.

Model 2 of the table highlights the moderation effect of personalization. Interaction term revealed personalization a significant moderator (B = .004, t = 2.81, p < .01) with explaining 34% of variance (R^2 = .34, F (3, 659) = 108.31, p < .001) in anxiousness. Mod graph (Figure 45) further elaborated the findings by indicating that personalization intensified the effect of adverse life events on anxiousness. As the level of personalization rose it boosted the effect of adverse life experiences on anxiousness.

As far the moderating power of selective abstraction is concerned, results are given in model 3 of the table. Significant interaction effect (B = .009, t = 5.18, p < .001) reveals that personalization moderated the relationship between experience of adverse life events and anxiousness among adolescents by explaining 24% of variance (R^2 = .24, F (3, 659) = 98.74, p < .001). Results are further extended through interaction plot (Figure 46) which depicts that selective abstraction exacerbated the effect of experience of adverse life events on anxiousness among adolescents. Increase in selective abstraction boosted the relationship between the experience of adverse life events and anxiousness.

For over generalization interaction term suggests a significant moderation effect (B = .005, t = 4.50, p < .001) along with accounting for 42% of variance (R^2 = .42, F (3, 659) = 180.54, p < .001) in anxiousness. Interaction plot (Figure 47) further elaborates these findings by suggesting that over generalization aggravated the effect of adverse life experiences on anxiousness. Patterns of slopes suggest that as over generalization increased in level it intensified the impact of adverse life experiences on anxiousness.

Table 33

Moderating effect of Self-Debasing Cognitive Errors on Aggression among Adolescents (N = 663)

Variable		Aggression				
		B	*SE B*	*t*	*P*	*95%CI*
Constant		16.62	.27	61.76	.000	[16.09, 17.15]
EALE		.05	.006	8.94	.000	[.04, .07]
CATA		-.09	.04	-2.52	.012	[-.17, -.02]
EALE × CATA		-.006	.001	-6.69	.000	[-.01, -.004]
R^2	.14					
F	42.005				.000	
Constant		16.42	.26	63.11	.000	[15.90, 16.93]
EALE		.05	.006	8.81	.000	[.04, .06]
PERS		-.26	.04	-6.70	.000	[-33, -.18]
EALE × PERS		-.003	.001	-3.51	.000	[-.005, -.001]
R^2	.18					
F	50.09				.000	
Constant		16.55	.27	62.18	.000	[16. 02, 17.07]
EALE		.05	.01	9.06	.000	[.04, .07]
SA		-.17	.05	-3.61	.000	[-.27, -.08]
EALE × SA		-.006	.001	-5.34	.000	[-.01, -.004]
R^2	.15					
F	39.32					
Constant		16.64	.27	61.10	.000	[16.11, 17.16]
EALE		.05	.006	9.09	.003	[.04, .07]
OG		-.10	.035	-2.95	.000	[-17, -.03]
EALE × OG		-.005	.001	-6.85	.000	[-.007, -.004]
R^2	.15					
F	42.59				.000	

p>.05=Non-significant, ***$p < .001$

Note: Note: EALE = Experience of Adverse Life Event, CATA = Catastrophizing, PERS = Personalization, SA = Selective Abstraction, OG = Over Generalization

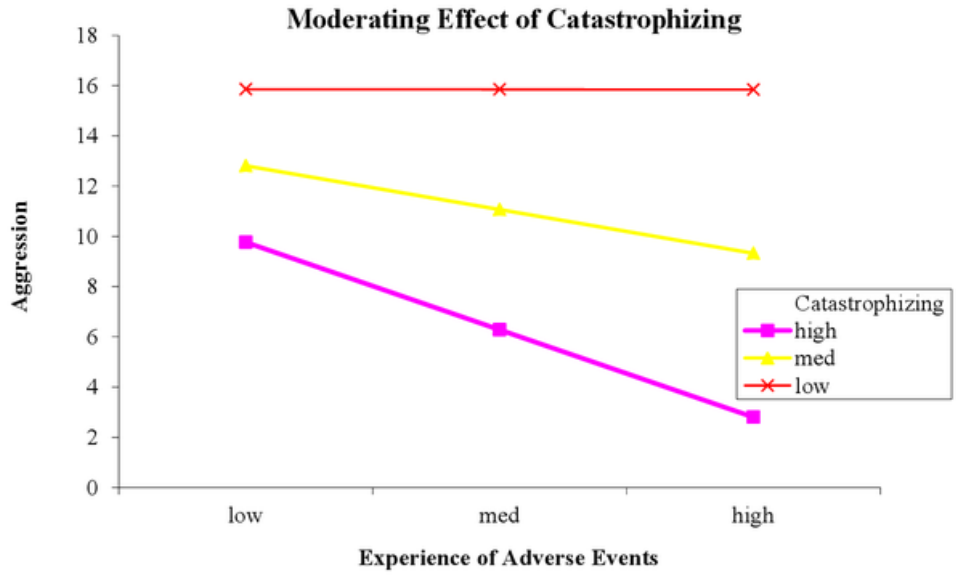

Figure 48. Moderating effect of catastrophizing in predicting aggression among adolescents

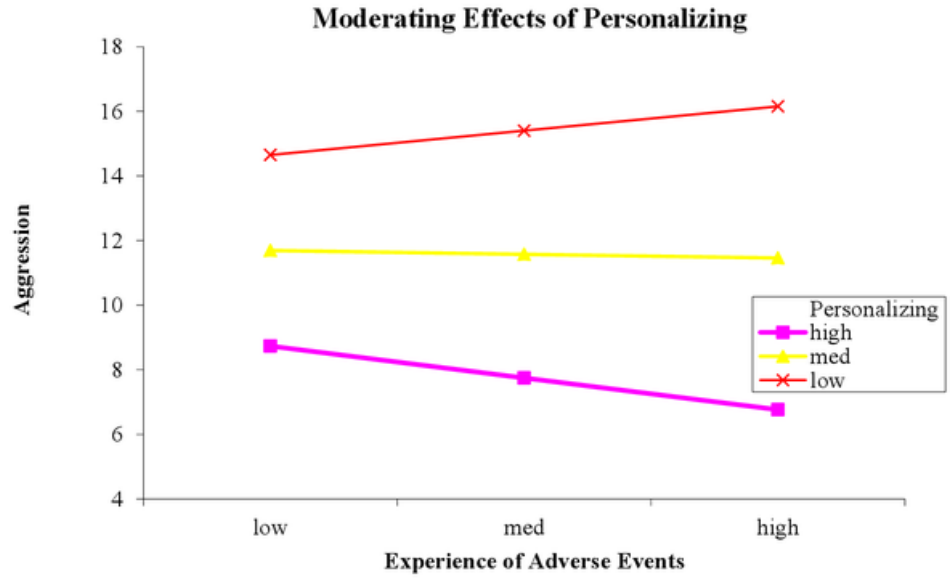

Figure 49. Moderating effect of personalizing in predicting aggression among adolescents

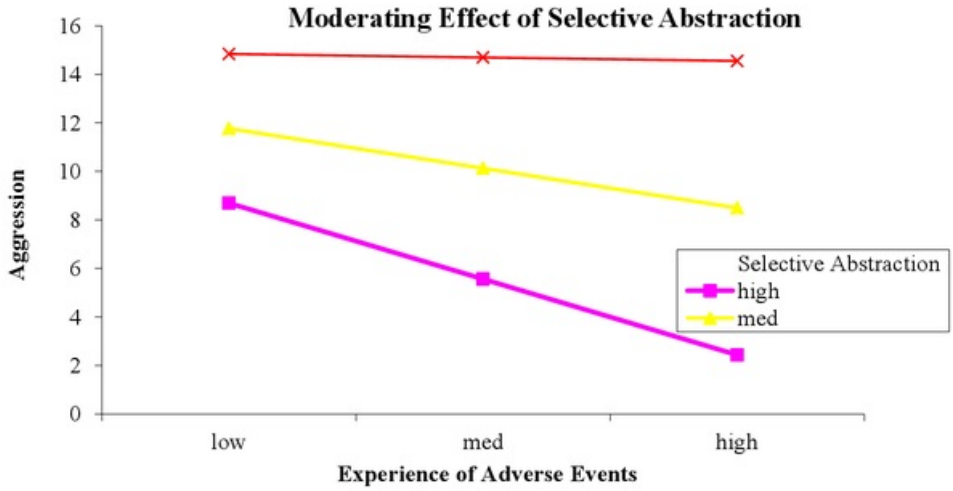

Figure 50. Moderating effect of selective abstraction in predicting aggression among adolescents

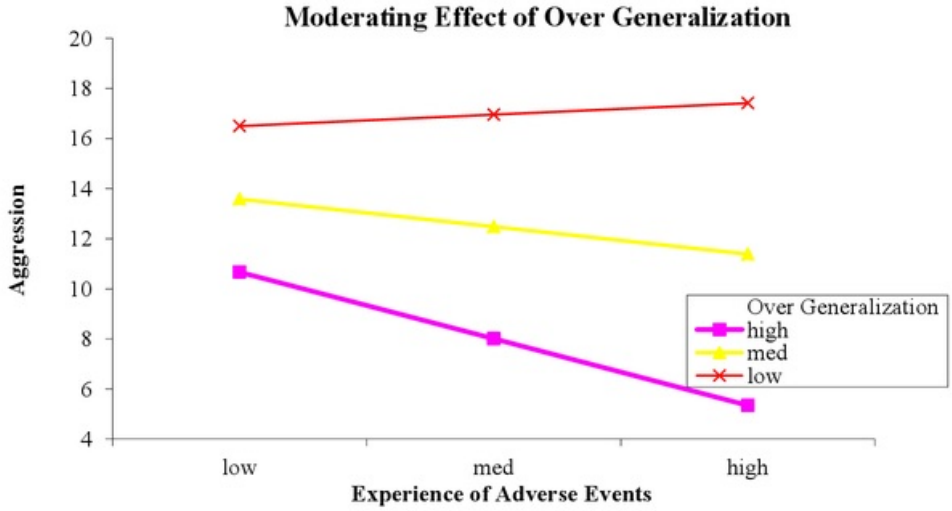

Figure 51. Moderating effect of over generalization in predicting aggression among adolescents

Table 33 demonstrates results for the moderating effect of self-debasing cognitive errors in relationship between experience of adverse life events and aggression among adolescents. Model 1 of the table reveals the moderation effect for catastrophizing. A significant interaction term (B = -.006, t = -6.69, $p < .001$) suggests that catastrophizing significantly moderated the relationship between experience of adverse life events and

aggression among adolescents and accounted for 14% of variance (R^2 = .14, F (3, 659) = 42.005, p < .001). These findings are further extended through graphical presentation (Figure 48) which depicts that medium and low level of catastrophizing minimized the impact of adverse life events on adolescents' aggressive behavior. However when this cognitive error was at low level it did not contributed a significant change in the relationship between experience of adverse life events and aggression.

For personalization, model 2 of the table reveals a significant interaction term (B = -.003, t = -3.51, p < .001) between personalization and experience of adverse life events which states personalization a significant moderator along with producing 18% of variance (R^2 = .18, F (3, 659) = 50.09, p < .001) in aggression among adolescents. Further elucidating these results, mod graph (Figure 49) shows that personalization buffered the impact of experience of adverse life events on aggressive behavior of adolescents. Patterns of slopes indicate that high level of personalization weakened the effect of adverse life experiences while low level of this cognitive error boosted this effect. However no visible change was observed when the catastrophizing was at medium level.

Selective abstraction, as the interaction term suggests (B = -.006, t = -5.34, p < .001), also emerged as a significant moderator and accounted for 15% of variance in aggression (R^2 = .15, F (3, 659) = 39.32, p < .001). Interaction plot (Figure 50) explicates these findings through slopes indicating that high and medium levels of selective abstraction decreased the effect of adverse life experience on aggressive behavior of adolescents. However, low level of this cognitive error did not contribute significant variance in the relationship.

Model 4 of the table displays the results for moderating effect of over generalization. Interaction term suggests (B = -.005, t = -6.85, p < .001) that over generalization significantly moderated the relationship between experience of adverse life

events and aggression among adolescents while explaining 15% of variance (R^2 = .15, F (3, 659) = 42.59, p < .001). Mod graph (Figure 51) makes these results evident by depicting that high and medium levels of over generalization minimized the impact of adverse life experiences on aggressive behavior of adolescents while low level of this cognitive error aggravated this effect.

Table 34

Moderating effect of Self-Debasing Cognitive Errors on Social Withdrawal among Adolescents (N = 663)

Variable		Social Withdrawal				
		B	*SE B*	*t*	*P*	*95%CI*
Constant		15.07	.19	81.13	.000	[14.70, 15.43]
EALE		.04	.03	8.81	.000	[.03, .04]
CATA		.40	.004	12.34	.000	[.34, .47]
EALE × CATA		.003	.001	3.32	.001	[.004, .01]
R^2	.34					
F	122.51				.000	
Constant		14.97	.19	79.71	.000	[14.60, 15.34]
EALE		.04	.004	10.92	.000	[.03, .05]
PERS		.35	.03	11.67	.000	[.29, .41]
EALE × PERS		.002	.001	3.32	.001	[.003, .009]
R^2	.29					
F	90.24				.000	
Constant		15.08	.19	76.49	.000	[14.69, 15.47]
EALE		.04	.004	9.31	.000	[.03, .05]
SA		.34	.04	8.69	.000	[.26, .41]
EALE × SA		.01	.001	5.42	.000	[.007, .03]
R^2	.24					
F	89.49				.000	
Constant		15.10	.18	83.45	.000	[14.74, 15.45]
EALE		.03	.004	8.79	.000	[.03, .04]
OG		.39	.03	14.30	.000	[.34, .45]
EALE × OG		.003	.001	4.58	.000	[.004, .01]
R^2	.36					
F	140.85				.000	

*p>.05= Non-significant, ***p* < .001

Note: Note: EALE = Experience of Adverse Life Event, CATA = Catastrophizing, PERS = Personalization, SA = Selective Abstraction, OG = Over Generalization

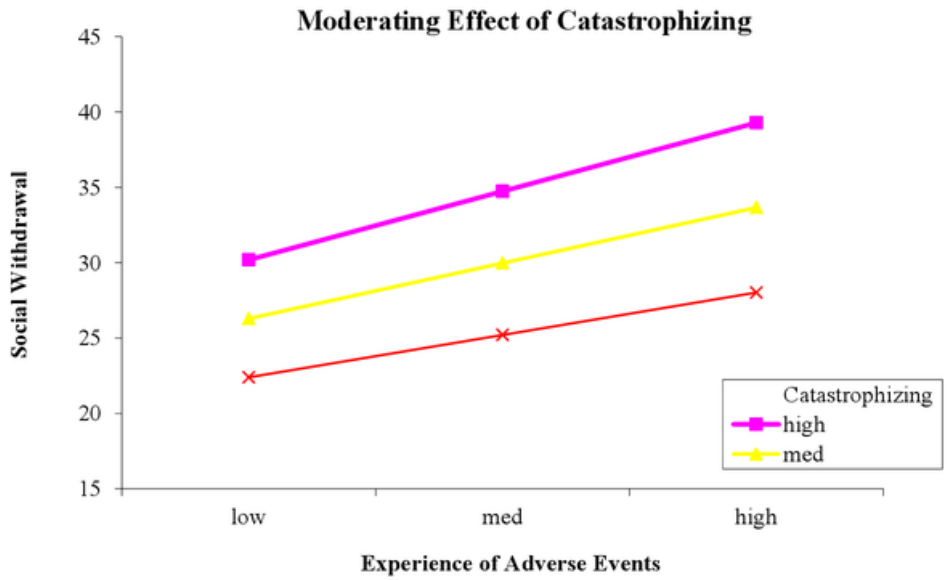

Figure 52. Moderating effect of catastrophizing in predicting social withdrawal among adolescents

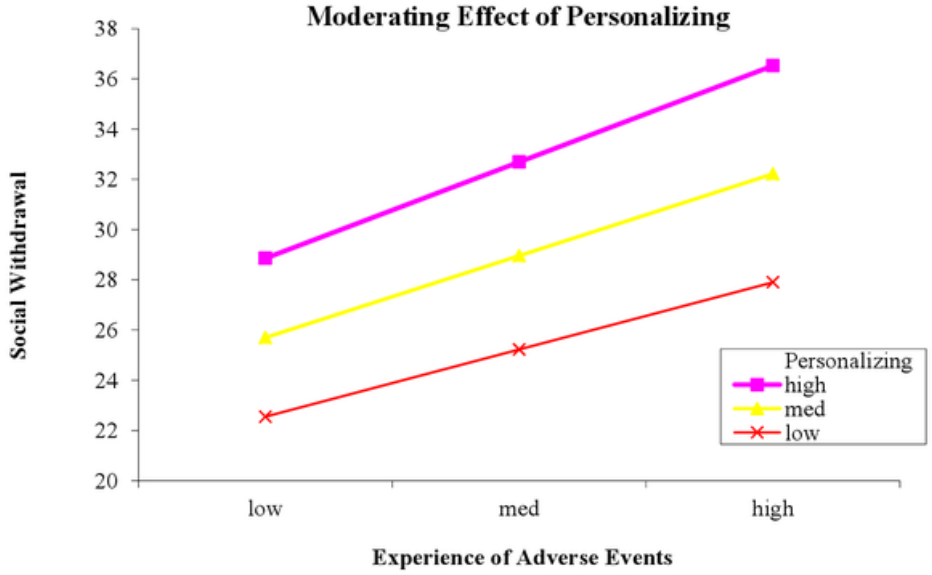

Figure 53. Moderating effect of personalizing in predicting aggression among adolescents

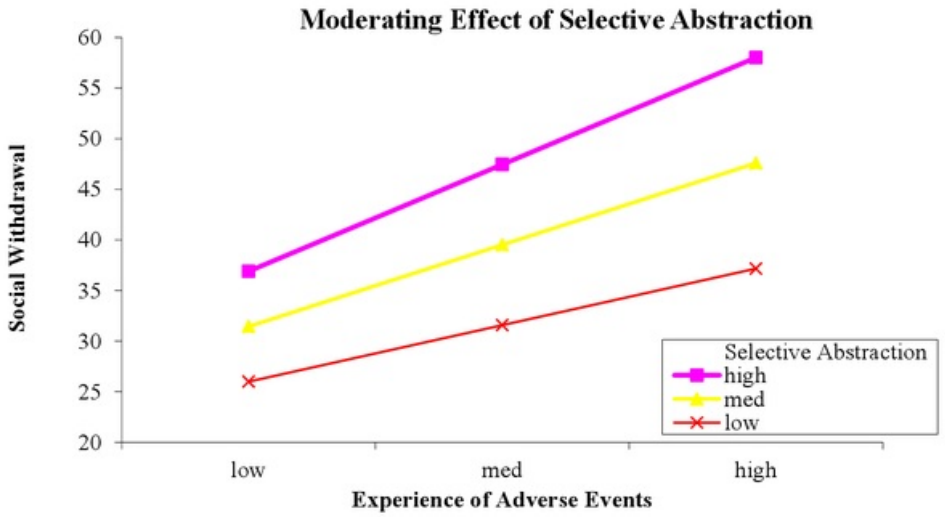

Figure 54. Moderating effect of selective abstraction in predicting aggression among adolescents

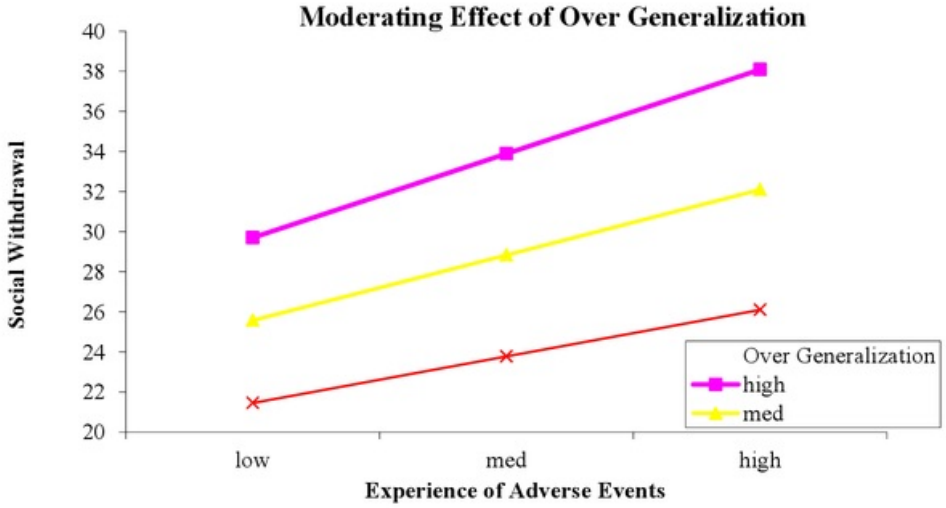

Figure 55. Moderating effect of over generalization in predicting aggression among adolescents

Results displayed in Table 34 reveal the moderating role of self-debasing cognitive errors in relationship between experience of adverse life events and social withdrawal among adolescents. Model 1 of the table shows moderating power of catastrophizing.

Significant interaction term shows (B = .003, t = 3.32, p < .01) that catastrophizing moderated the impact of adverse life experiences on social withdrawal and explained 34% of variance (R^2 = .34, F (3, 659) = 122.51, p < .001) in social withdrawal. Extending the results, interaction plot (Figure 52) illustrates that catastrophizing exacerbated the effect of adverse life experiences on social withdrawal. Slopes of the graph depict that as the level of catastrophizing increased the impact of adverse life experiences on social withdrawal also escalated.

Personalization, as the interaction term depicts, also served as a significant moderator (B = .002, t = 3.32, p < .01) with explaining 29% of variance (R^2 = .29, F (3, 659) = 90.24, p < .001) in social withdrawal. Making this moderation effect more obvious, mod graph (Figure 53) shows that personalization aggravated the effect of experience of adverse life events on social withdrawal among adolescents. Slopes of the graph illustrate that as the level of personalization increased the impact of adverse life experiences also stepped up.

Moderating effect of selective abstraction is presented in model 3 of the table. Findings reveal a significant interaction effect (B = .01, t = 5.42, p < .001) between experience of adverse life events and selective abstraction along with producing 24% of variance in social withdrawal (R^2 = .24, F (3, 659) = 89.49, p < .001). Mod graph (Figure 54) explicates the moderating power of selective abstraction through slopes which depict that selective abstraction boosted the effect of adverse life experiences on social withdrawal. Trend of the slopes suggests that increase in the level of selective abstraction intensified the impact of adverse life experiences on social withdrawal.

Model 4 of the table displays results for the moderating effect of over generalization. Values of the interaction term (B = .003, t = 4.58, p < .001) indicate that over generalization significantly moderated the effect of adverse life experiences on social

withdrawal. Results reveal 36% of variance explained (R^2 = .36, F (3, 659) = 140.85, p < .001) in social withdrawal by over generalization and experience of adverse life events collectively. Extending these results, mod graph (Figure 55) illustrates that over generalization escalated the effect of adverse life experiences on social withdrawal. Slopes of the graph indicate that increase in the level of over generalization multiplied the impact of adverse life experiences on social withdrawal.

Table 35

Moderating effect of Self-Debasing Cognitive Errors on Somatic Complaints among Adolescents (N = 663)

7					Somatic Complaints	
Variable		*B*	*SE B*	*t*	*p*	*95%CI*
Constant		7.77	.12	65.62	.000	[7.54, 8.007]
EALE		.02	.003	7.43	.000	[.02, .03]
CATA		.24	.02	12.82	.000	[.19, .27]
EALE × CATA		.001	.0005	1.37	.169	[-.002, .0003]
R^2	.29					
F	97.99				.000	
Constant		7.75	.12	66.56	.000	[7.52, 7.98]
EALE		.03	.003	9.62	.000	[.02, .03]
PERS		.22	.02	12.51	.000	[.18, .25]
EALE × PERS		.0003	.0004	.77	.444	[-.001, .0005]
R^2	.28					
F	87.34				.000	
Constant		7.79	.12	63.29	.000	[7.55, 8.03]
EALE		.02	.003	7.91	.000	[.02, .03]
SA		.22	.02	9.11	.000	[.17, .28]
EALE × SA		.002	.001	3.05	.002	[.003, .006]
R^2	.23					
F	67.85				.000	
Constant		7.78	.11	69.66	.000	[7.56, 7.99]
EALE		.02	.003	7.50	.000	[.01, .02]
OG		.25	.01	15.83	.000	[.22, .28]
EALE × OG		.0007	.0004	1.88	.061	[-.001, .001]
R^2	.35					
F	124. 75				.000	

p>.05= Non-significant, ***p* < .001

Note: Note: EALE = Experience of Adverse Life Event, CATA = Catastrophizing, PERS = Personalization, SA = Selective Abstraction, OG = Over Generalization

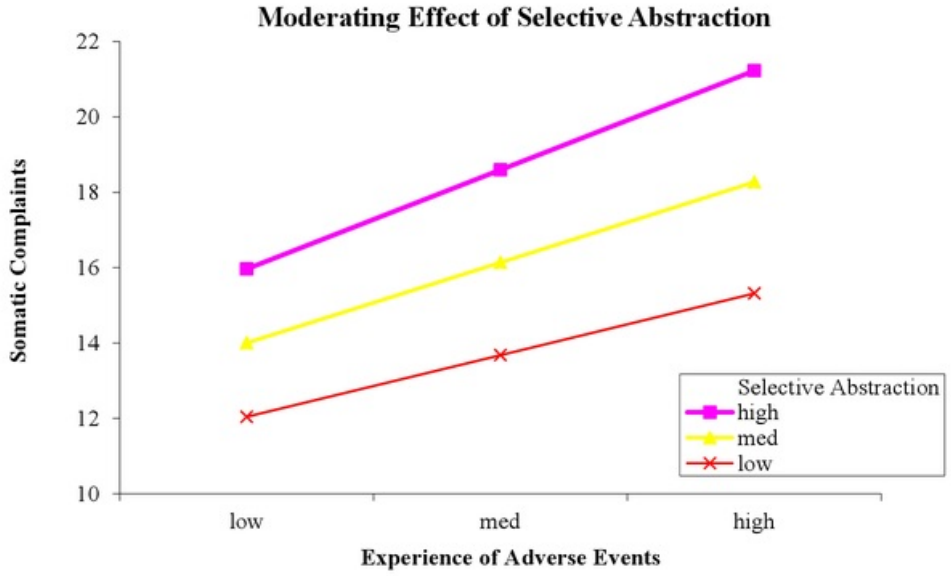

Figure 56. Moderating effect of selective abstraction in predicting somatic complaints among adolescents

Table 35 shows results for moderating role of self-debasing cognitive errors in relationship between experience of adverse life events and somatic complaints among adolescents. Values of the table reveal that only selective abstraction showed a significant moderation effect (B = .002, t = 3.05, p < .01) with explaining 23% of variance (R^2 = .23, F (3, 659) = 67.85, p < .001) in somatic complaints. Interaction plot (Figure 56) explicates this moderation effect at high, medium and low levels of selective abstraction. Slopes of the graph suggest that selective abstraction exacerbated the effect of adverse life experiences on somatic complaints among adolescents. As the level of selective abstraction increased the impact of adverse life experiences on somatic complaints also intensified. However, all other self-debasing cognitive error, including the composite model, did not account for statistically significant moderation (p > .05) in the model.

Table 36

Moderating effect of Self-Debasing Cognitive Errors on Academic Problems among Adolescents (N = 663)

Variable		Academic Problems				
		B	*SE B*	*t*	*P*	*95%CI*
Constant		17.67	.28	62.85	.000	[17.12, 18.23]
EALE		.05	.006	7.67	.000	[.03, .06]
CATA		.41	.05	9.07	.000	[.32, .50]
EALE × CATA		.003	.001	2.81	.005	[.005, .009]
R^2	.21					
F	66.19				.000	
Constant		17.56	.29	60.98	.000	[16.99, 18.13]
EALE		.05	.05	8.87	.000	[.04, .06]
PERS		.25	.006	4.99	.000	[.15, .35]
EALE × PERS		.003	.001	2.76	.006	[.005, .009]
R^2	.13					
F	34.89				.000	
Constant		17.69	.29	60.77	.000	[17.12, 18.26]
EALE		.05	.006	4.42	.000	[.04, .06]
SA		.26	.06	8.25	.000	[.14, .37]
EALE × SA		.006	.001	4.15	.000	[.003, .008]
R^2	.14					
F	39.14				.000	
Constant		17.72	.27	64.75	.000	[17.19, 18.26]
EALE		.04	.006	7.53	.000	[.03, .06]
OG		.43	.04	11.30	.000	[.36, .50]
EALE × OG		.004	.001	4.53	.000	[.002, .006]
R^2	.24					
F	85.97				.000	

p>.05=Non-significant, ***$p < .001$

Note: Note: EALE = Experience of Adverse Life Event, CATA = Catastrophizing, PERS = Personalization, SA = Selective Abstraction, OG = Over Generalization

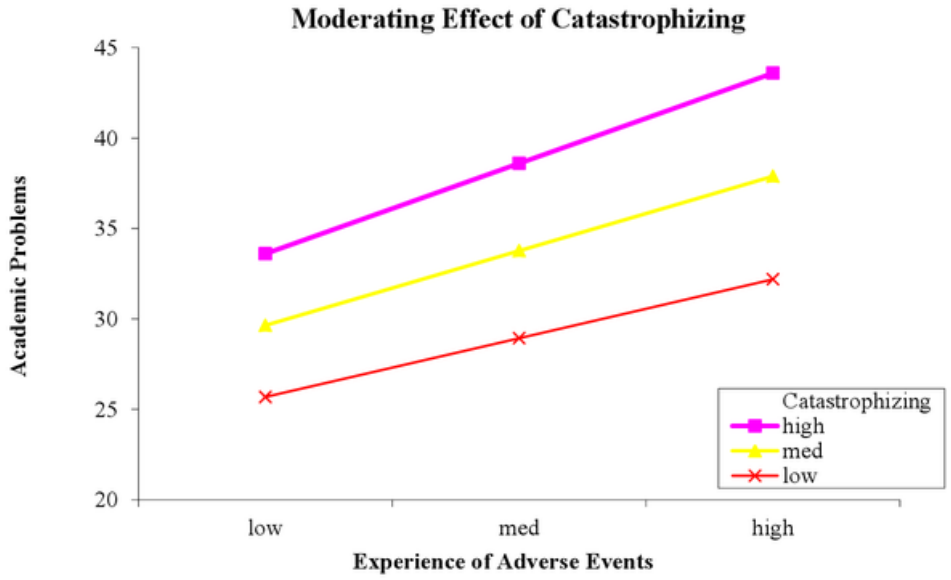

Figure 57. Moderating effect of catastrophizing in predicting academic problems among adolescents

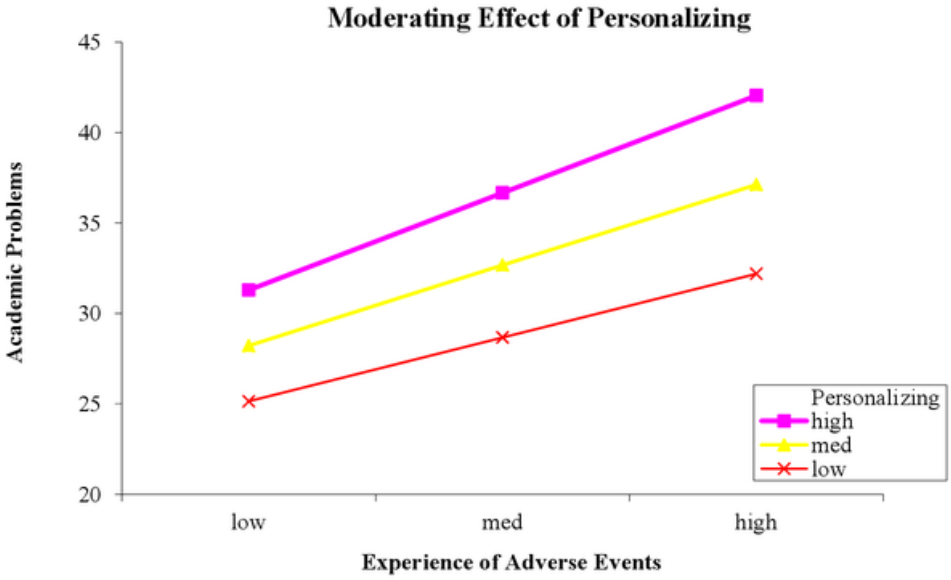

Figure 58. Moderating effect of personalizing in predicting academic problems among adolescents

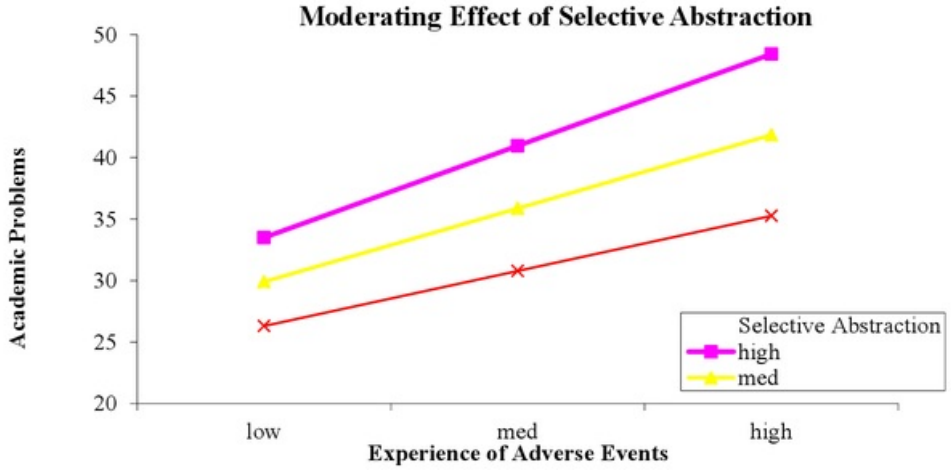

Figure 59. Moderating effect of selective abstraction in predicting academic problems among adolescents

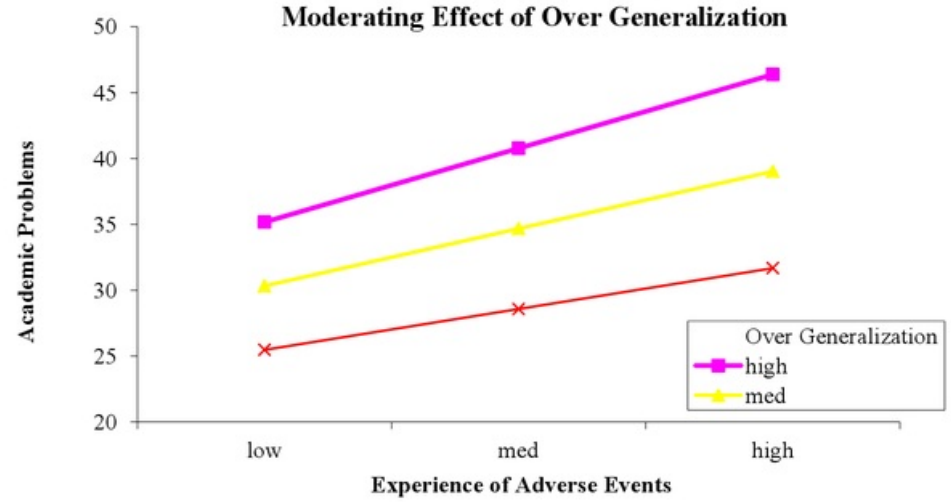

Figure 60. Moderating effect of catastrophizing in predicting academic problems among adolescents

Table 36 displays results for the moderating role of self-debasing cognitive errors in relationship between experience of adverse life events and academic problems among adolescents. Model 1 of the table expresses the moderating power of catastrophizing.

Values indicate that catastrophizing significantly moderated (B = .003, t = 2.81, p < .01) the impact of adverse life experiences on academic problems with explaining 21% of variance (R^2 = .21, F (3, 659) = 66.19, p < .001). Interaction plot (Figure 57) explicates this moderation effect at high, medium and low levels of catastrophizing. Figure shows that catastrophizing exacerbated the effect of adverse life experiences on academic problems among adolescents. As the level of catastrophizing increased the impact of adverse life experiences on academic problems got intensified.

Personalization, as the interaction term depicts, also served as a significant moderator (B = .003, t = 2.76, p < .01) with explaining 13% of variance (R^2 = .13, F (3, 659) = 34.89, p < .001) in academic problems. Making this moderation effect evident, mod graph (Figure 58) shows that personalization aggravated the effect of adverse life events on academic problems among adolescents. Slopes of the graph illustrate that as the level of personalization increased the impact of adverse life experiences also stepped up.

As far the moderating power of selective abstraction is concerned, results are given in model 3 of the table. Significant interaction effect (B = .006, t = 4.15, p < .001) reveals that personalization moderated the relationship between experience of adverse life events and academic problems among adolescents by explaining 14% of variance (R^2 = .14, F (3, 659) = 39.14, p < .001). Results are further extended through interaction plot (Figure 59) which depicts that selective abstraction exacerbated the effect of experience of adverse life events on academic problems among adolescents. Increase in selective abstraction boosted the relationship between the experience of adverse life events and academic problems.

Model 4 of the table displays results for the moderating effect of over generalization. Values of the interaction term (B = .004, t = 4.53, p < .001) indicate that over generalization significantly moderated the effect of adverse life experiences on academic problems. Results reveal 36% of variance explained (R^2 = .24, F (3, 659) = 85.97,

$p < .001$) in academic problems by over generalization and experience of adverse life events collectively. Extending these results, mod graph (Figure 60) illustrates that over generalization escalated the effect of adverse life experiences on academic problems. Slopes of the graph indicate that increase in the level of over generalization multiplied the impact of adverse life experiences on academic problems.

Table 37

Moderating effect of Self-Debasing Cognitive Errors on Feelings of Rejection among Adolescents (N = 663)

Variable		Feelings of Rejection				
		B	*SE B*	*t*	*P*	*95%CI*
Constant		9.55	16	58.88	.000	[9.24, 9.87]
EALE		.03	.004	7.71	.000	[.02, .03]
CATA		.36	.03	12.84	.000	[.30, .41]
EALE × CATA		.001	.0007	1.75	.040	[.001, .003]
R^2	.33					
F	116.78				.000	
Constant		9.50	.17	57.27	.000	[9.18, 9.83]
EALE		.03	.004	9.42	.000	[.03, .04]
PERS		.28	.03	9.84	.000	[. 22, .33]
EALE × PERS		.002	.0007	2.73	.006	[.0005, .003]
R^2	.25					
F	67.06				.000	
Constant		9.59	.17	54.89	.000	[9.26, 9.94]
EALE		.03	.004	8.26	.000	[.02, .04]
SA		.26	.03	7.37	.000	[.19, .32]
EALE × SA		.004	.001	4.77	.000	[.002, .006]
R^2	.20					
F	71.58				.000	
Constant		9.60	.16	59.94	.000	[9.29, 9.91]
EALE		.03	.004	7.45	.000	[.02, .03]
OG		.34	.03	14.03	.000	[.29, .38]
EALE × OG		.002	.001	3.72	.000	[.001, .003]
R^2	.34					
F	133.10				.000	

*p>.05= Non-significant, ***p* < .001

Note: Note: EALE = Experience of Adverse Life Event, CATA = Catastrophizing, PERS = Personalization, SA = Selective Abstraction, OG = Over Generalization

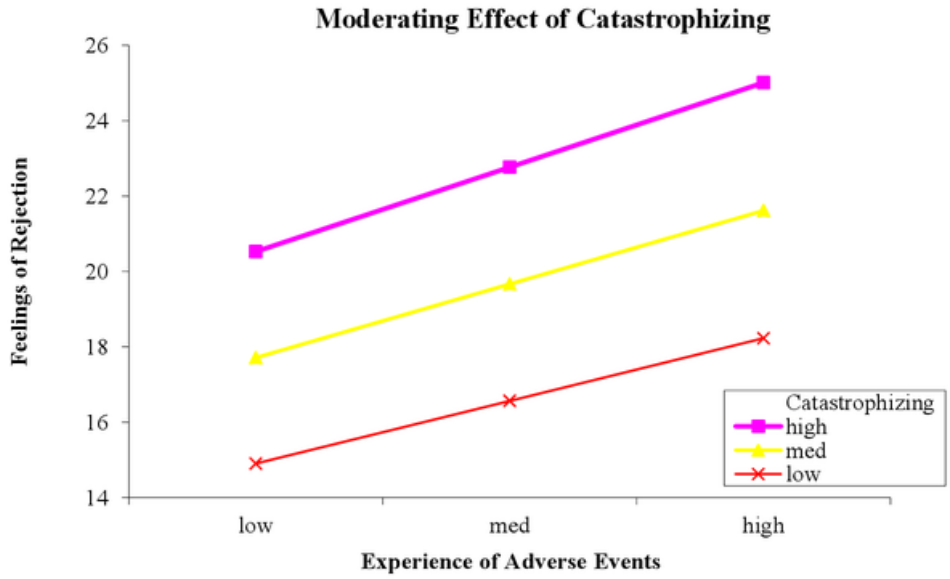

Figure 61. Moderating effect of catastrophizing in predicting feelings of rejection among adolescents

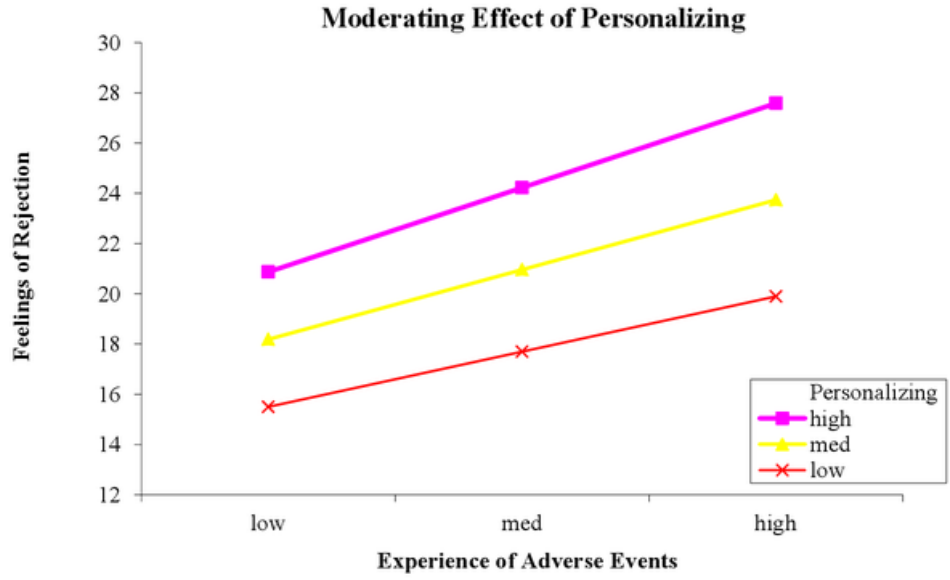

Figure 62. Moderating effect of personalizing in predicting feelings of rejection among adolescents

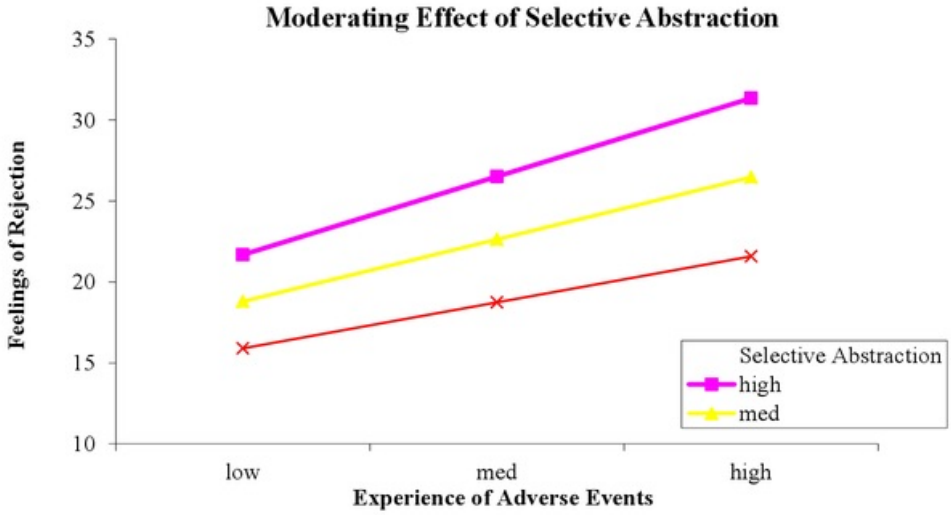

Figure 63. Moderating effect of selective abstraction in predicting feelings of rejection among adolescents

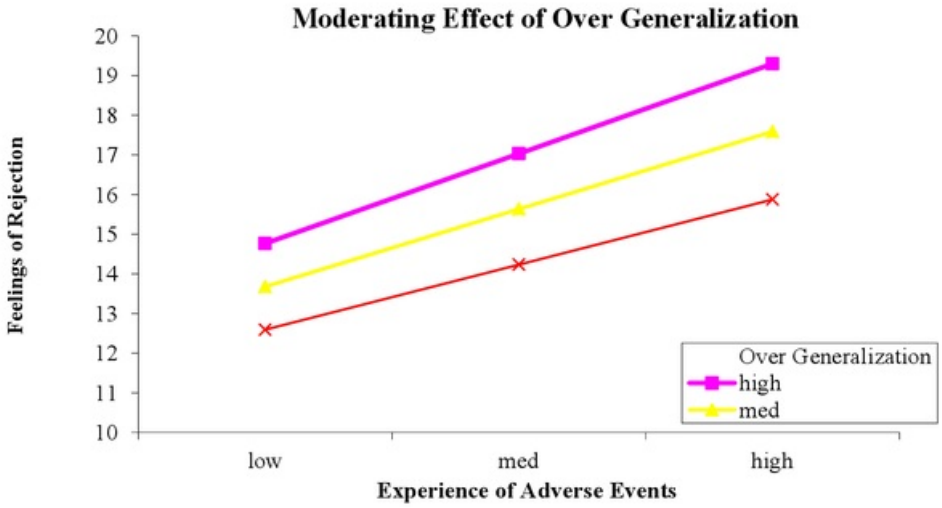

Figure 64. Moderating effect of over generalization in predicting feelings of rejection among adolescents

Results displayed in Table 37 reveal the moderating role of self-debasing cognitive errors in relationship between experience of adverse life events and feelings of rejection among adolescents. Model 1 of the table shows moderating power of catastrophizing.

Significant interaction term shows (B = .001, t = 1.75, p < .05) that catastrophizing moderated the impact of adverse life experiences explained 33% of variance (R^2 = .33, F (3, 659) = 116.78, p < .001) in feelings of rejection. Extending the results, interaction plot (Figure 61) illustrates that catastrophizing exacerbated the effect of adverse life experiences on feelings of rejection. Slopes of the graph depict that as the level of catastrophizing increased the impact of adverse life experiences on feelings of rejection also escalated.

Model 2 of the table highlights the moderation effect of personalization. Interaction term revealed personalization a significant moderator (B = .002, t = 2.73, p < .01) with explaining 25% of variance (R^2 = .25, F (3, 659) = 67.06, p < .001) in feelings of rejection. Mod graph (Figure 62) further elaborated the findings by indicating that personalization intensified the effect of experience of adverse life events on feelings of rejection. As the level of personalization rose it boosted the effect of adverse life experiences on feelings of rejection.

Moderating effect of selective abstraction is presented in model 3 of the table. Findings reveal a significant interaction effect (B = .004, t = 4.77, p < .001) between experience of adverse life events and selective abstraction along with producing 20% of variance in feelings of rejection (R^2 = .20, F (3, 659) = 71.58, p < .001). Mod graph (Figure 63) explicates the moderating power of selective abstraction through slopes which depict that selective abstraction boosted the effect of adverse life experiences on feelings of rejection. Trend of the slopes suggests that increase in the level of selective abstraction intensified the impact of adverse life experiences on feelings of rejection.

For over generalization interaction term suggests a significant moderation effect (B = .002, t = 3.72, p < .001) along with accounting for 34% of variance (R^2 = .34, F (3, 659) = 133.10, p < .001) in feelings of rejection. Interaction plot (Figure 64) further elaborates

these findings by suggesting that over generalization aggravated the effect of adverse life experiences on feelings of rejection. Patterns of slopes suggest that as over generalization increased in level it intensified the impact of adverse life experiences on feelings of rejection.

Table 38

Moderating effect of Self-Serving Cognitive Errors on Anxiousness among Adolescents (N = 663)

Variable		Anxiety				
		B	*SE B*	*t*	*P*	*95%CI*
Constant		24.08	.36	66.41	.000	[23.37, 24.79]
EALE		.10	.008	13.26	.000	[.09, .12]
SC		-.67	.07	-9.53	.000	[-.08, -.53]
EALE × SC		-.003	.002	-2.07	.038	[-.01, -.0002]
R^2	.25					
F	92.86				.000	
Constant		24.07	.37	65.29	.000	[23.34, 24.79]
EALE		.09	.01	12.25	.000	[.08, .11]
BO		-.42	.04	-9.48	.000	[-.50, -.33]
EALE × BO		-.003	.001	-3.42	.001	[-.01, -.001]
R^2	.23					
F	86.78				.000	
Constant		23.90	.42	57.59	.000	[23.09, 24.72]
EALE		.08	.01	9.35	.982	[.06, .09]
ML		-.003	.11	-.02	.000	[-22, .21]
EALE × ML		.0001	.002	.04	.964	[-.005, .005]
R^2	.12					
F	34.31				.000	
Constant		24.15	.38	63.91	.000	[23.41, 24.89]
EALE		.09	.01	11.12	.000	[.07, .10]
AW		-.55	.08	-6.61	.000	[-.71, -.38]
EALE × AW		-.01	.002	-5.29	.000	[-.01, -.006]
R^2	.19					
ΔR^2						
F	65.92				.000	

*p>.05=Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, SC = Self-Centeredness, BO = Blaming Others, ML = Mislabeling, AW = Assuming the Worst

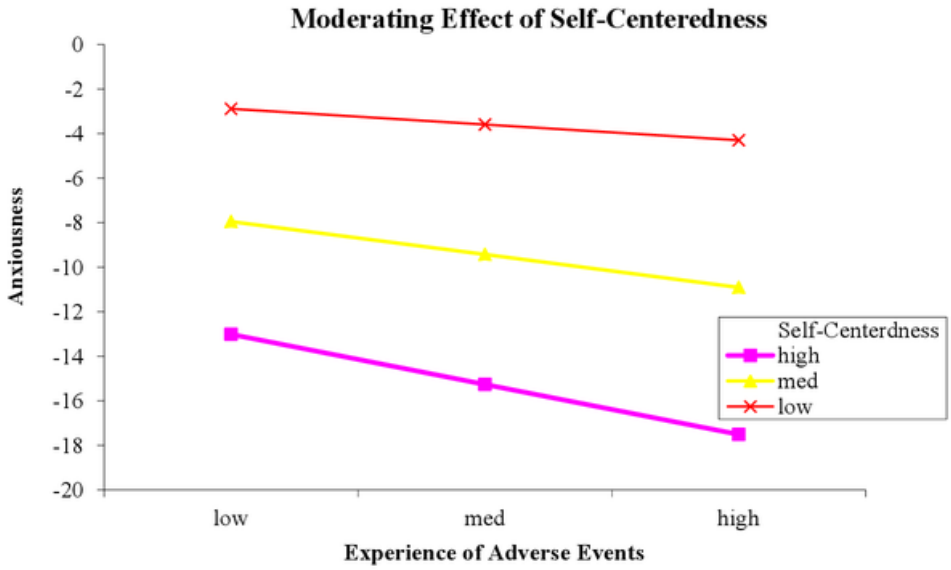

Figure 65. Moderating effect of self-centeredness in predicting anxiousness among adolescents

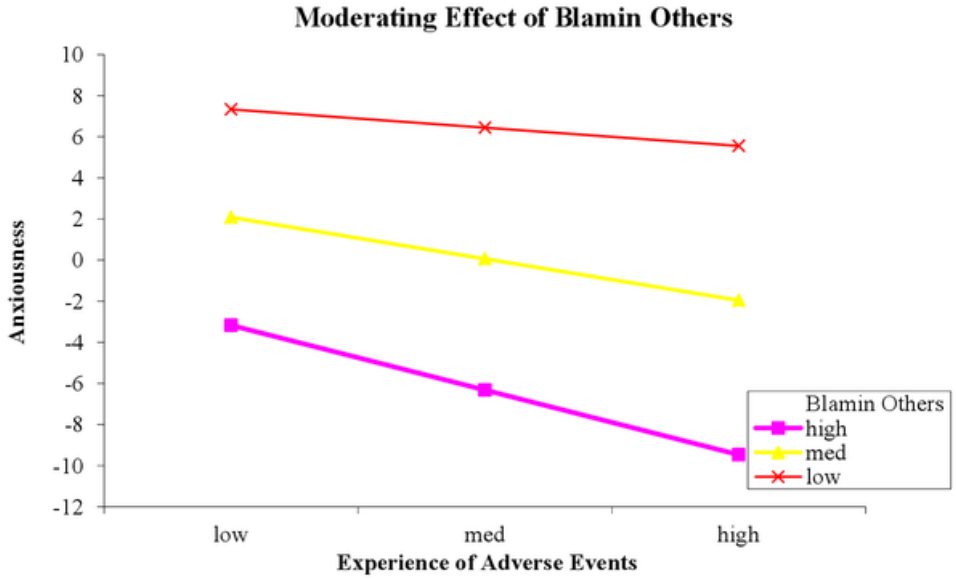

Figure 66. Moderating effect of blaming others in predicting anxiousness among adolescents

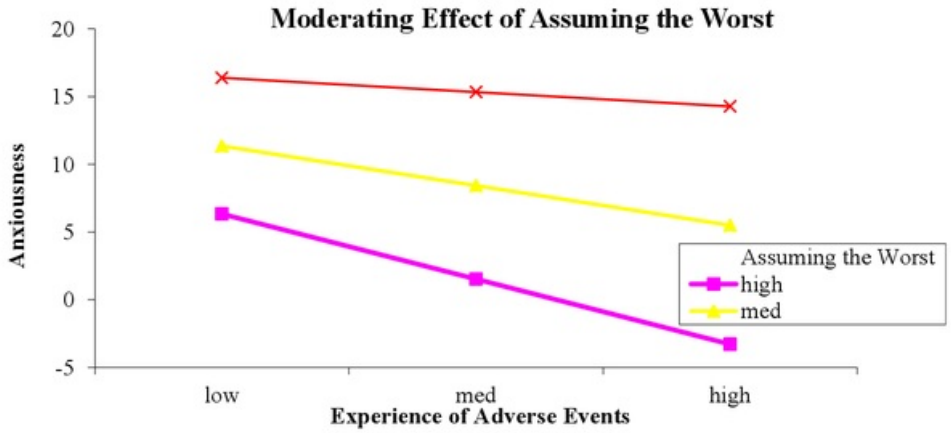

Figure 67. Moderating effect of blaming others in predicting anxiousness among adolescents

Table 38 displays results for moderating role of self-serving cognitive errors in relationship between experience of adverse life events and anxiousness among adolescents. Model 1 of the table highlights the moderation effect of self-centeredness. Values of interaction term suggest self-centeredness a significant moderator (B = -.003, t = -2.07, $p < .05$) with contributing 25% of variance ($R^2 = .25$, F (3, 659) = 92.86, $p < .001$) in anxiousness. A graphical presentation (Figure 65) illustrates these results and reveals that self-centeredness buffered the relationship between experience of adverse life events and anxiousness among adolescents. Slopes of the plot indicate that increase in the level of self-centeredness minimized the effect of adverse life experiences.

Moderation effect of blaming others is presented in model 2 of the table. Values reveal that blaming others significantly moderated (B = -.003, t = -3.42, $p < .01$) the relationship between experience of adverse life events and anxiousness along with accounting for 23% of variance ($R^2 = .23$, F (3, 659) = 86.78, $p < .001$) in anxiousness. Mod graph (Figure 66) further elaborates the findings by suggesting that blaming others weakened the effect of adverse life experiences on anxiousness. Sloped in the graph depict that as the level of blaming others raised, it alleviated the effect of adverse life experiences.

Model 3 shows results for moderating role of mislabeling. Values of interaction term suggest that mislabeling did account for significant moderation ($p > .05$) in the model. For assuming the worst, model 4 shows a significant interaction effect ($B = -.01$, $t = -5.29$, $p < .001$) along with contributing 19% of variance ($R^2 = .19$, $F(3, 659) = 65.92$, $p < .001$) in anxiousness. Making these findings more obvious, mod graph (Figure 67) shows that assuming the worst buffered the relationship between experience of adverse life events and anxiousness among adolescents. Slopes of the plot suggest that as the level of assuming the worst increased, it palliated the effect of adverse life experiences.

Table 39

Moderating effect of Self-Serving Cognitive Errors on Aggression among Adolescents (N = 663)

					Aggression	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		22.97	.20	113.56	.000	[22.58, 23.37]
EALE		.03	.004	6.67	.000	[.02, .04]
SC		.35	.04	9.57	.000	[.28, .42]
EALE × SC		.002	.001	2.01	.041	[.000, .003]
R^2	.23					
F	72.14				.000	
Constant		22.99	.20	113.05	.000	[22.59, 23.39]
EALE		.03	.005	7.69	.000	[.03, .04]
BO		.19	.02	7.82	.000	[.14, .24]
EALE × BO		.001	.001	2.33	.019	[.0002, .002]
R^2	.19					
F	48.72				.000	
Constant		22.97	.19	116.81	.000	[22.58, 23.36]
EALE		.03	.004	6.88	.000	[.02, .04]
ML		.53	.05	10.89	.000	[.44, .63]
EALE × ML		.003	.001	2.80	.005	[.001, .005]
R^2	.25					
F	105.16				.000	
Constant		23.15	.21	110.31	.000	[22.73, 23.56]
EALE		.03	.005	6.96	.000	[.02, .04]
AW		.40	.06	7.19	.000	[.29, .51]
EALE × AW		.003	.002	2.20	.027	[.0004, .006]
R^2	.19					
F	55.20				.000	

p>.05=Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, SC = Self-Centeredness, BO = Blaming Others, ML = Mislabeling, AW = Assuming the Worst

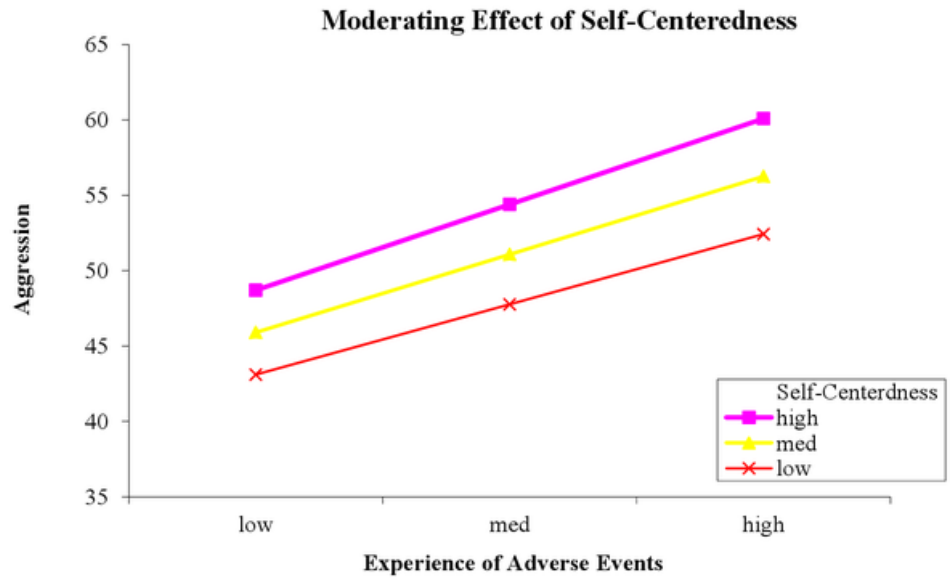

Figure 68. Moderating effect of self-centeredness in predicting aggression among adolescents

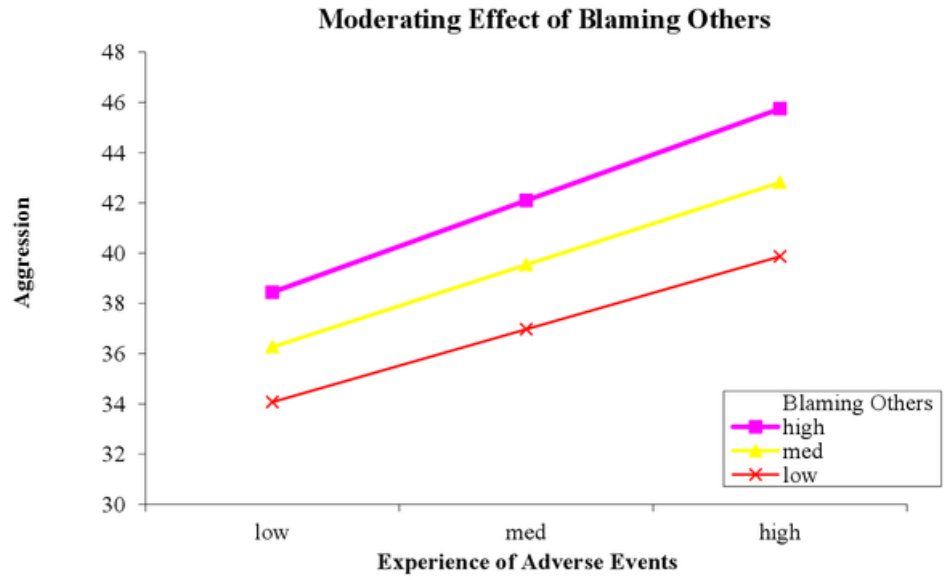

Figure 69. Moderating effect of blaming others in predicting aggression among adolescents

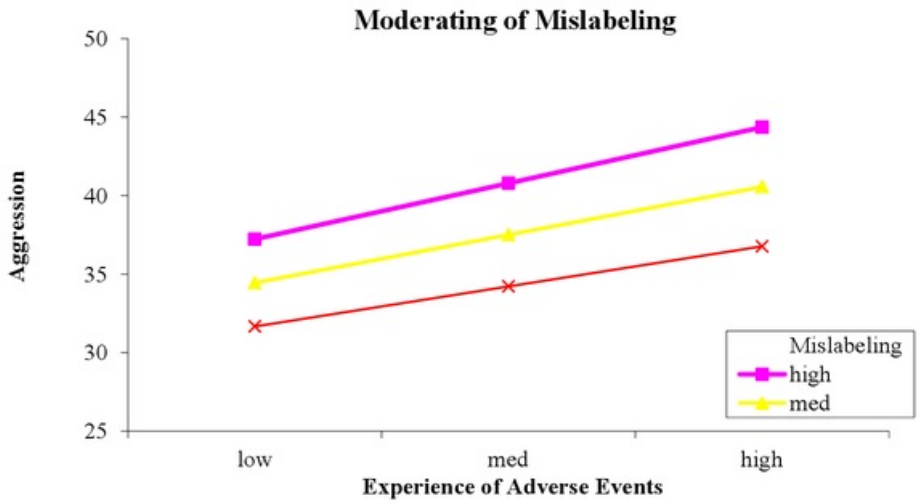

Figure 70. Moderating effect of mislabeling in predicting aggression among adolescents

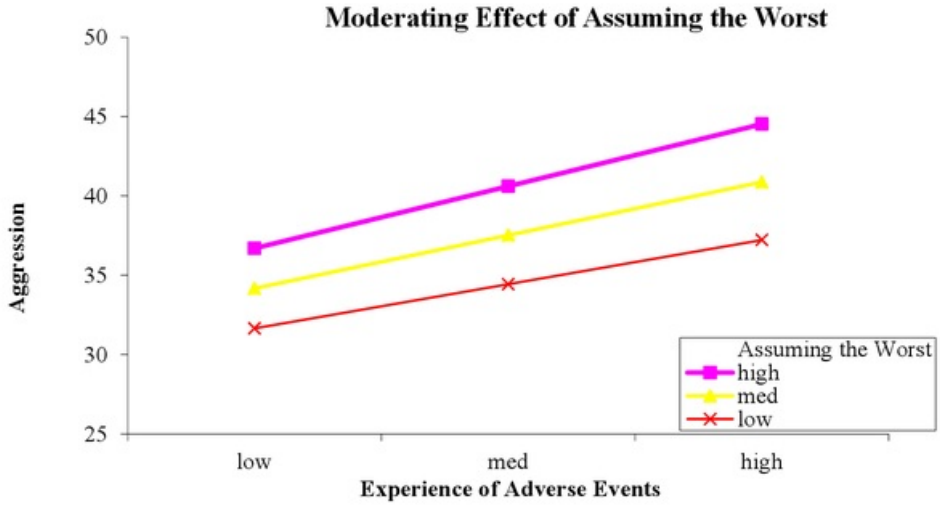

Figure 71. Moderating effect of assuming the worst in predicting aggression among adolescents

Table 39 presents results for moderating role of self-serving cognitive errors in relationship between experience of adverse life events and aggression among adolescents. Model 1 of the table shows moderation effect of self-centeredness. Values of interaction term indicate that self-centeredness significantly moderated (B = .002, t = 2.01, p < .05) the

relationship between experience of adverse life events and aggression among adolescents with explaining 23% of variance (R^2 = .23, F (3, 659) = 72.14, p < .001) in aggression. Mod graph (Figure 68) elaborates these results and suggests that self-centeredness boosted the relationship between experience of adverse life events and aggression. Slopes of the plot indicate that as the level of self-centeredness increased, it exacerbated the effect of adverse life experiences on aggressive behavior of adolescents.

Blaming others was another significant moderator (B = .001, t = 2.33, p < .05) with explaining 19% of collective variance (R^2 = .19, F (3, 659) = 48.72, p < .001) in aggressive behavior of adolescents. Making these findings more comprehensive, mod graph (Figure 69) suggests that blaming others boosted the relationship between experience of adverse life events and aggression. Slopes clearly show that impact of adverse life events got intensified with the increasing level of blaming others.

Mislabeling also served as a significant moderator (B = .003, t = 2.80, p < .01) along with contributing 25% of joint variance (R^2 = .25, F (3, 659) = 105.16, p < .001) in aggression. Extending these results, mod graph (Figure 70) reveals that mislabeling aggravated the effect of adverse life experience on aggressive behavior of adolescents.

Assuming the worst also showed significant moderation (B = .003, t = 2.20, p < .05) in the model along with accounting for 19% of joint variance (R^2 = .25, F (3, 659) = 105.16, p < .001) in aggression. Further illustrating the results mod graph (Figure 71) explains that assuming the worst strengthened the relationship between experience of adverse life events and aggression among adolescents. Slopes clearly depict that increasing the level of assuming the worst elevated the effect of adverse life experiences.

Table 40

Moderating effect of Self-Serving Cognitive Errors on Social Withdrawal among Adolescents (N = 663)

Variable		Social Withdrawal				
		B	*SE B*	*t*	*P*	*95%CI*
Constant		15.11	.20	74.98	.000	[14.72, 15.51]
EALE		.05	.04	12.02	.000	[.04, .06]
SC		-.21	.004	-5.51	.000	[-.29, -.14]
EALE × SC		-.002	.001	-2.90	.004	[-.004, -.001]
R^2	.17					
F	59.06				.000	
Constant		15.08	.20	74.07	.000	[14.68, 15.48]
EALE		.05	.004	11.36	.000	[.04, .05]
BO		-.13	.02	-5.31	.000	[-.17, -.08]
EALE × BO		-.002	.001	-3.85	.000	[-.003, -.001]
R^2	.16					
F	57.57				.000	
Constant		15.01	.22	69.48	.000	[14.58, 15.43]
EALE		.04	.004	9.09	.000	[.03, .05]
ML		.14	.05	2.73	.006	[.04, .25]
EALE × ML		-.001	.001	-.69	.491	[-.003, .001]
R^2	.11					
F	40.17				.000	
Constant		15.10	.20	73.96	.000	[14.70, 15.50]
EALE		.04	.004	10.84	.000	[.04, .05]
AW		-.19	.05	-3.93	.000	[-.28, -.09]
EALE × AW		-.005	.001	-4.79	.000	[-.007, -.003]
R^2	.15					
F	51.26				.000	

p>.05=Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, SC = Self-Centeredness, BO = Blaming Others, ML = Mislabeling, AW = Assuming the Worst

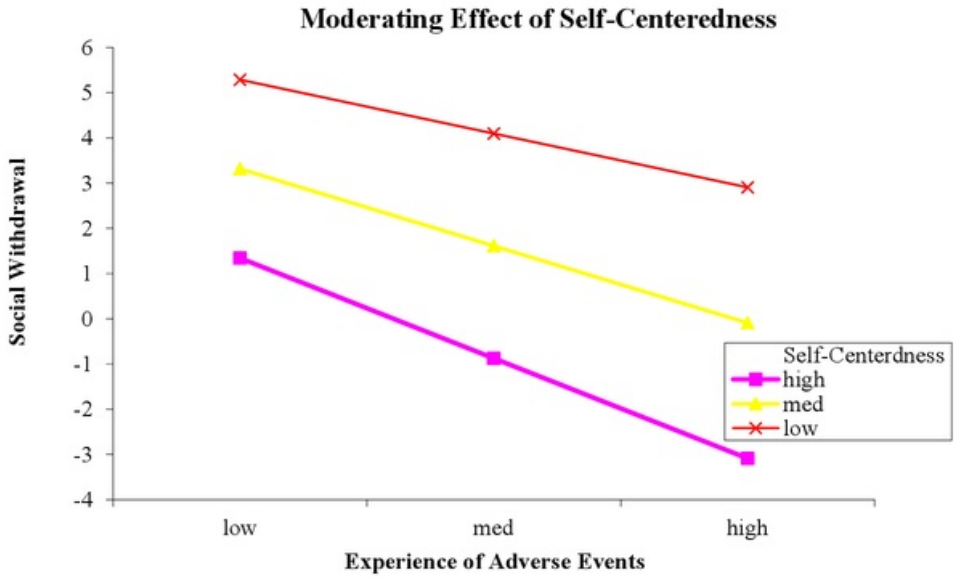

Figure 72. Moderating effect of self-centeredness in predicting social withdrawal among adolescents

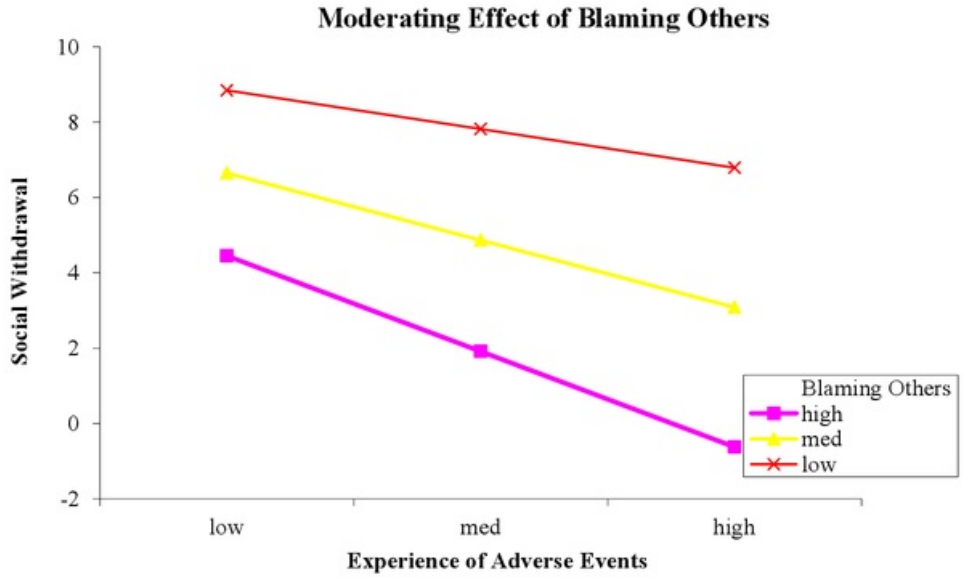

Figure 73. Moderating effect of blaming others in predicting social withdrawal among adolescents

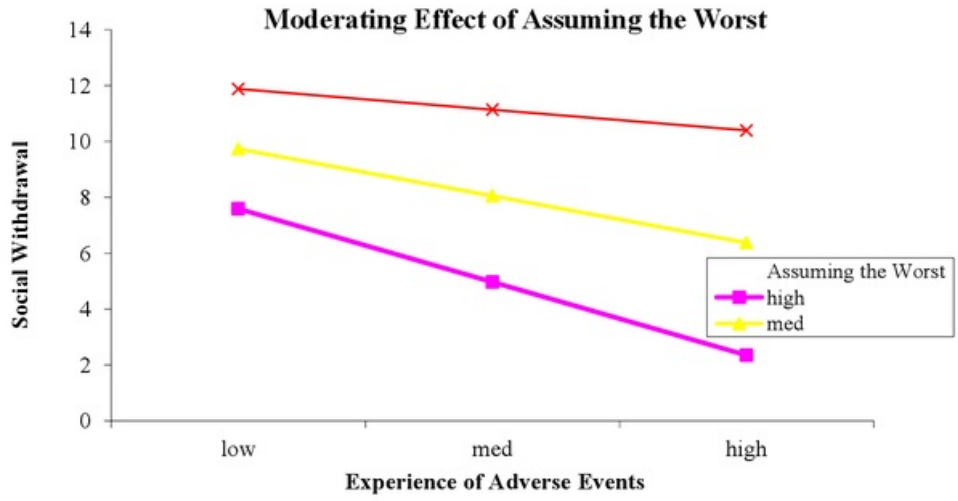

Figure 74. Moderating effect of assuming the worst in predicting social withdrawal among adolescents

Table 40 highlights the results for moderating role of self-serving cognitive errors in relationship between experience of adverse life events and social withdrawal among adolescents. Model 1 of the table shows moderating power of self-centeredness. Values of interaction term suggest self-centeredness a significant moderator (B = -.002, t = -2.90, p < .01) with accounting for 17% of variance (R^2 = .17, F (3, 659) = 59.06, p < .001) in social withdrawal. These results are further elaborated through mod graph (Figure 72) which reveals that self-centeredness weakened the relationship between experience of adverse life events and social withdrawal among adolescents. Slopes of the plot clearly indicate that as the level of self-centeredness increased, the impact of adverse life experiences got minimized.

Blaming others also served as a significant moderator (B = -.002, t = -3.58, p < .001) with explaining 16% of variance (R^2 = .16, F (3, 659) = 57.57, p < .001) in social

withdrawal. Mod graph (Figure 73) further elucidates this effect through slopes which depict that blaming others palliated the impact of adverse life experiences on social withdrawal behavior. As the level of social withdrawal increased, the impact of adverse life experiences decreased in intensity.

Model 3 of the table reveals that mislabeling did not explain significant moderation effect (B = -.001, t = -.69, p > .05) in the relationship between experience of adverse life events and social withdrawal among adolescents.

A significant interaction term (B = -.005, t = -4.79, p < .001) in model 4 of the table shows moderating power of assuming the worst and explains 15% of variance (R^2 = .15, F (3, 659) = 51.26, p < .001) in social withdrawal. Mod graph (Figure 74) makes these findings more evident by revealing that assuming the worst buffered the relationship between experience of adverse life events and social withdrawal. Slopes of the plot indicate that increase in the level of assuming the worst minimized the effect of adverse life experience.

Table 41

Moderating effect of Self-Serving Cognitive Errors on Somatic Complaints among Adolescents (N = 663)

Variable		Somatic Complaints				
		B	*SE B*	*t*	*P*	*95%CI*
Constant		7.79	.12	63.71	.000	[7.55, 8.03]
EALE		.03	.003	11.24	.000	[.03, .04]
SC		-.19	.02	-8.64	.000	[-.24, -.15]
EALE × SC		-.001	.001	-1.26	.207	[-.002, .0003]
R^2	.20					
F	67.27				.000	
Constant		7.78	.12	63.84	.000	[7.55, 8.02]
EALE		.03	.003	10.72	.000	[.02, .03]
BO		-.13	.01	-9.42	.000	[-.16, -.10]
EALE × BO		-.001	.0003	-2.12	.034	[-.001, .000]
R^2	.20					
F	68.36				.000	
Constant		7.73	.13	57.31	.000	[7.46, 7.99]
EALE		.02	.003	7.88	.000	[.02, .03]
ML		.06	.04	1.74	.082	[-.008, .13]
EALE × ML		.001	.001	.94	.348	[-.001, .002]
R^2	.09					
F	29.66				.000	
Constant		7.82	.13	61.72	.000	[7.57, 8.07]
EALE		.03	.003	9.55	.000	[.02, .03]
AW		-.17	.03	-5.67	.000	[-.22, -.11]
EALE × AW		-.003	.001	-4.23	.000	[-.004, -.001]
R^2	.16					
F	41.18				.000	

*p>.05=Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, SC = Self-Centeredness, BO = Blaming Others, ML = Mislabeling, AW = Assuming the Worst

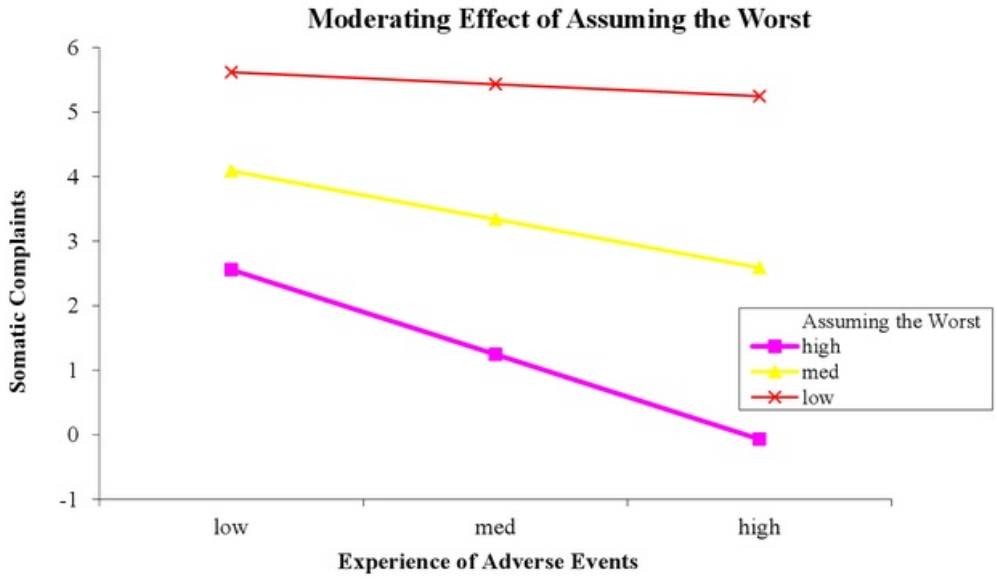

Figure 75. Moderating effect of assuming the worst in predicting somatic complaints among adolescents

Table 41 displays results for moderating role of self-serving cognitive errors in relationship between experience of adverse life events and somatic complaints among adolescents. Findings shows that all types of self-serving cognitive errors showed a non-significant moderation effect ($p > .05$) except assuming the worst. Model 4 of the table shows significant interaction effect ($B = -.003$, $t = -4.23$, $p < .001$) along with accounting for 16% of variance ($R^2 = .16$, $F\ (3, 659) = 41.18$, $p < .001$) in somatic complaints. Mod graph (Figure 75) further elaborates that assuming the worst buffered the effect of adverse life experiences on somatic complaints among adolescents.

Table 42

Moderating effect of Self-Serving Cognitive Errors on Academic Problems among Adolescents (N = 663)

Variable		Academic Problems				
		B	*SE B*	*t*	*P*	*95%CI*
Constant		17.64	.29	58.87	.000	[17.05, 18.23]
EALE		.06	.006	9.10	.000	[.04, .07]
SC		-.09	.06	-1.59	.112	[-.21, .02]
EALE × SC		-.001	.001	-.004	.352	[-.004, .001]
R^2	.09					
F	28.40				.000	
Constant		17.60	.29	59.09	.000	[17.02, 18.19]
EALE		.05	.01	8.84	.000	[.04, .07]
BO		-.05	.04	-1.15	.249	[-.13, .03]
EALE × BO		-.001	.001	-.59	.549	[-.002, .001]
R^2	.09					
F	28.99				.000	
Constant		17.63	.30	58.56	.000	[17.04, 18.22]
EALE		.04	.006	7.24	.000	[.03, .06]
ML		.53	.09	5.91	.000	[.35, .70]
EALE × ML		-.002	.02	-.98	.327	[-.005, .002]
R^2	.14					
F	45.51				.000	
Constant		17.68	.29	59.87	.000	[17.09, 18.26]
EALE		.05	.006	8.50	.893	[.04, .06]
AW		.01	.08	.13	.000	[-.15, .17]
EALE × AW		.004	.002	2.13	.000	[-.008, -.0003]
R^2	.09					
F	34.55				.000	

p>.05=Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, SC = Self-Centeredness, BO = Blaming Others, ML = Mislabeling, AW = Assuming the Worst

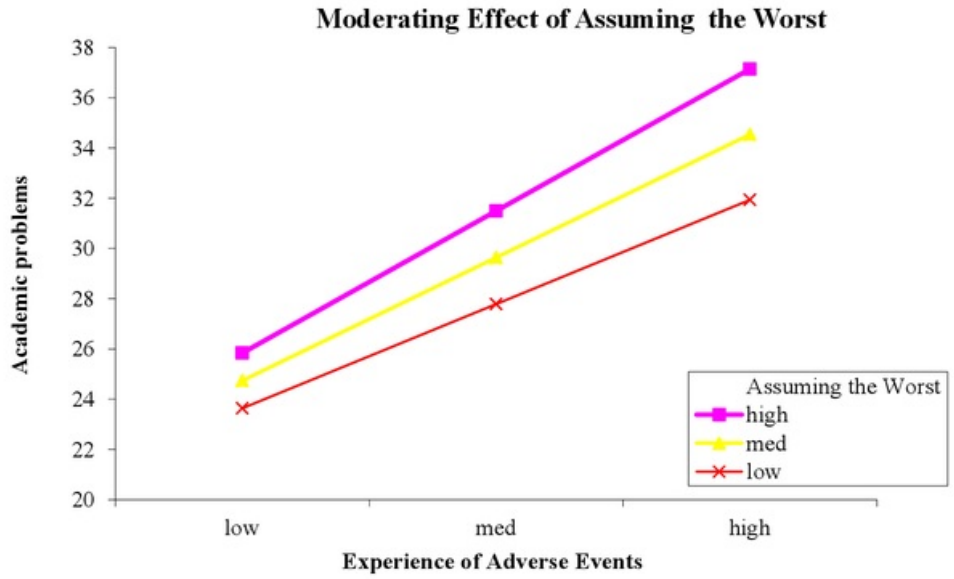

Figure 76. Moderating effect of assuming the worst in predicting academic problems among adolescents

Table 42 highlights results for moderating role of self-serving cognitive errors in relationship between experience of adverse life events and academic problems among adolescents. Findings reveal that none of the self-serving cognitive errors explained significant moderation in the model except assuming the worst. Model 4 of the table suggest assuming the worst a significant moderator ($B = .004$, $t = 2.13$, $p < .001$) along with contributing 9% of variance ($R^2 = .09$, $F\ (3, 659) = 34.55$, $p < .001$) in academic problems. Mod graph (Figure 76) further illustrates that assuming the worst exacerbated the effect of adverse life experiences on academic problems among adolescents.

Table 43

Moderating effect of Self-Serving Cognitive Errors on Feelings of Rejection among Adolescents (N = 663)

Variable		Feelings of Rejection				
		B	*SE B*	*t*	*P*	*95%CI*
Constant		9.56	.17	54.48	.000	[9.22, 9.90]
EALE		.04	.004	11.42	.000	[.03, .04]
SC		-.23	.03	-6.62	.000	[-.30, -.16]
EALE × SC		-.001	.001	-1.07	.282	[-.002, .001]
R^2	.17					
F	56.49				.000	
Constant		9.55	.17	54.63	.000	[9.21, 9.89]
EALE		.04	.004	10.45	.000	[.03, .04]
BO		-.14	.02	-6.16	.000	[-.18, -.09]
EALE × BO		-.0007	.0005	-1.38	.167	[-.002, .0003]
R^2	.15					
F	49.74				.000	
Constant		9.50	.18	50.81	.000	[9.14, 9.87]
EALE		.03	.004	8.41	.000	[.03, .04]
ML		.07	.05	1.38	.168	[-.03, .17]
EALE × ML		.0004	.001	.30	.762	[-.002, .002]
R^2	.09					
F	28.02				.000	
Constant		9.57	.18	53.68	.000	[9.21, 9.92]
EALE		.04	.004	9.51	.000	[.03, .04]
AW		-.16	.04	-3.71	.000	[-25, -.07]
EALE × AW		-.002	.001	-1.98	.047	[-.004, .000]
R^2	.12					
F	36.13				.000	

p>.05=Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, SC = Self-Centeredness, BO = Blaming Others, ML = Mislabeling, AW = Assuming the Worst

Table 43 shows results for moderating role of self-serving cognitive errors and values indicate that none of the self-serving cognitive errors accounted for significant moderation in the association of adverse life experiences and feelings of rejection.

Table 44

Moderating effect of Personality Traits on Anxiousness among Adolescents (N = 663)

Variable		Anxiousness				
		B	*SE B*	*t*	*P*	*95%CI*
Constant		24.77	.39	63.26	.000	[24.004, 25.54]
EALE		.04	.008	5.27	.000	[.03, .06]
NEU		.46	.04	11.15	.000	[.38, .54]
EALE × NEU		.006	.001	6.07	.000	[.004, .007]
R^2	.28					
F	92.75				.000	
Constant		24.37	.38	63.69	.000	[23.62, 25.12]
EALE		.04	.01	4.55	.000	[.02, .05]
EXT		-.56	.04	-15.34	.000	[-.63, -.49]
EALE × EXT		-.003	.001	-3.97	.000	[-.005, -.002]
R^2	.34					
F	159.92				.000	
Constant		27.52	.57	48.52	.000	[26.40, 28.63]
EALE		.09	.01	7.17	.000	[.07, .13]
OPEN		-.47	.06	-8.53	.000	[-.58, -.36]
EALE × OPEN		-.004	.001	-3.58	.000	[-.006, -.002]
R^2	.39					
F	210.26				.000	
Constant		27.41	.54	50.57	.000	[26.35, 28.48]
EALE		.13	.01	11.57	.000	[.11, .16]
AGRE		-.30	.06	-5.13	.000	[-.42, -.19]
EALE × AGRE		-.004	.001	-3.08	.002	[-.007, -.002]
R^2	.34					
F	129.92				.000	
Constant		27.02	.57	47.76	.000	[25.91, 28.13]
EALE		.11	.01	8.54	.000	[.08, .13]
CONS		-.41	.05	-7.94	.000	[-.51, -.31]
EALE × CONS		-.002	.001	-1.90	.058	[-.0001, .004]
R^2	.37					
F	178.95				.000	

p>.05=Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, NEU = Neuroticism, EXT = Extraversion, OPEN = Openness, AGRE = Agreeableness, CONS = Conscientiousness

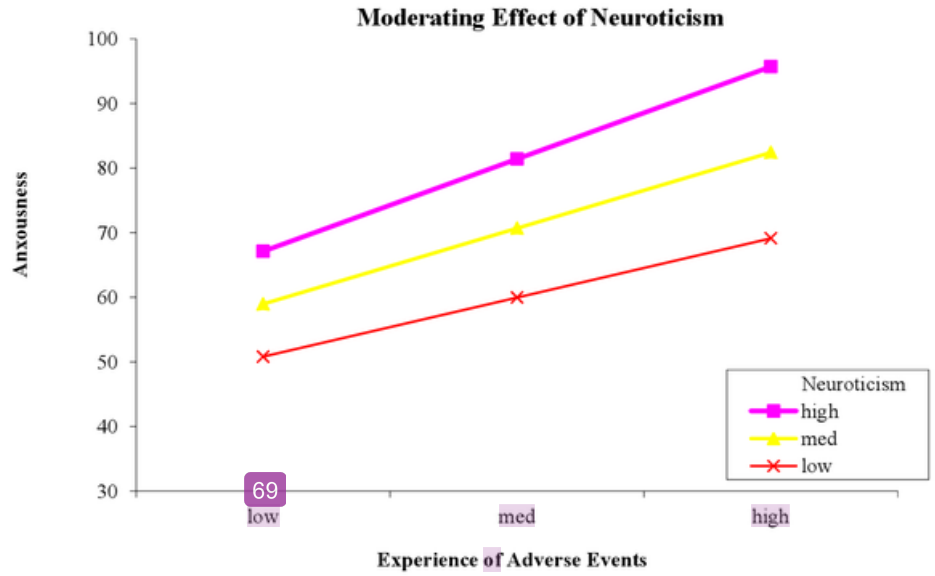

Figure 77. Moderating effect of neuroticism in predicting anxiousness among adolescents

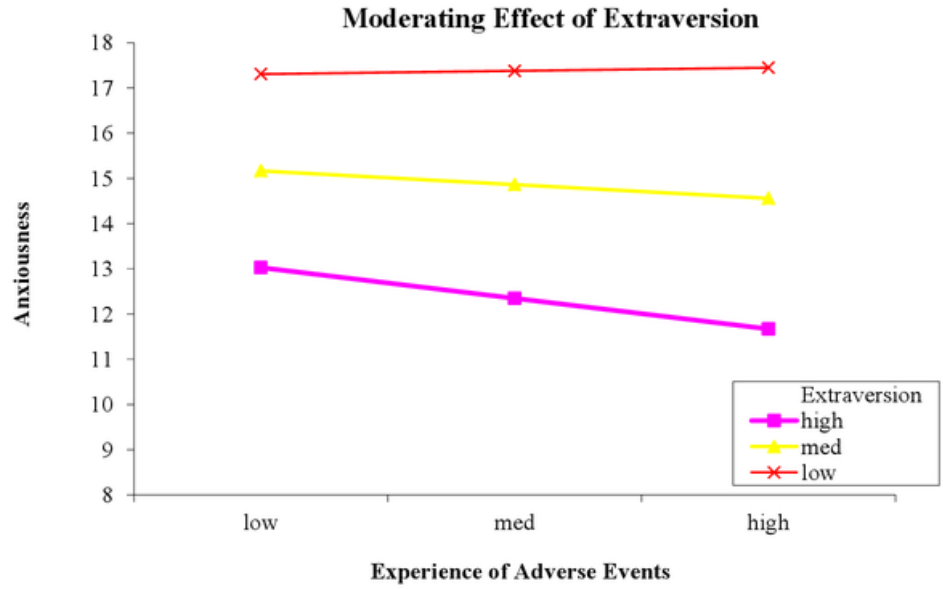

Figure 78. Moderating effect of extraversion in predicting anxiousness among adolescents

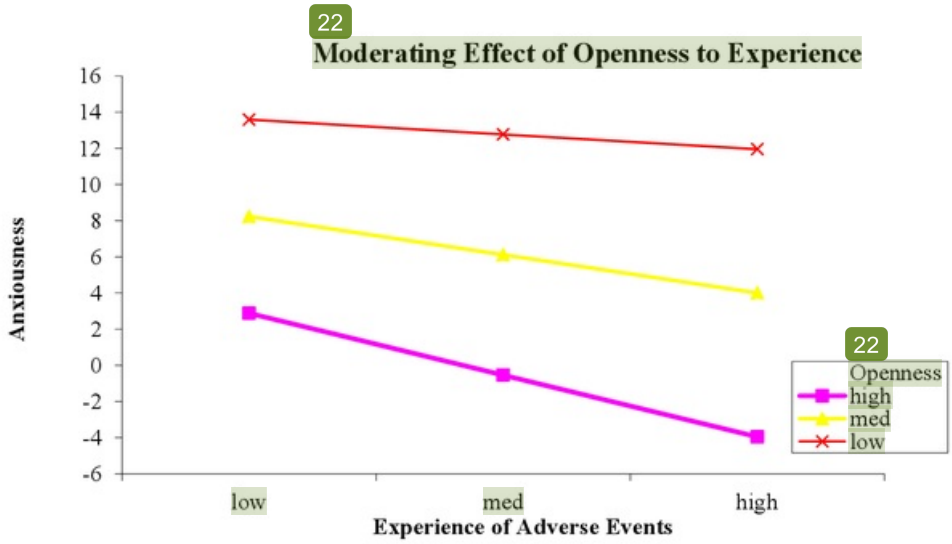

Figure 79. Moderating effect of Openness to experience in predicting anxiousness among adolescents

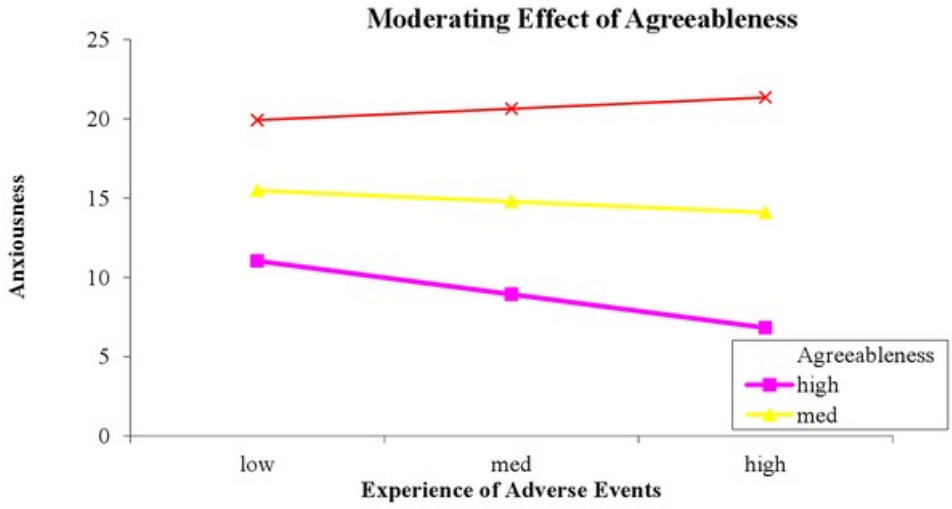

Figure 80. Moderating effect of agreeableness in predicting anxiousness among adolescents

Table 44 shows results for moderating role of personality traits in relationship between experience of adverse life events and anxiousness among adolescents. Model 1 of the table highlights the moderation effect of neuroticism. Significant interaction term between neuroticism and experience of adverse life events (B = .006, t = 6.07, p < .001)

reveals neuroticism as a significant moderator with explaining 28% of variance (R^2 = .28, F (3, 659) = 92.75, p < .001) in anxiousness. Mod graph (Figure 77) further elaborates this effect by suggesting that neuroticism boosted the relationship between experience of adverse life events and anxiousness among adolescents. Slopes indicate that increase in the level of neuroticism elevated the effect of adverse life experience.

Extraversion also significantly moderated (B = -.003, t = -3.97, p < .001) the effect of adverse life experiences along with contributing 34% of variance (R^2 = .34, F (3, 659) = 159.92, p < .001) in anxiousness. Making this effect evident, interaction plot (Figure 78) indicates that extraversion buffered the effect of adverse life experiences on anxiousness. Slopes depict that high and medium levels of extraversion alleviated the effect of adverse life events whereas low level of extraversion did not account for any significant change in the model.

For openness, interaction term shows significant moderating effect (B = -.004, t = -3.58, p < .001) along with producing 39% of variance (R^2 = .39, F (3, 659) = 210.26, p < .001) in anxiousness. Mod graph (Figure 79) elucidates these results by suggesting that openness attenuated the relationship between experience of adverse life events and anxiousness among adolescents. Slopes of the graph depict that as the level of openness increased the effect of adverse life experiences faded.

Agreeableness also served as a significant moderated (B = -.004, t = -3.08, p < .01) and collectively, with experience of adverse events, explained 34% variance (R^2 = .34, F (3, 659) = 129.92, p < .001) in anxiousness. Mod graph (Figure 80) further illustrates these findings and suggests that agreeableness weakened the relationship between experience of adverse life events and anxiousness among adolescents. Slopes of the graph depict that high level of agreeableness attenuated the effect of adverse life experiences on anxiousness

whereas the low level of the trait boosted this effect. However no significant change was observed when agreeableness was at medium level.

Model 5 of the table shows moderating effect of conscientiousness. Interaction term suggests that conscientiousness did not account for significant moderation ($p > .05$) in the relationship between experience of adverse life events and anxiousness among adolescents.

Table 45

Moderating effect of Personality Traits on Aggression among Adolescents (N = 663)

Variable		Aggression				
		B	*SE B*	*t*	*P*	*95%CI*
Constant		23.42	.23	100.39	.000	[22.96, 23.88]
EALE		.05	.005	9.06	.000	[.04, .06]
NEU		.09	.03	3.36	.000	[04, .14]
EALE × NEU		.002	.001	3.28	.001	[.001, .004]
R^2	.14					
F	27.83				.000	
Constant		23.32	.23	100.51	.000	[22.86, 23.78]
EALE		.04	.005	7.97	.000	[.03, .05]
EXT		-.03	.02	-1.08	.279	[-.02, .07]
EALE × EXT		-.002	.001	-3.15	.000	[-.003, -.001]
R^2	.11					
F	24.15				.000	
Constant		24.84	.24	104.04	.000	[24.37, 25.31]
EALE		.03	.006	5.43	.000	[.02, .04]
OPEN		-.25	.03	-9.31	.000	[-.31, -.20]
EALE × OPEN		-.003	.0005	-5.65	.000	[-.004, -.002]
R^2	.35					
F	103.86				.000	
Constant		24.60	.23	105.14	.000	[24.14, 25.06]
EALE		.06	.005	11.69	.000	[.05, .07]
AGRE		-.09	.03	-3.44	.000	[-.15, -.04]
EALE × AGRE		-.003	.001	-4.05	.000	[-.004, -.001]
R^2	.25					
F	78.67				.000	
Constant		24.72	.25	99.15	.000	[24.23, 25.21]
EALE		.04	.006	7.27	.000	[.03, .06]
CONS		-.19	.03	-.7.23	.000	[-.24, -.14]
EALE × CONS		-.003	.001	-4.81	.000	[-.004, -.002]
R^2	.32					
F	93.36				.000	

*p>.05= Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, NEU = Neuroticism, EXT = Extraversion, OPEN = Openness, AGRE = Agreeableness, CONS = Conscientiousness

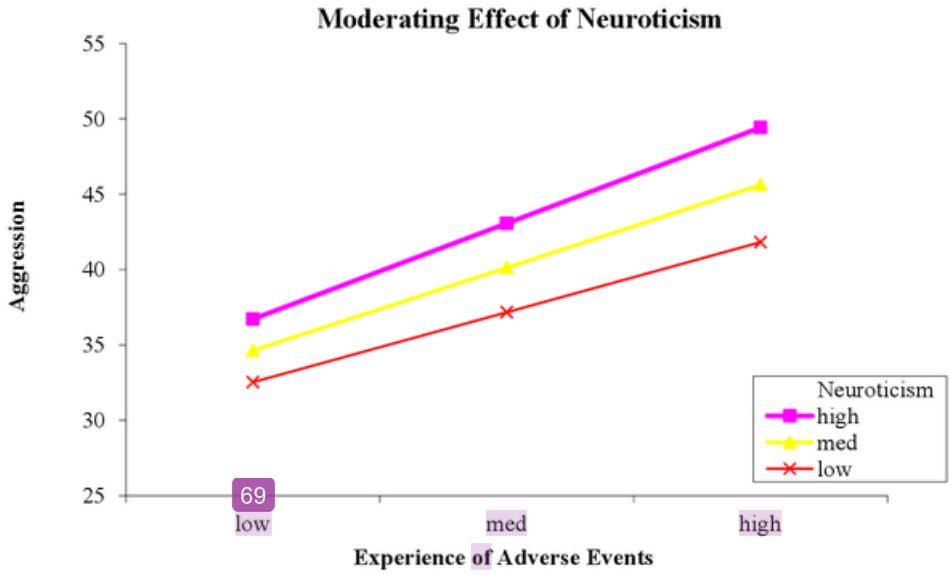

Figure 81. Moderating effect of neuroticism in predicting aggression among adolescents

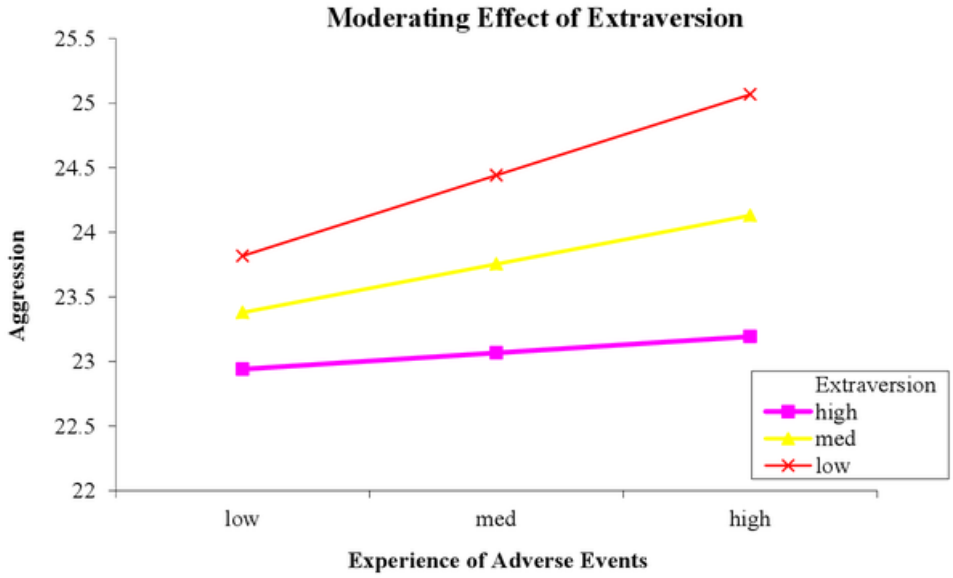

Figure 82. Moderating effect of extraversion in predicting aggression among adolescents

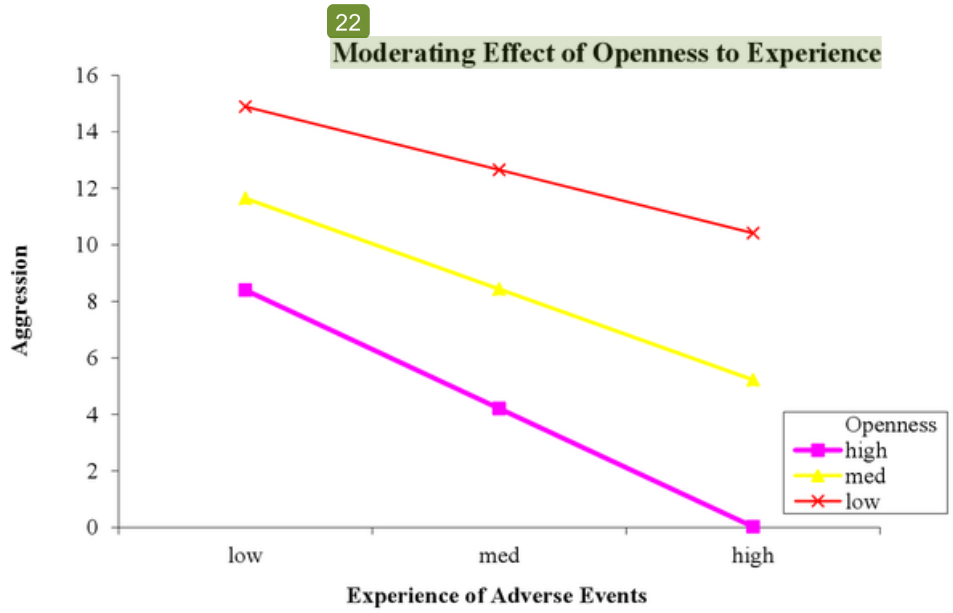

Figure 83. Moderating effect of openness to experience in predicting aggression among adolescents

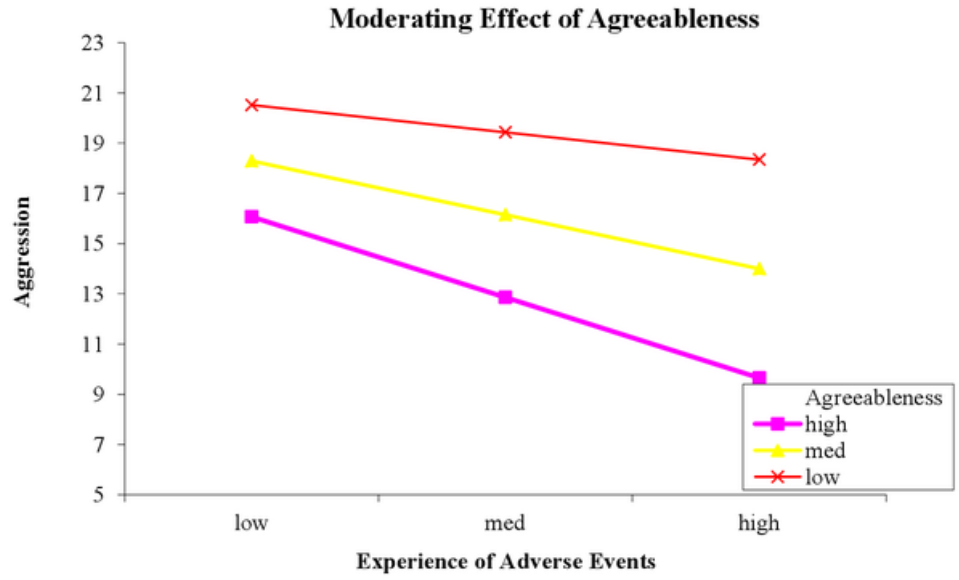

Figure 84. Moderating effect of agreeableness in predicting aggression among adolescents

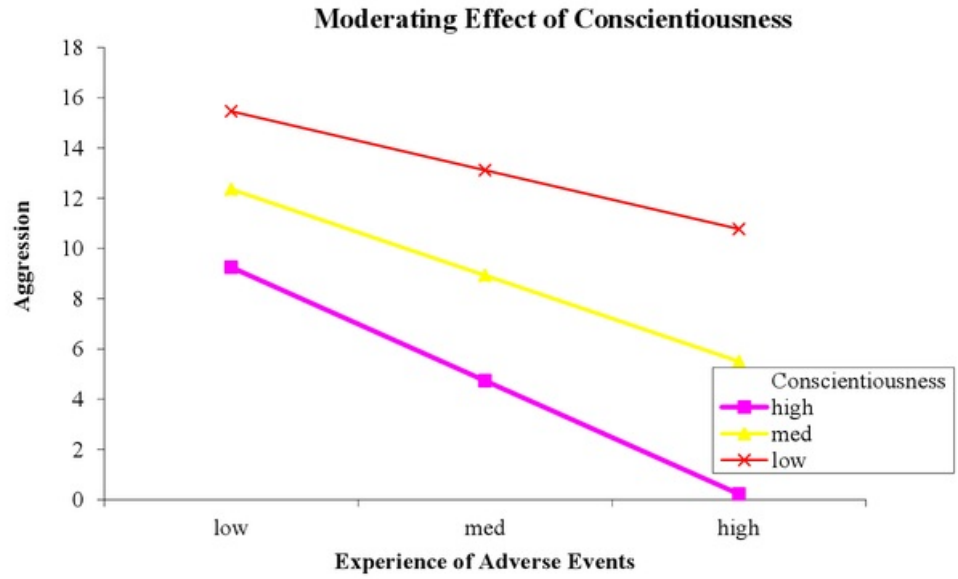

Figure 85. Moderating effect of conscientiousness in predicting aggression among adolescents

Table 45 displays results for moderating role of personality traits in relationship between experience of adverse life events and aggression among adolescents. Model 1 of the table shows moderating effect of neuroticism. Values of interaction term indicate that neuroticism significantly moderated (B = .002, t = 3.28, $p < .01$) the effect of adverse life experiences along with contributing 14% of ($R^2 = .14$, F (3, 659) = 27.83, $p < .001$) variance in aggressive behavior of adolescents. Mod graph (Figure 81) elaborates these findings by suggesting that neuroticism boosted the relationship between experience of adverse life events and aggression among adolescents. Slopes of the graph indicate that as the level of neuroticism increased the effect of adverse life experiences also escalated.

Model 2 of the table depicts extraversion as a significant moderator (B = -.002, t = -3.15, $p < .001$) and the values suggest that extraversion and experience of adverse life events collectively explained 11% of variance ($R^2 = .11$, F (3, 659) = 24.15, $p < .001$) in aggression. Mod graph (Figure 82) further illustrates this effect by suggesting at high,

medium and low levels of extraversion. Slopes indicate that when extraversion was at medium or low level, it escalated the effect of adverse life experiences on aggression. However when extraversion was high, it did not contributed a significant effect in the model.

Values of model 3 in the tables reveal that openness also significantly moderated (B = -.003, t = -5.65, $p < .001$) the effect of adverse life experiences with explaining 35% of variance ($R^2 = .35$, F (3, 659) = 103.86, $p < .001$) in aggression. Mod graph (Figure 83) explicates these results by showing that openness buffered the relationship between experiences of adverse life events and aggression among adolescents. Slopes indicate that as the level of openness increased it alleviated the impact of adverse life events.

For agreeableness, interaction term suggested a significant moderation effect (B = -.003, t = -4.05, $p < .001$) along with contributing 25% of variance ($R^2 = .25$, F (3, 659) = 78.67, $p < .001$) in adolescents' aggressive behavior. Further elaborating the findings, mod graph (Figure 84) depicts that agreeableness buffered the relationship between experience of adverse life events and aggression. Slopes indicate that increase in the level of agreeableness attenuated the effect of adverse life experiences on aggression.

Conscientiousness, as depicted in model 5 of the table, also showed a significant moderation (B = -.003, t = -4.81, $p < .001$). Values show that conscientiousness and experience of adverse life events collectively produced 32% of variance ($R^2 = .32$, F (3, 659) = 93.36, $p < .001$) in aggression. Mod graph (Figure 85) illustrates these findings and shows that agreeableness buffered the effect of adverse life experiences on aggressive behavior of adolescents. Slopes indicate that increase in conscientiousness decreases the effect of adverse life experiences.

Table 46

Moderating effect of Personality Traits on Social Withdrawal among Adolescents (N = 663)

Variable		Social Withdrawal				
		B	*SE B*	*t*	*P*	*95%CI*
Constant		15.49	.20	76.05	.000	[15.09, 15.89]
EALE		.02	.004	5.82	.000	[.02, .03]
NEU		.23	.02	10.84	.000	[.19, .27]
EALE × NEU		.003	.0004	7.30	.000	[.002, .004]
R^2	.27					
F	95.42				.000	
Constant		15.26	.21	74.18	.000	[14.86, 15.67]
EALE		.02	.004	5.20	.000	[.01, .03]
EXT		-.26	.02	-12.02	.000	[-.30, -.22]
EALE × EXT		-.002	.0004	-4.05	.000	[-.003, -.001]
R^2	.29					
F	108.75				.000	
Constant		18.76	.29	62.85	.000	[18.17, 19.34]
EALE		.04	.007	6.58	.000	[.03, .06]
OPEN		-.23	.03	-8.12	.000	[-.29, -.17]
EALE × OPEN		-.004	.0005	-7.28	.000	[-.005, -.003]
R^2	.32					
F	146.31				.000	
Constant		18.57	.29	63.79	.000	[17.99, 19.14]
EALE		.07	.006	11.73	.017	[.06, .08]
AGRE		-.08	.03	-2.39	.000	[-..14, -.01]
EALE × AGRE		-.004	.001	-5.59	.000	[-.006, -.003]
R^2	.25					
F	94.64				.000	
Constant		18.60	.31	59.51	.000	[17.98, 19.21]
EALE		.06	.007	8.81	.000	[.05, .07]
CONS		-.14	.03	-.4.83	.000	[-.20, -.08]
EALE × CONS		-.003	.001	-5.70	.000	[-.005, -.002]
R^2	.28					
F	114.44				.000	

*p>.05= Non-significant, ***p* < .001

Note: EALE = Experience of Stressful Life Event, NEU = Neuroticism, EXT = Extraversion, OPEN = Openness, AGRE = Agreeableness, CONS = Conscientiousness

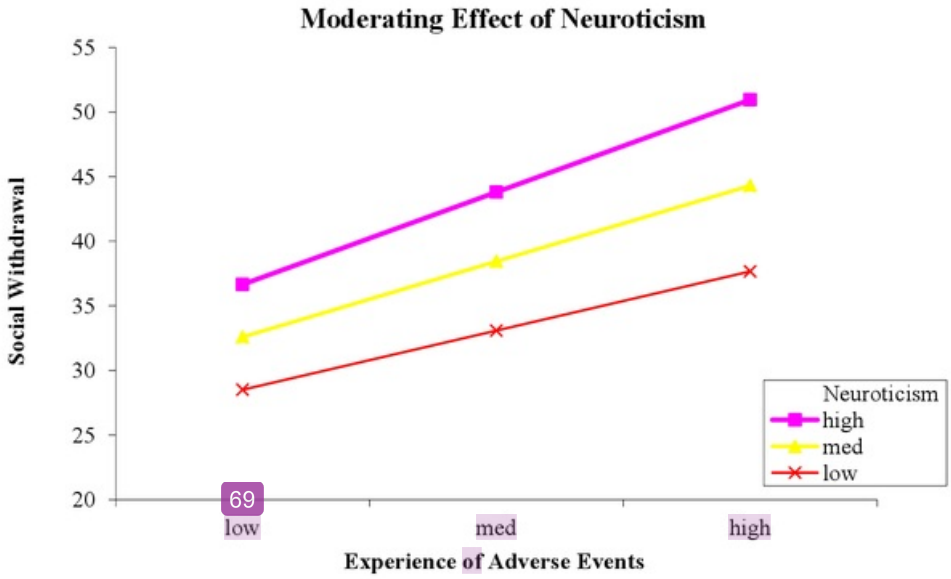

Figure 86. Moderating effect of neuroticism in predicting social withdrawal among adolescents

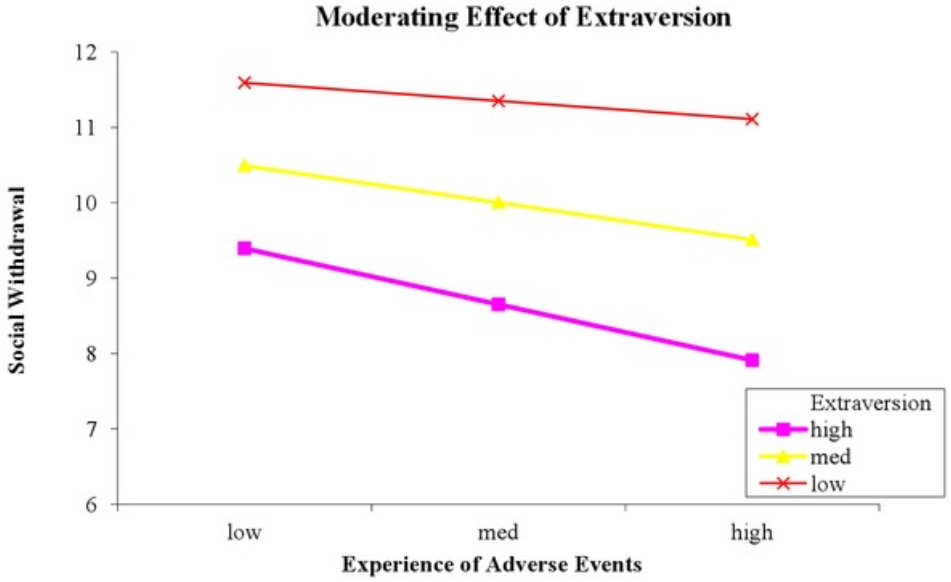

Figure 87. Moderating effect of extraversion in predicting social withdrawal among adolescents

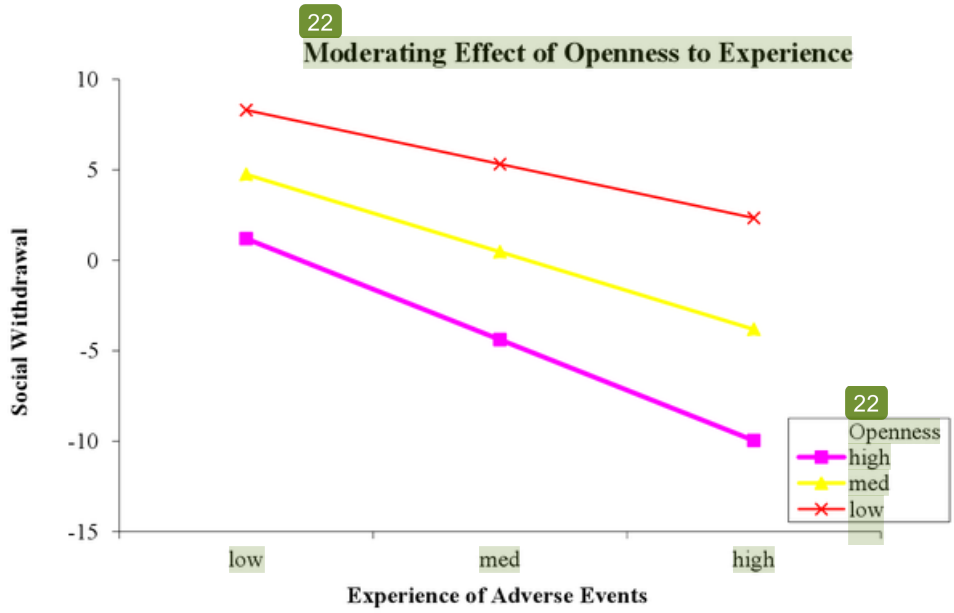

Figure 88. Moderating effect of openness to experience in predicting social withdrawal among adolescents

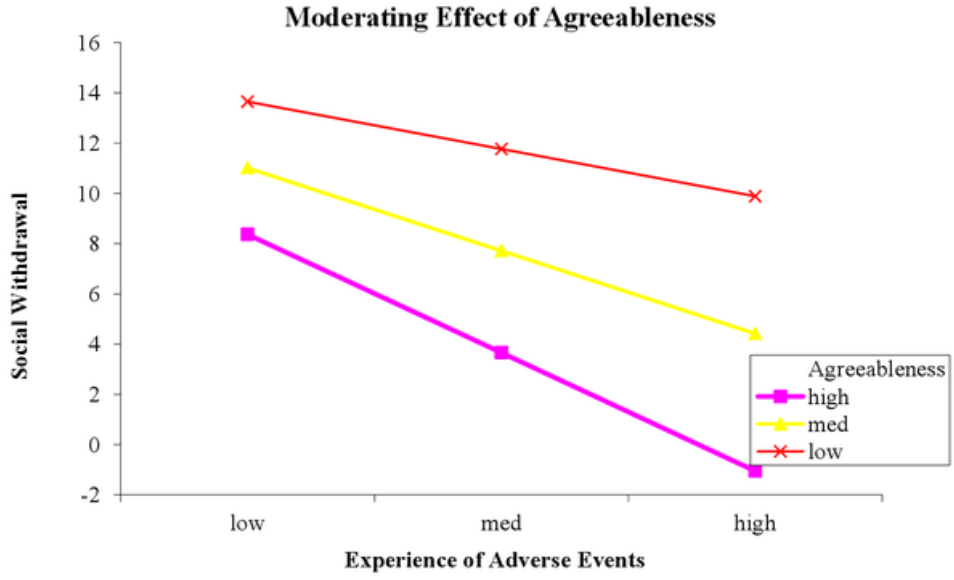

Figure 89. Moderating effect of agreeableness in predicting social withdrawal among adolescents

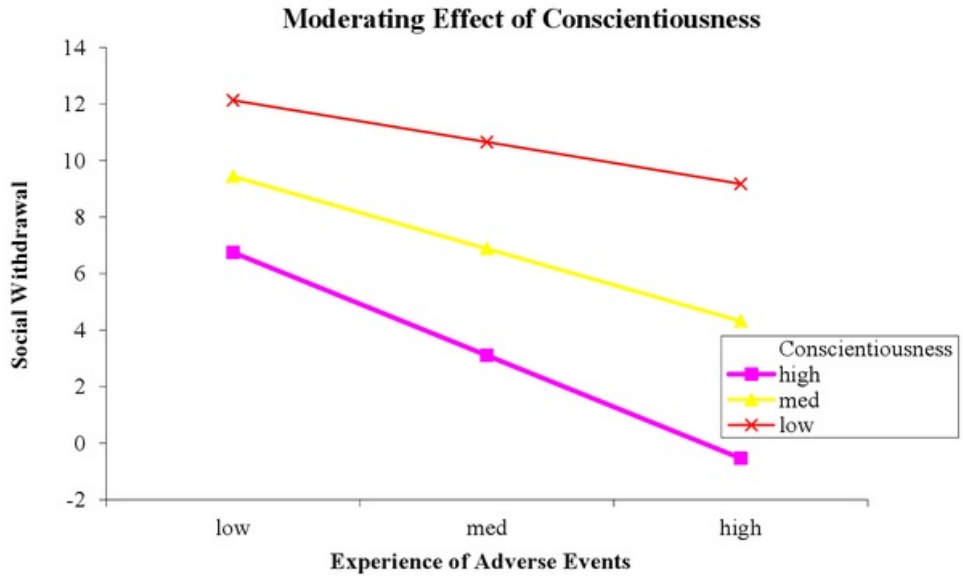

Figure 90. Moderating effect of conscientiousness in predicting social withdrawal among adolescents

Table 46 shows results for moderating role of personality traits in relationship between experience of adverse life events and social withdrawal among adolescents. Model 1 of the table highlights the moderation effect of neuroticism. Significant interaction term between neuroticism and experience of adverse life events (B = .003, t = 7.30, p < .001) reveals neuroticism as a significant moderator with explaining 27% of variance (R^2 = .27, F (3, 659) = 95.42, p < .001) in social withdrawal. Mod graph (Figure 86) further elaborates this effect by suggesting that neuroticism boosted the relationship between experience of adverse life events and social withdrawal among adolescents. Slopes indicate that increase in the level of neuroticism elevated the effect of adverse life experience.

Model 2 of the table depicts extraversion as a significant moderator (B = -.002, t = -4.05, p < .001) and the values suggest that extraversion and experience of adverse life events collectively explained 29% of variance (R^2 = .29, F (3, 659) = 108.75, p < .001) in

social withdrawal. Mod graph (Figure 87) further illustrates this effect by suggesting at high, medium and low levels of extraversion. Slopes indicate that increase in the level of extraversion weakened the effect of adverse life experiences.

For openness, interaction term shows significant moderating effect (B = -.004, t = -7.28, p < .001) along with producing 32% of variance (R^2 = .32, F (3, 659) = 146.31, p < .001) in social withdrawal. Mod graph (Figure 88) elucidates these results by suggesting that openness buffered the relationship between experience of adverse life events and social withdrawal among adolescents. Slopes of the graph depict that as the level of openness increased the effect of adverse life experiences faded.

For agreeableness, interaction term suggested a significant moderation effect (B = -.004, t = -5.59, p < .001) along with contributing 25% of variance (R^2 = .25, F (3, 659) = 94.64, p < .001) in social withdrawal. Further elaborating the findings, mod graph (Figure 89) depicts that agreeableness buffered the relationship between experience of adverse life events and social withdrawal. Slopes indicate that increase in the level of agreeableness attenuated the effect of adverse life experiences on social withdrawal.

Interaction term in model 5 depict that conscientiousness also showed significant moderation effect (B = -.003, t = -5.70, p < .001) on the impact of adverse life experiences with explaining 28% variance (R^2 = .28, F (3, 659) = 114.44, p < .001) in social withdrawal. Making these findings more obvious, mod graph depicts (Figure 90) that conscientiousness buffered the relationship between experience of adverse life events and social withdrawal. Slopes indicate that as the level of conscientiousness increased it alleviated the effect of adverse life experiences.

Table 47

Moderating effect of Personality Traits on Somatic Complaints among Adolescents (N = 663)

Variable		Somatic Complaints				
		B	*SE B*	*t*	*P*	*95%CI*
Constant		8.05	.13	63.14	.000	[7.79, 8.29]
EALE		.01	.003	4.91	.000	[.008, .02]
NEU		.13	.01	10.24	.000	[.10, .15]
EALE × NEU		.002	.0003	6.25	.000	[.001, .002]
R^2	.24					
F	77.84				.000	
Constant		7.88	.13	62.67	.000	[7.64, 8.13]
EALE		.01	.003	3.98	.000	[.006, .02]
EXT		-.17	.01	-.14.24	.000	[-.19, -.14]
EALE × EXT		-.001	.0003	-3.31	.001	[-.001, -.0004]
R^2	.28					
F	123.88				.000	
Constant		8.29	.18	46.86	.000	[7.95, 8.64]
EALE		.003	.004	.70	.000	[-.006, .01]
OPEN		-.09	.02	-4.54	.484	[-.12, -.05]
EALE × OPEN		-.001	.0004	-2.27	.023	[-.002, -.0001]
R^2	.07					
F	21.80				.000	
Constant		8.22	.16	50.66	.000	[7.90, 8.54]
EALE		.01	.004	3.40	.000	[.006, .02]
AGRE		-.02	.02	-.98	.328	[-.06, .02]
EALE × AGRE		-.001	.0004	-1.91	.057	[-.002, -.000]
R^2	.04					
F	9.55				.000	
Constant		8.12	.18	44.58	.000	[7.76, 8.45]
EALE		.008	.005	1.76	.000	[-.001, .02]
CONS		-.05	.02	-2.76	.079	[-.09, -.02]
EALE × CONS		-.0003	.0004	-.69	.487	[-.001, .001]
R^2	.05					
F	11.58				.000	

p>.05=Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, NEU = Neuroticism, EXT = Extraversion, OPEN = Openness, AGRE = Agreeableness, CONS = Conscientiousness

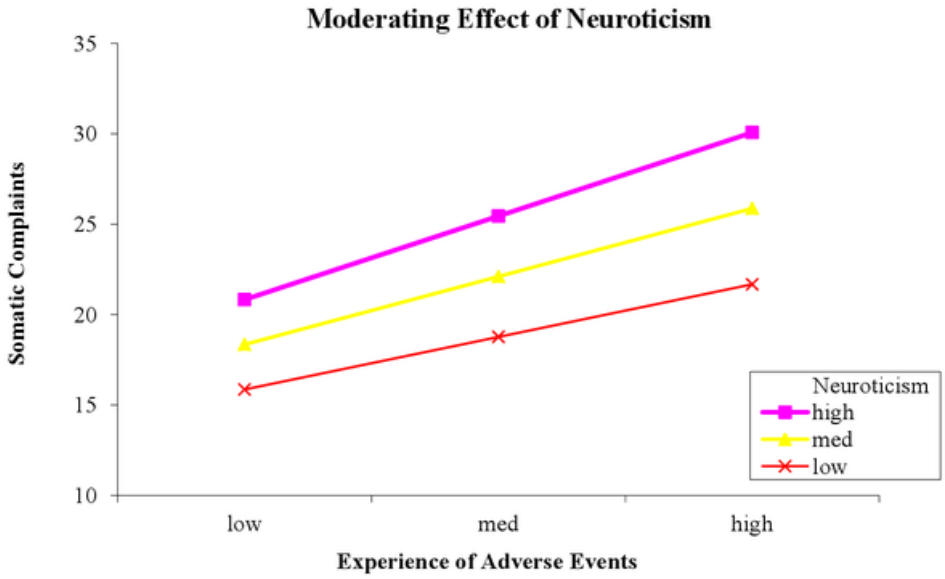

Figure 91. Moderating effect of neuroticism in predicting somatic complaints among adolescents

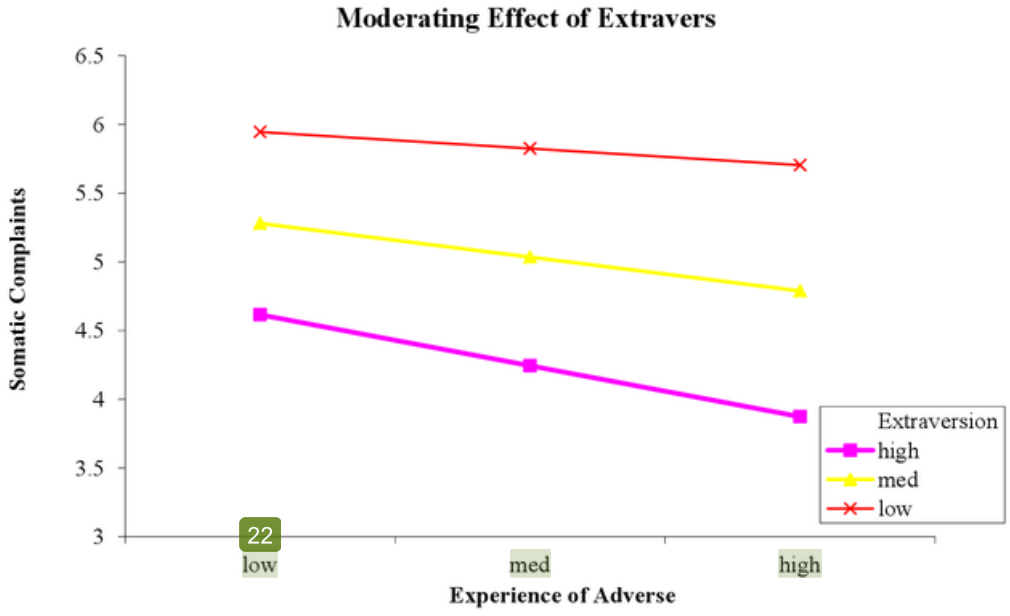

Figure 92. Moderating effect of extraversion in predicting somatic complaints among adolescents

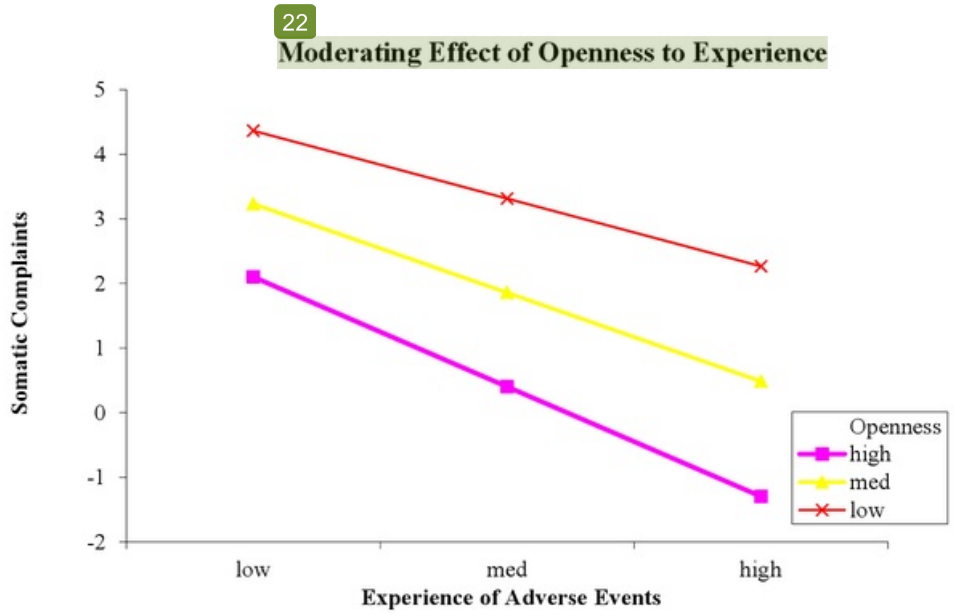

Figure 93. Moderating effect of openness to experience in predicting somatic complaints among adolescents

Table 47 displays results for moderating role of personality traits in relationship between experience of adverse life events and somatic complaints among adolescents. Moderation effect of neuroticism is reported in model 1 of the table. A significant interaction term indicates that neuroticism significantly moderated (B = .002, t = 6.25, p < .001) the effect of adverse life events along with accounting for 24% of variance (R^2 = .24, F (3, 659) = 77.84, p < .001) in somatic complaints. Mod graph (Figure 91) elaborates this effect by suggesting that neuroticism booted the effect of adverse life events on somatic complaints. Slopes of the graph indicate that as the level of neuroticism increased the impact of adverse life events on somatic complaints intensified.

Model 2 reveals that extraversion also served as a significant moderator (B = -.001, t = -3.31, p < .01) with explaining 28% of variance (R^2 = .28, F (3, 659) = 123.88, p < .001) in somatic complaints. Mod graph (Figure 92) further illustrates these results by revealing

that extraversion buffered the relationship between experience of adverse life events and somatic complaints. Slopes indicate that increase in the level of extraversion weakened the effect of adverse life experiences.

A significant interaction term in model 3 depicts a significant moderation effect (B = -.001, t = -2.27, $p < .05$) for openness along with accounting for 7% of variance ($R^2 = .07$, F (3, 659) = 21.80, $p < .001$) in somatic complaints. Extending these findings, mod graph (Figure 93) elaborates that openness buffered the relationship between experience of adverse life events and somatic complaints. Slopes indicate that as the level of openness increased, the effect of adverse life experiences on somatic complaints minimized.

Values displayed in model 4 and 5 of the table reveal that agreeableness and conscientiousness did not account for significant moderation ($p > .05$) in the relationship between experience of adverse life events and somatic complaints.

Table 48

Moderating effect of Personality Traits on Academic Problems among Adolescents (N = 663)

Variable		Academic Problems				
		B	*SE B*	*t*	*P*	*95%CI*
Constant		18.38	.31	59.36	.000	[17.77, 18.98]
EALE		.04	.007	6.19	.000	[.03, .05]
NEU		.15	.04	3.77	.000	[.07, .23]
EALE × NEU		.005	.001	56.21	.000	[.004, .007]
R^2	.17					
F	39.46				.000	
Constant		18.05	.31	58.17	.000	[17.44, 18.66]
EALE		.03	.007	4.22	.000	[.02, .04]
EXT		-.32	.03	-9.98	.000	[-.38, -.26]
EALE × EXT		-.003	.001	-4.38	.000	[-..005, -.002]
R^2	.24					
F	94.87				.000	
Constant		15.06	.19	76.35	.000	[14.67, 15.45]
EALE		.05	.005	10.73	.000	[.04, .06]
OPEN		-.16	.02	-8.39	.000	[-.20, -.13]
EALE × OPEN		-.001	.0004	-1.20	.231	[-.001, .0003]
R^2	.45					
F	199.94				.000	
Constant		15.29	.18	83.77	.000	[14.93, 15.65]
EALE		.06	.004	15.41	.000	[.06, .07]
AGRE		-.10	.02	-4.94	.000	[-.14, -.06]
EALE × AGRE		-.001	.001	-.95	.343	[-.001, .001]
R^2	.41					
F	169.30				.000	
Constant		15.05	19	77.33	.000	[14.67, 15.43]
EALE		.05	.005	11.12	.000	[.04, .06]
CONS		-.17	.02	-8.67	.000	[-.21, -.13]
EALE × CONS		-.001	.0004	-1.32	.186	[-.001, .0003]
R^2	.46					
F	203.05				.000	

p>.05=Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, NEU = Neuroticism, EXT = Extraversion, OPEN = Openness, AGRE = Agreeableness, CONS = Conscientiousness

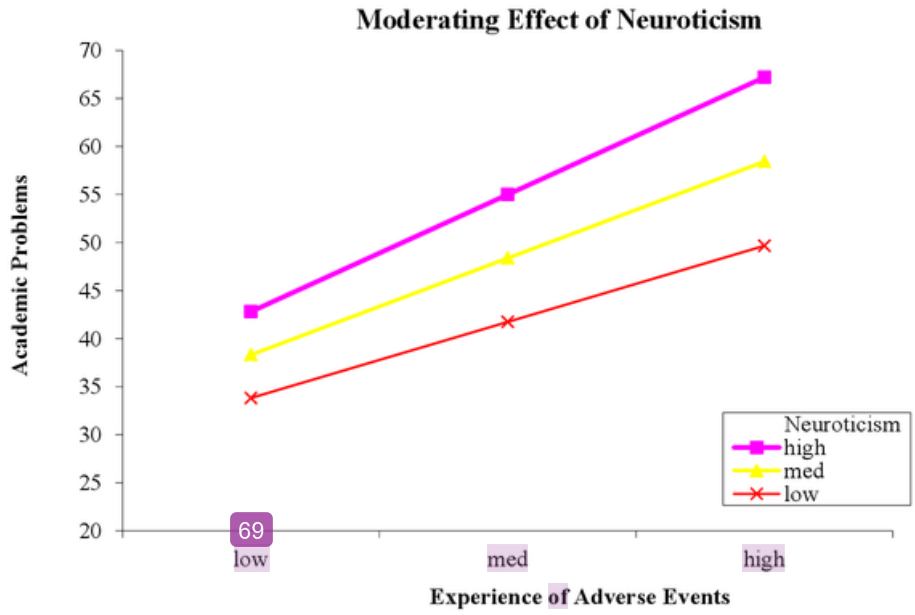

Figure 94. Moderating effect of neuroticism in predicting academic problems among adolescents

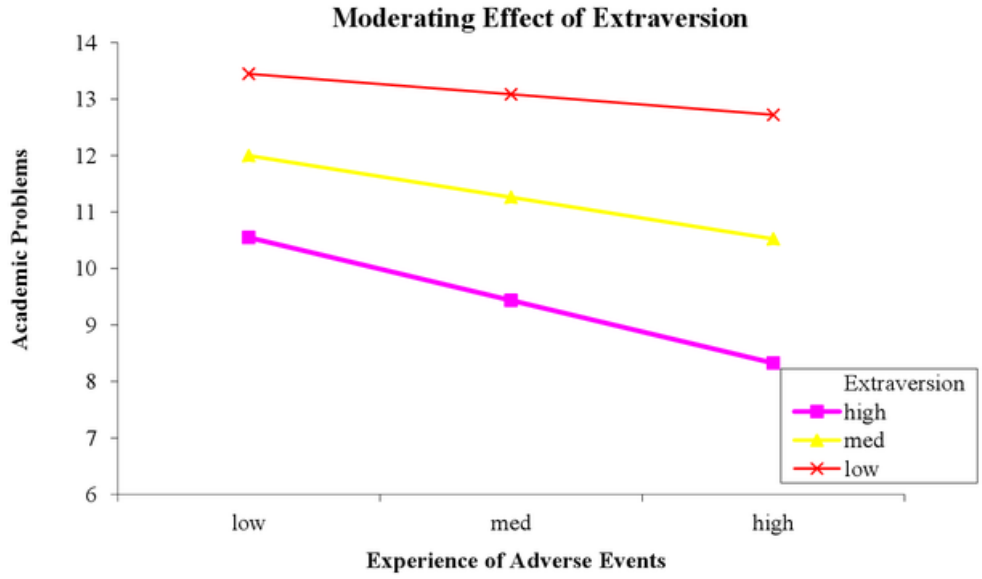

Figure 95. Moderating effect of extraversion in predicting academic problems among adolescents

Table 48 shows results for moderating role of personality traits in relationship between experience of adverse life events and academic problems among adolescents. Model 1 shows moderating effect of neuroticism. Interaction term suggest that neuroticism significantly moderated (B = .005, t = 6.21, p < .001) the effect of adverse life experience along with contributing 17% of variance (R^2 = .17, F (3, 659) = 39.46, p < .001) in academic problems. Mod graph (Figure 94) explicates these findings by suggesting that neuroticism boosted the relationship between experience of adverse life vents and academic problems. Slopes indicate that increase in the level of neuroticism exacerbated the effect of adverse life experiences on academic problems.

Extraversion also served as a significant moderator (B = -.003, t = -4.38, p < .001) and collectively, with experience of adverse life events, explained 24% variance (R^2 = .24, F (3, 659) = 94.87, p < .001) in academic problems. Mod graph (Figure 95) further elucidates this effect by suggesting that extraversion buffered the relationship between experience of adverse life events and academic problems. Slopes of the graph depict that as the level of extraversion increased, it alleviated the effect of adverse life experiences.

Values of model 3, 4, and 5 indicate that openness, agreeableness and conscientiousness did not produced significant moderation (p > .05) in the relationship between experience of adverse life events and academic problems.

Table 49

Moderating effect of Personality Traits on Feelings of Rejection among Adolescents (N = 663)

Variable		Feelings of Rejection				
		B	*SE B*	*t*	*P*	*95%CI*
Constant		9.84	.19	51.51	.000	[9.47, 10.22]
EALE		.02	.004	5.22	.000	[.01, .03]
NEU		.16	.02	7.68	.000	[.12, .19]
EALE × NEU		.002	.001	4.58	.000	[.001, .003]
R^2	.20					
F	59.77				.000	
Constant		19.29	.52	36.94	.000	[18.26, 20.31]
EALE		.04	.01	3.34	.000	[.01, .06]
EXT		-.31	.04	-6.99	.000	[-.39, -.22]
EALE × EXT		-.005	.001	-4.58	.000	[-.007, -.003]
R^2	.18					
F	63.35				.000	
Constant		20.19	.48	41.66	.000	[19.23, 21.14]
EALE		.05	.01	4.62	.000	[.03, .07]
OPEN		-.25	.05	-5.58	.000	[-.34, -.16]
EALE × OPEN		-.008	.001	-9.18	.000	[-.01, -.006]
R^2	.21					
F	82.15				.000	
Constant		19.59	.47	41.92	.000	[18.67, 20.51]
EALE		.08	.01	9.09	.000	[.06, .10]
AGRE		-.01	.05	-.15	.879	[-.09, .11]
EALE × AGRE		-.008	.001	-6.75	.000	[-.01, -.005]
R^2	.15					
F	54.04				.000	
Constant		19.94	50	39.66	.000	[18.96, 20.93]
EALE		.07	.01	6.61	.000	[05, .09]
CONS		-.13	.05	-2.88	.004	[-.22, -.04]
EALE × CONS		-.007	.001	-7.94	.000	[-.01, -.005]
R^2	.18					
F	68.28				.000	

p>.05= Non-significant, ***p* < .001

Note: EALE = Experience of Adverse Life Event, NEU = Neuroticism, EXT = Extraversion, OPEN = Openness, AGRE = Agreeableness, CONS = Conscientiousness

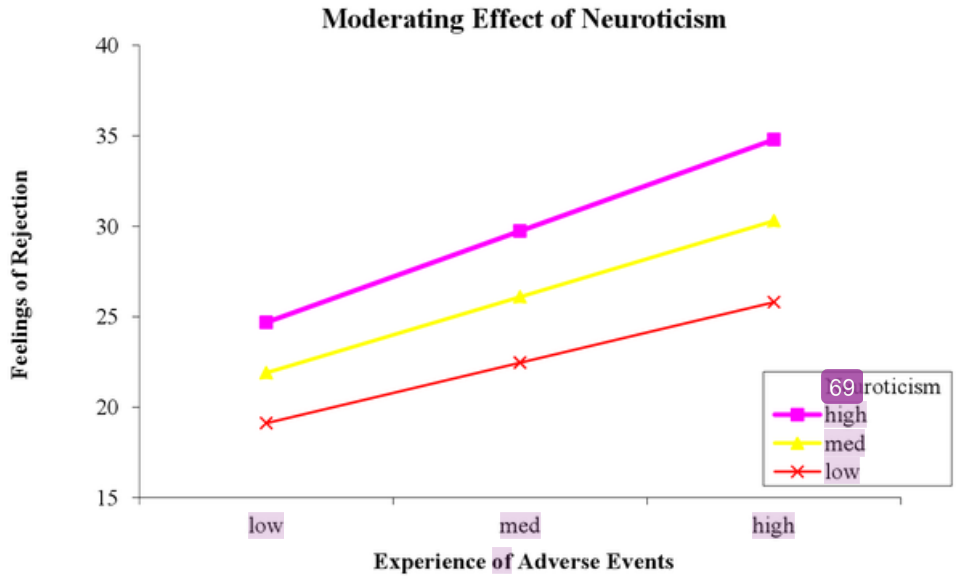

Figure 96. Moderating effect of neuroticism in predicting feelings of rejection among adolescents

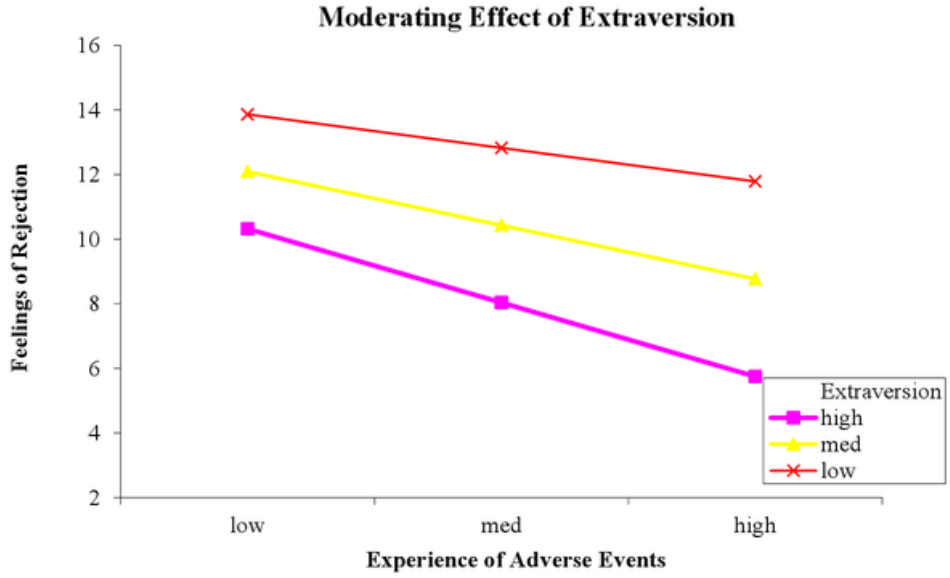

Figure 97. Moderating effect of extraversion in predicting feelings of rejection among adolescents

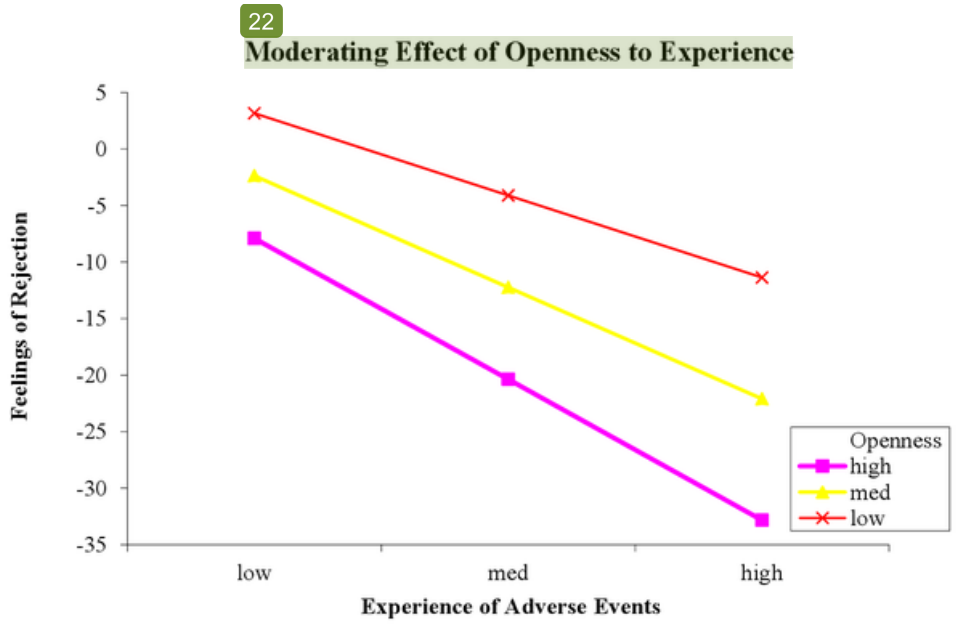

Figure 98. Moderating effect of openness to experience in predicting feelings of rejection among adolescents

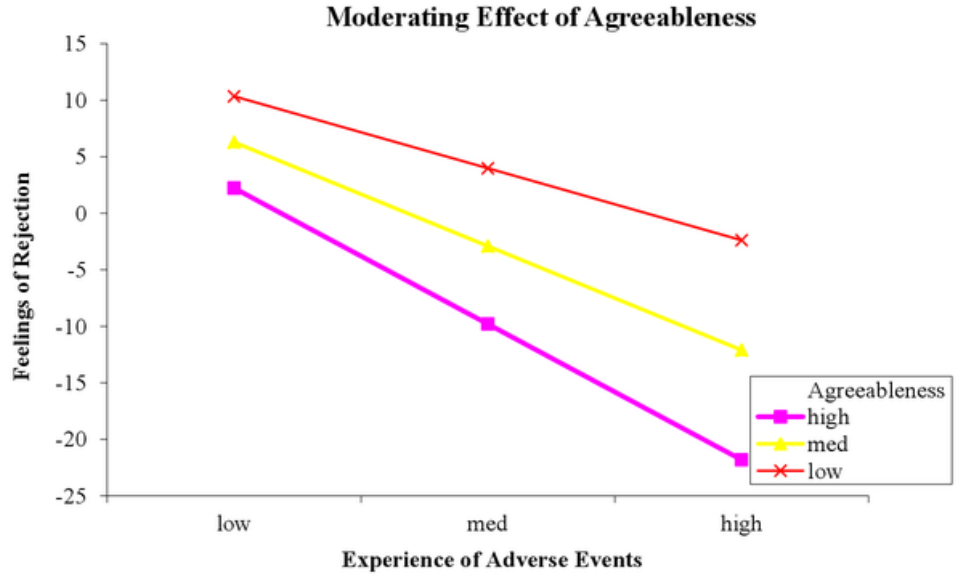

Figure 99. Moderating effect of agreeableness in predicting feelings of rejection among adolescents

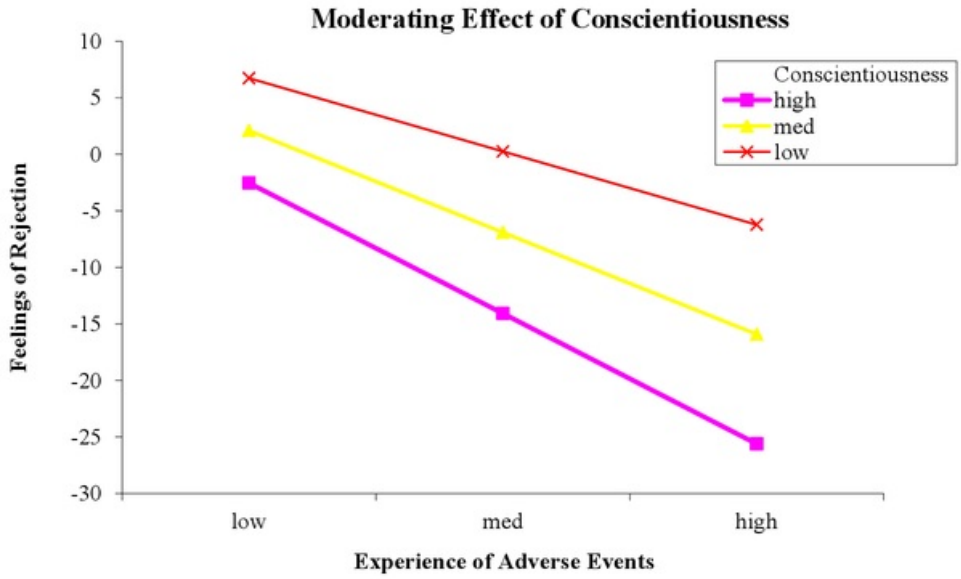

Figure 100. Moderating effect of conscientiousness in predicting feelings of rejection among adolescents

Table 49 displays results for moderating role of personality traits in relationship between experience of adverse life events and feelings of rejection among adolescents. Model 1 of the table shows moderating effect of neuroticism. Values of interaction term indicate that neuroticism significantly moderated (B = .002, t = 4.58, p < .001) the effect of adverse life experiences along with contributing 20% of (R^2 = .20, F (3, 659) = 59.77, p < .001) variance in feelings of rejection among adolescents. Mod graph (Figure 96) elaborates these findings by suggesting that neuroticism boosted the relationship between experience of adverse life events and feelings of rejection among adolescents. Slopes of the graph indicate that as the level of neuroticism increased the effect of adverse life experiences also escalated.

Extraversion also significantly moderated (B = -.005, t = -4.58, p < .001) the effect of adverse life experiences along with contributing 18% of variance (R^2 = .18, F (3, 659) = 65.35, p < .001) in feelings of rejection. Making this effect evident, interaction plot (Figure

97) indicates that extraversion buffered the effect of adverse life experiences on feelings of rejection. Slopes depict that increase in the level of extraversion alleviated the effect of adverse life events.

Values of model 3 in the tables reveal that openness also significantly moderated (B = -.008, t = -9.18, p < .001) the effect of adverse life experiences with explaining 21% of variance (R^2 = .21, F (3, 659) = 82.15, p < .001) in feelings of rejection. Mod graph (Figure 98) explicates these results by showing that openness buffered the relationship between experiences of adverse life events and feelings of rejection among adolescents. Slopes indicate that as the level of openness increased it alleviated the impact of adverse life events.

Agreeableness also served as a significant moderated (B = -.008, t = -6.75, p < .001) and collectively, with experience of adverse events, explained 15% variance (R^2 = .15, F (3, 659) = 54.04, p < .001) in feelings of rejection. Mod graph (Figure 99) further illustrates these findings and suggests that agreeableness weakened the relationship between experience of adverse life events and feelings of rejection among adolescents. Slopes of the graph depict that agreeableness attenuated the effect of adverse life experiences on anxiousness. Slopes depict that as the level of openness increased, the effect of adverse life events got faded.

Conscientiousness, as depicted in model 5 of the table, also showed a significant moderation (B = -.007, t = -7.94, p < .001). Values show that conscientiousness and experience of adverse life events collectively produced 18% of variance (R^2 = .18, F (3, 659) = 68.28, p < .001) in feelings of rejection. Mod graph (Figure 100) illustrates these findings and shows that agreeableness buffered the effect of adverse life experiences on feelings of rejection among adolescents. Slopes indicate that increase in conscientiousness decreases the effect of adverse life experiences.

Table 50

Means, SDs and t values of Study Variables based on Gender (N=663)

	Boys (*n* = 435)		Girls (*n* = 228)					95%CI		
Variables	M	SD	M	SD	*t*	*df*	*p*	*LL*	*UL*	*Cohen's d*
IALE	100.22	44.21	112.36	40.57	-3.54	661	.000	-19.04	-5.24	.29
ANX	19.53	8.04	32.19	10.55	-15.86	661	.000	-14.23	-11.09	1.35
AGG	23.30	6.26	22.61	4.45	1.48	661	.101	-.22	1.61	.13
SW	12.99	4.68	18.79	5.53	-13.49	661	.000	-6.63	-4.95	1.13
SC	6.62	2.99	9.92	3.42	-12.95	661	.000	-3.82	-2.77	1.03
AP	15.90	7.69	20.77	7.36	-7.97	661	.000	-6.07	-3.67	.65
FR	7.63	3.67	13.11	4.96	-14.73	661	.000	-6.22	-4.75	1.26
VOC	19.41	9.19	23.80	10.37	5.58	661	.000	2.84	5.93	.45
VR	9.97	3.27	11.09	3.55	4.08	661	.000	.58	1.67	.33
NUM	21.56	7.62	19.85	7.22	2.84	661	.005	.53	2.89	.23
GK	18.28	5.54	17.05	5.36	2.78	661	.006	.36	2.10	.23
NVA	31.06	5.86	27.14	8.86	6.02	661	.000	2.78	5.04	.52
CATA	12.78	4.63	19.36	7.78	-11.72	661	.000	-7.68	-5.47	1.03
PERS	14.98	5.13	22.47	7.74	-13.18	661	.000	-8.61	-6.37	1.41
SA	12.89	4.47	17.91	6.41	-10.57	661	.000	-5.96	-4.09	1.07
OG	12.43	4.69	20.15	8.34	-12.95	661	.000	-8.89	-6.55	1.14
SC	5.14	.59	4.63	.64	10.11	661	.000	.42	.62	.83
BO	4.77	.82	4.14	.81	9.49	661	.000	.50	.76	.77
ML	1.58	.46	1.36	.33	6.92	661	.000	.15	.28	.55
AW	1.59	.42	1.31	.29	6.95	661	.000	.14	.25	.78
NEU	35.68	9.46	43.65	8.42	-11.09	661	.000	-9.39	-6.56	.89
EXT	16.23	2.73	14.58	2.86	7.11	661	.000	1.19	2.11	.59
OPEN	36.23	7.11	31.71	7.35	7.54	661	.000	3.34	5.69	.63
AGRE	36.65	7.75	36.24	8.88	.59	661	.542	-.90	1.72	.05
CONS	40.82	7.19	37.53	9.80	4.48	661	.000	1.85	4.74	.38

***p<.001, **p<.01

Note: IALE=Impact of Adverse Life Events, ANX=Anxiety, AGG=Aggression, SW=Social Withdrawal, SC=Somatic Complaints, FR=Feeling of Rejection, AP=Academic Problems, VOC= Vocabulary, VR=Verbal Reasoning, NA=Numerical Ability, GK=General Knowledge, NVA Nonverbal Ability, CATAS=Catastrophizing, PERS=Personalization, SA=Selective Abstraction, OG=Over Generalization, AW=Assuming the Worst, BO=Blaming others, SC=Self-Centered, ML=Mislabeling, AR=Anomalous Response, PF=Positive Filters, NEU=Neuroticism, EXTR=Extraversion, OPEN=Openness, AGRE=Agreeableness, CONS=Conscientiousness

Table 50 shows gender differences for all the study variables. Values in the table indicate that impact of adverse life events was significantly higher on girls as compared to boys (p = .001). Similarly girls showed significantly higher level of emotional and behavioral problems as compared to boys except aggression. For aggression, no significant gender differences emerged in the sample. For cognitive abilities, boys showed

significantly higher level of numerical ability, general knowledge, and nonverbal cognitive ability as compared to girls ($p < .01, .001$) whereas girls scored significantly higher on vocabulary and verbal reasoning skills. As far cognitive errors are concerned, girls committed significantly greater number of ($p < .001$) self-debasing cognitive errors (i.e. catastrophizing, personalization, selective abstraction and over generalization) than boys whereas boys had higher levels of self-serving cognitive errors (self-centeredness, blaming other, mislabeling, assuming the worst) as compared to girls ($p < .001$). On personality traits, girls showed significantly high level of neuroticism whereas boys significantly differed from girls with higher levels of extraversion, openness and conscientiousness ($p < .001$). On agreeableness, no significant differences occurred between the two groups.

Table 51 below shows group differences on all the study variables based on family system. Values indicate that impact of adverse life events was significantly greater on adolescents for joint family system as compared to those from nuclear family system ($p < .05$). Results further reveal that adolescents from joint family system had significantly higher levels of emotional and behavioral problems i.e. anxiousness, aggression, social withdrawal and feelings of rejection ($p < .05$) than those from nuclear family system. However for somatic complaints and academic problems, no significant differences emerged between the two groups. For cognitive abilities, nuclear family system group showed significantly higher level of all types of verbal and nonverbal cognitive abilities (i.e. vocabulary, verbal reasoning, general knowledge, and nonverbal ability) as compared to their counterparts ($p < .01, .05$) except numerical ability which showed no significant differences across groups. Regarding cognitive errors, adolescents with joint family system committed significantly greater number of ($p < .001, .01$) self-debasing cognitive errors (i.e. catastrophizing, personalization, selective abstraction and over generalization) than those from nuclear family system whereas no significant differences emerged ($p > .05$) on

self-serving cognitive errors (self-centeredness, blaming other, mislabeling, assuming the worst) across groups. Similarly, personality traits did not account for significant differences between adolescents from nuclear or joint family system ($p > .05$).

Table 51

Means, SDs and t values of Study Variables based on Family System (N=663)

Variables	Nuclear (n = 311) M	Nuclear (n = 311) SD	Joint (n = 348) M	Joint (n = 348) SD	*t*	*df*	*p*	95%CI LL	95%CI UL	*Cohen's d*
IALE	99.90	42.32	108.38	43.95	-2.52	657	.012	-15.08	-1.88	.20
ANX	22.85	10.94	24.80	10.67	-2.31	657	.021	-3.61	-.29	.18
AGG	22.51	5.62	23.59	5.77	-2.43	657	.015	-1.95	-.21	.19
SW	14.47	5.77	15.43	5.62	-2.17	657	.030	-1.84	-.09	.17
SC	7.49	3.48	8.02	3.53	-1.95	657	.051	-1.07	.003	.15
AP	17.42	7.65	17.79	8.18	-.59	657	.550	-1.59	.85	.05
FR	9.14	4.87	9.91	4.91	-2.01	657	.045	-1.52	-.02	.16
VOC	23.80	9.95	20.92	10.24	3.67	657	.000	1.34	4.43	.29
VR	11.11	3.40	10.35	3.53	2.78	657	.006	.22	1.28	.22
NUM	21.45	7.41	20.54	7.62	1.54	657	.124	-.25	2.06	.12
GK	18.57	5.24	17.20	5.66	3.42	657	.001	.54	2.21	.25
NVA	30.38	7.37	29.11	7.18	2.23	657	.026	.15	2.38	.17
CATA	14.01	6.47	16.05	6.71	-3.97	657	.000	-3.05	-1.03	.31
PERS	16.54	6.92	18.51	7.18	-3.57	657	.000	-3.04	-.88	.28
SA	13.73	5.45	15.45	5.88	-3.91	657	.000	-2.59	-.86	.30
OG	14.22	6.87	15.91	7.41	-3.03	657	.002	-2.79	-.60	.24
SC	4.99	.64	4.95	.68	.89	657	.372	-.06	.15	.06
BO	4.61	.85	4.49	.86	1.82	657	.069	-.01	.25	.14
ML	1.53	.45	1.48	.41	1.28	657	.200	-.02	.11	.12
AW	1.43	.41	1.44	.38	-.41	657	.679	-.07	.05	.03
NEU	38.34	9.95	38.51	9.86	-.22	657	.828	-1.68	1.35	.02
EXT	15.54	2.96	15.79	2.81	-1.09	657	.276	-.69	.19	.09
OPEN	34.20	7.60	35.15	7.42	-1.61	657	.107	-2.10	.21	.13
AGRE	36.00	8.06	39.94	8.36	-1.49	657	.138	-2.19	.31	.48
CONS	39.25	8.16	40.03	8.50	-1.19	657	.235	-2.05	.50	.09

*$p<.05$

Note: IALE=Impact of Adverse Life Events, ANX=Anxiety, AGG=Aggression, SW=Social Withdrawal, SC=Somatic Complaints, AP=Academic Problems, FR=Feeling of Rejection, VOC= Vocabulary, VR=Verbal Reasoning, NA=Numerical Ability, GK=General Knowledge, NVA Nonverbal Ability, CATAS=Catastrophizing, PERS=Personalization, SA=Selective Abstraction, OG=Over Generalization, AW=Assuming the Worst, BO=Blaming others, SC=Self-Centered, ML=Mislabeling, AR=Anomalous Response, PF=Positive Filters, NEU=Neuroticism, EXTR=Extraversion, OPEN=Openness, AGRE=Agreeableness, CONS=Conscientiousness

Table 52

Age-wise Comparison on Nonverbal Cognitive Ability and Impact of Adverse Life Events (N = 663)

	Early (N=105)		Middle (N=416)		Late (N=142)					Mean		95% CI	
	M	*SD*	*M*	*SD*	*M*	*SD*	F	η^2	i-j	(i-j)	SE	LL	UL
NVA	27.57	9.31	30.26	6.36	30.42	7.03	8.03**	.02	E<M	2.69**	.70	1.05	4.34
									E<L	2.85**	.93	.67	5.02
IALE	102.62	41.58	115.09	45.88	96.94	44.54	6.32**	.02	E<M	12.47**	4.18	2.66	22.29
									M>L	18.15**	5.54	5.15	31.15

**$p<.01$; $p<.001$

Note: NVA = Nonverbal Ability; ISLE = Impact of Adverse Life Events

Table 53

Income-wise Comparison on Nonverbal Cognitive Ability and Impact of Adverse Life Events (N = 585)

	Low (N=167)		Middle (N=234)		High (N=184)					Mean		95% CI	
	M	*SD*	*M*	*SD*	*M*	*SD*	F	η^2	i-j	(i-j)	SE	LL	UL
NVA	29.88	6.01	30.38	5.62	30.58	6.24	.68	.002					
IALE	109.53	44.34	101.76	40.72	96.40	41.51	4.30*	.02	L>H*	13.13	4.49	2.57	23.68

*$p<.05$

Note: NVA = Nonverbal Ability; IALE = Impact of Adverse Life Events

Table 52 shows results of univariate analysis to find out mean differences on nonverbal cognitive ability and impact of adverse life events between early, middle, and late adolescents. Mean values show that significant group differences occurred on nonverbal cognitive ability (F (2,660) = 8.03, p<.001) between early middle and late adolescence groups. A post-hoc analysis was further computed to find out within-group differences and the findings revealed that the level of nonverbal ability was significantly lower (p<.001) in early adolescence group as compared to middle and late age adolescents; whereas no significant differences emerged between middle and late adolescence groups. The table further shows results for impact of adverse life events on early, middle, and late adolescence groups; and the values demonstrate significant group differences as F(2, 660) = 6.32, p<.001. A post-hoc analysis was further computed to explore within-group differences which revealed that middle age group showed significantly higher level of the impact of adverse life events as compared to early and late adolescence groups (p<.01); however, there are no significant differences on impact of adverse life events between early and late age groups.

Table 53 shows results of univariate analysis to find out mean differences on nonverbal cognitive ability and impact of adverse life events between low, middle, and high income groups of adolescents. Mean values indicate that no significant differences occurred on nonverbal cognitive ability between each of the income group. For impact of adverse life events, univariate analysis showed significant differences across three groups of income (F(2, 582) = 4.30, p<.05). A post-hoc analysis was further carried out to explore within-group differences which revealed that low income group had significantly higher level of the impact of adverse life events as compared to high income groups (p<.01); however, there no significant differences emerged between low and middle and middle and high income groups.

Table 54

Means and Standard Deviations and Summary Statistics for Multivariate Analysis of Age for Study Variables (N = 663)

	Early (n=105)		Middle (n=416)		Late (n=142)				
	M	SD	M	SD	M	SD	λ	η²	F
SCPS							.89**		
ANX	21.61	9.15	25.90	11.49	19.66	7.99		.06	21.70**
AGG	21.23	5.22	23.66	5.87	22.67	5.26		.02	8.21**
SW	13.81	4.93	15.83	5.91	13.37	5.06		.04	13.06**
SC	7.26	3.21	8.34	3.63	6.41	2.93		.05	18.13**
AP	14.98	7.28	19.21	8.37	14.72	5.34		.07	25.42**
FR	8.09	4.62	10.55	5.14	7.55	3.28		.08	27.09**
VA							.96**		
VOC	20.33	10.36	22.69	9.85	23.34	11.04		.01	3.53*
VR	9.84	3.64	10.88	3.38	11.20	3.56		.02	6.03**
NUM	18.64	7.36	21.65	7.38	21.40	7.77		.03	8.90**
GK	16.92	5.36	18.07	5.53	18.27	5.52		.01	2.71
CNCEQ							.88**		
CATA	15.61	6.62	15.95	6.72	11.97	5.65		.06	20.32**
PERS	17.68	6.30	18.43	7.39	14.91	6.11		.04	13.53**
SA	15.22	5.70	14.79	5.71	13.66	5.74		.01	2.75
OG	14.96	6.55	16.21	7.57	11.87	5.36		.06	20.34**
HIT-Q							.92**		
SC	4.88	.59	4.91	.72	5.19	.46		.03	10.88**
BO	4.37	.85	4.54	.92	4.74	.68		.02	5.53**
ML	1.44	.40	1.54	.47	1.45	.32		.01	3.72*
AW	1.40	.42	1.42	.38	1.48	.40		.004	1.43
NEO-FFI							.91**		
NEU	38.50	7.78	38.10	11.16	38.94	7.16		.001	.38
EXT	16.37	2.69	15.16	2.75	16.64	3.09		.05	18.13**
OPEN	35.54	6.78	34.23	8.07	37.05	6.94		.01	2.80
AGRE	36.92	8.66	36.00	8.38	37.05	6.94		.003	1.14
CONS	40.75	7.93	38.45	8.46	42.96	6.99		.05	16.84**

**$p<.001$, non-sig. = $p>.05$

Note: SCPS = School Children Problem Scale, ANX = Anxiety, AGG = Aggression, SW = Social Withdrawal, SC = Somatic Complaints, FR = Feelings of Rejection, AP = Academic Problems, VA = Verbal Ability, VOC = Vocabulary, VR = Verbal Reasoning, NA = Numerical Ability, GK = General Knowledge, CNCEQ = Children Negative Cognitive Errors Questionnaire, CATA = Catastrophizing, PERS = Personalization, SA = Selective Abstraction, OG = Over Generalization, HIT-Q = How I Think Questionnaire, SC = Self-Centeredness, BO = Blaming Others, ML = Mislabeling, AW = Assuming the Worst, NEO-FFI = Neuroticism Extraversion Openness-Five Factor Inventory, NEU = Neuroticism, EXT = Extraversion, OPEN = Openness, AGRE = Agreeableness, CONS = Conscientiousness

One-way multivariate analyses of variance were computed (Table 54) to examine mean differences between different age groups (early, middle and late adolescence) on study variables including emotional and behavioral problems, verbal cognitive abilities, cognitive errors and personality traits. Model 1 of the table shows statistically significant age differences on emotional and behavioral problems $F(12, 1310) = 6.47$, $p < .001$; $\lambda = .89$, partial $\eta^2 = .06$. Separate univariate analyses further confirmed these significant differences ($p < .01$) between early, middle and late adolescence on anxiousness $F(2, 660) = 21.70$, $p < .001$, aggression $F(2, 660) = 8.21$, $p < .001$, social withdrawal $F(2, 660) = 13.06$, $p < .001$, somatic complaints $F(2, 660) = 18.13$, $p < .001$, academic problems $F(2, 660) = 25.42$, $p < .001$ and feelings of rejection $F(2, 660) = 27.09$, $p < .001$.

Model 2 displays results of significant multivariate effects of age on verbal cognitive abilities among adolescents $F(8, 1314) = 3.52$, $p < .001$; $\lambda = .96$, partial $\eta^2 = .02$. Separate univariate analyses further endorsed these results by suggesting significant differences on vocabulary $F(2, 660) = 3.53$, $p < .05$, verbal reasoning $F(2, 660) = 6.03$, $p < .01$, and numerical ability $F(2, 660) = 8.90$, $p < .001$ among early, middle and late adolescence age groups. However univariate analysis suggested a non-significant effect of age on general knowledge $F(2, 660) = 21.70$, $p < .001$ across three groups.

Model 3 of the table reveals significant difference on self-debasing cognitive errors ($F(8, 1314) = 10.54$, $p < .001$; $\lambda = .88$, partial $\eta^2 = .06$) between early, middle and late adolescence groups. Univariate test further confirmed these results and revealed significant age differences on each of the cognitive errors i.e. catastrophizing $F(2, 660) = 20.32$, $p < .001$, personalization $F(2, 660) = 13.53$, $p < .001$, and overgeneralization $F(2, 660) = 24.34$, $p < .001$. However no significant age differences were observed on selective abstraction $F(2, 660) = 2.75$, $p > .05$ between any of the groups.

Age differences for self-serving cognitive errors are given in model 4 of the table. Values reveal significant overall effect of age on self-serving cognitive errors $F(8, 1314) = 7.43$, $p < .001$; $\lambda = .92$, partial $\eta^2 = .04$. Separate univariate test supported these findings and revealed significant differences on self-centeredness $F(2, 660) = 10.88$, $p < .001$, blaming other $F(2, 660) = 5.53$, $p < .01$, and mislabeling $F(2, 660) = 3.72$, $p < .05$ between early, middle and late adolescence groups. However age did not contribute for any significant difference for assuming the worst $F(2, 660) = 1.43$, $p > .05$ between any of the groups.

Last model of the table reveals multivariate effect of age for personality traits. Values in the model suggest a significant overall effect of age on personality traits $F(10, 1288) = 6.34$, $p < .001$; $\lambda = .91$. However univariate analysis showed significant mean difference only for extraversion $F(2, 648) = 18.13$, $p < .001$ and conscientiousness $F(2, 648) = 16.48$, $p < .001$ across different age groups whereas no significant age differences occurred for neuroticism, openness and agreeableness.

Table 55

Post Hoc Analyses for Mean Differences in Emotional and Behavioral problems across different Age Groups (N = 663)

Variables	(I) Age Group	(J) Age Group	Mean Difference	S.E.	*p*	95% CI LL	95% CI UL
ANX	Early	Middle	-4.29	1.15	.001	-6.98	-1.60
		Late	1.95	1.35	.319	-1.22	5.12
	Middle	Late	6.24	1.02	.000	3.85	8.64
AGG	Early	Middle	-2.43	.62	.000	-3.88	-.98
		Late	-1.44	.72	.118	-3.15	.27
	Middle	Late	.99	.55	.168	-.30	2.28
SW	Early	Middle	-2.02	.61	.003	-3.46	-.59
		Late	.44	.72	.812	-1.25	2.13
	Middle	Late	2.47	.54	.000	1.19	3.74
SC	Early	Middle	-1.08	.37	.011	-1.96	-.20
		Late	.85	.44	.132	-.19	1.88
	Middle	Late	1.93	.33	.000	1.15	2.71
AP	Early	Middle	-4.23	.84	.000	-6.19	-2.26
		Late	.26	.98	.962	-2.05	2.57
	Middle	Late	4.49	4.49	.000	2.74	6.23
FR	Early	Middle	-2.46	.52	.000	-3.67	-1.25
		Late	.54	.61	.651	-.89	1.96
	Middle	Late	3.00	.46	.000	1.92	4.08

$p<.001$, $**p<.01$, $*p<.05$, $p>.5$ = non-sing

Note: CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit, S.E. = Standard Error, ANX = Anxiety, AGG = Aggression, SW = Social Withdrawal, SC = Somatic Complaints, FR = Feelings of Rejection

Table 55 highlights Tukey HSD post hoc findings for differences between different age groups on emotional and behavioral problems. Values indicate that mean scores of anxiousness were statistically significantly different between early and middle groups of adolescents ($p < .01$) and between early and late groups ($p < .001$) but not between middle and late age groups ($p > .05$). For aggression, significant mean differences were found

between early and middle adolescents ($p < .001$) but not between early and late groups or between middle and late adolescence groups ($p > .05$). On social withdrawal, mean difference were significant between early and middle adolescence groups ($p < .01$) and between early and late adolescence group ($p < .001$) whereas no significant differences emerged between middle and late adolescence groups ($p > .05$). Post hoc table shows significant age differences for somatic complaints also. Values show that somatic complaints significantly differed between early and middle adolescence groups ($p < .05$) and between middle and late age groups ($p < .001$) but not between early and late age groups ($p > .05$). As far academic problems are concerned, statistically significant age differences occurred between early and middle adolescence ($p < .001$) and between middle and late adolescence age groups ($p < .001$). However early and late age groups did not differ significantly on academic problems ($p > .05$). Similar pattern occurred for feelings of rejection as significant differences were shown between early and middle adolescence groups ($p < .001$) and between middle and late adolescence groups ($p < .001$) but not between early and late age groups ($p > .05$). These findings can be illustrated through Table 54 which clearly shows that middle adolescence group showed greater numbers of all types of emotional and behavioral problems as compared to early and late adolescence groups.

Table 56

Post Hoc Analyses for Mean Differences Verbal Cognitive Abilities across different Age Groups (N = 663)

Variables	(I) Age Group	(J) Age Group	Mean Difference	S.E.	*p*	95% CI LL	95% CI UL
VOC	Early	Middle	-2.36	.99	.045	.04	4.68
		Late	-.3.01	1.31	.056	-.06	6.08
	Middle	Late	-.65	1.11	.827	-1.95	3.26
VR	Early	Middle	-1.04	.34	.006	-1.83	-.25
		Late	-1.36	.45	.007	.25	1.83
	Middle	Late	-.32	.38	.675	-1.21	.57
NA	Early	Middle	-3.01	.72	.000	1.32	4.71
		Late	-2.76	.96	.011	.51	5.01
	Middle	Late	.25	.81	.95	-2.16	1.65

p<.001, **p*<.01, **p*<.05, *p*>.5 = non-sing

Note: CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit, S.E. = Standard Error, VOC = Vocabulary, VR = Verbal Reasoning, NA = Numerical Ability

Table 56 presents findings of Post Hoc test regarding mean differences on verbal cognitive abilities between early, middle and late adolescence groups. Results suggest that early and middle age groups significantly differed on vocabulary ($p < .05$) whereas no significant differences occurred between early and late age groups ($p > .05$) and middle and late age groups of adolescence ($p > .05$). For verbal reasoning, significant mean differences emerged between early and middle group ($p < .01$) and middle and late age groups ($p < .01$) of adolescents while differences between middle and late age groups were non-significant ($p > .05$). Similar trends of differences were shown for numerical ability as significant age differences occurred on numerical ability between early and middle age groups ($p < .001$) and between early and late age groups ($p < .05$) of adolescents while no significant difference were explained between middle and late groups of adolescents ($p > .05$).

Table 57

Post Hoc Analyses for Mean Differences on Self-Debasing Cognitive Errors across different Age Groups (N = 663)

Variables	(I) Age Group	(J) Age Group	Mean Difference	S.E.	*p*	95% CI LL	95% CI UL
CATA	Early	Middle	-.34	.71	.883	-2.00	1.33
		Late	3.64	.84	.000	1.67	5.60
	Middle	Late	3.98	.63	.000	2.49	5.46
PERS	Early	Middle	-.76	.76	.581	-2.55	1.03
		Late	2.77	.89	.006	.66	4.88
	Middle	Late	3.52	.68	.000	1.93	5.12
OG	Early	Middle	-1.24	.76	.234	-3.04	.55
		Late	3.09	.90	.002	.97	5.20
	Middle	Late	4.33	.68	.000	2.74	5.93

$p<.001$, $**p<.01$, $*p<.05$, $p>.5$ = non-sing

Note: CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit, S.E. = Standard Error, VOC = CATA = Catastrophizing, PERS = Personalization, OG = Over Generalization

Table 57 provides results of Post Hoc test concerning age differences on self-debasing cognitive errors between early, middle and late adolescence groups. Values suggest significant age differences on catastrophizing between early and late adolescence groups ($p < .001$) and between middle and late age groups ($p < .001$) whereas no significant differences were found between early and middle adolescence groups ($p > .05$). Similar findings were observed for personalization. Values reveal significant differences between early and late adolescence groups ($p < .001$) and between middle and late age groups ($p < .001$) but not between early and middle age group early and late adolescence groups ($p < .001$) and between middle and late age groups ($p > .05$) of adolescents. Last model of the table highlights mean differences of age for over generalization. Values suggest that scores of over generalization were significantly different between early and late adolescence ($p < .001$) and between middle and late adolescence groups ($p < .001$) but

not between early and middle age groups ($p > .05$). Recalling mean scores reported in Table (54), values clearly indicate that middle adolescence group committed greater number of all types of self-debasing cognitive errors as compared to early and late adolescence age groups.

Table 58

Post Hoc Analyses for Mean Differences on Self-Serving Cognitive Errors across different Age Groups (N = 663)

Variables	(I) Age Group	(J) Age Group	Mean Difference	S.E.	*p*	95% CI	
						LL	UL
SC	Early	Middle	-.03	.07	.92	-.19	.14
		Late	-.31	.08	.001	-.50	-.11
	Middle	Late	-.28	.06	.000	-.43	-.13
BO	Early	Middle	-.17	.09	.185	-.39	.06
		Late	-.36	.11	.003	-.63	-.10
	Middle	Late	-.19	.08	.049	-.39	-.0004
ML	Early	Middle	-.101	.05	.084	-.21	.01
		Late	-.01	.06	.978	-.14	.11
	Middle	Late	.09	.04	.083	-.01	.19

$p<.001$, $**p<.01$, $*p<.05$, $p>.5$ = non-sing

Note: CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit, S.E. = Standard Error, SC = Self-Centeredness, BO = Blaming Others, ML = Mislabeling

Table 58 displays findings of Post Hoc test for mean differences on self-serving cognitive errors between early, middle and late adolescence groups. Values in the table highlight a statistically significant difference on self-centeredness between early and late adolescence groups ($p < .01$) and between middle and late age groups ($p < .001$) but there is a non-significant difference between early and middle groups of adolescence ($p > .05$). Similar difference pattern was found for blaming others as there is significant difference on this error between early and late adolescence groups ($p < .01$) and between middle and late age groups ($p < .05$) but not between early and middle groups of adolescence ($p >$

.05). For mislabeling no significant differences were observed between either of the age groups ($p > .05$). Mean values reported in Table 54 illustrate that self-centeredness and blaming others were higher in the late adolescence group than early or middle adolescence groups.

Table 59

Post Hoc Analyses for Mean Differences in Personality Traits across different Age Groups (N = 663)

Variables	(I) Age Group	(J) Age Group	Mean Difference	S.E.	*p*	95% CI	
						LL	UL
EXT	Early	Middle	1.22	.31	.000	.49	1.94
		Late	-.27	.37	.744	-1.13	.59
	Middle	Late	-1.48	.28	.000	-2.14	-.83
CONS	Early	Middle	2.30	.89	.026	.22	4.38
		Late	-2.21	1.05	.090	-4.68	.26
	Middle	Late	-4.51	.80	.000	-6.40	-2.63

***p*<.001, ***p*<.01, **p*<.05, *p*>.5 = non-sing

Note: CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit, S.E. = Standard Error, EXT = Extraversion, CONS = Conscientiousness

Table 59 demonstrates findings of Post Hoc test regarding mean difference on personality traits between early, middle and late adolescence age groups. Results show significant differences for extraversion between early and middle adolescence groups ($p < .001$) and between middle and late adolescence groups ($p < .001$) but no significant differences were found between early and late ($p > .05$) age groups. Similar trend was observed for conscientiousness as there are significant mean differences between early and middle adolescence groups ($p < .001$) and between middle and late adolescence groups ($p < .001$) but not between early and late ($p > .05$) age groups. Mean values in Table 54 shows that early and late adolescence groups showed higher level of extraversion and conscientiousness as compared to middle age groups whereas no visible difference were found between early and late adolescence groups.

Table 60

Means and Standard Deviations and Summary Statistics for Multivariate Analysis of for Study Variables based on Income (N = 579)

	Low (n=167)		Middle (n=234)		High (n=184)				
	M	SD	M	SD	M	SD	Wilks' λ	Partial η^2	F
SCPS							.86**		
ANX	24.15	10.59	26.32	11.29	21.33	10.46		.04	10.91**
AGG	23.68	5.58	23.74	5.74	21.85	5.59		.02	6.88**
SW	15.22	5.54	16.21	5.73	13.09	5.61		.05	16.02**
SC	7.77	3.59	8.59	3.44	6.85	3.33		.04	13.18**
AP	16.42	7.22	19.88	7.75	17.28	8.87		.03	10.52**
FR	9.34	4.78	10.53	5.05	9.03	5.10		.02	5.34**
VA							.94**		
VOC	21.71	10.29	21.99	9.68	24.93	10.03		.02	5.99**
VR	10.43	3.46	10.93	3.39	11.24	3.47		.01	2.45
NUM	20.01	7.69	21.84	7.53	22.05	7.28		.01	3.98*
GK	17.60	5.61	17.79	5.56	18.78	5.45		.01	2.40
CNCEQ							.94**		
CATA	14.80	6.22	16.42	6.72	13.60	5.88		.04	10.49*
PERS	17.50	6.19	17.94	7.82	16.79	6.49		.005	1.41
SA	14.39	5.59	15.32	5.90	13.35	4.11		.02	7.13**
OG	14.92	6.67	16.52	7.52	13.68	6.52		.03	8.66**
HIT-Q							.99*		
SC	5.004	.59	4.93	.73	4.93	.66		.003	.75
BO	4.60	.73	4.52	.96	4.53	.85		.001	.40
ML	1.48	.42	1.52	.49	1.50	.39		.002	.48
AW	1.48	.40	1.44	.41	1.41	.39		.005	1.54
NEO-FFI							.91**		
NEU	39.71	8.42	38.15	10.57	36.36	11.24		.02	4.54*
EXT	15.69	2.88	15.00	2.76	16.04	3.06		.02	6.74**
OPEN	34.10	8.36	34.37	7.94	35.25	7.01		.004	1.02
AGRE	34.37	8.58	36.69	8.28	36.74	7.55		.02	5.78**
CONS	38.38	8.12	38.40	8.53	40.74	8.03		.02	4.81**

**$p<.001$, non-sig. = $p>.05$

Note: SCPS = School Children Problem Scale, ANX = Anxiety, AGG = Aggression, SW = Social Withdrawal, SC = Somatic Complaints, AP = Academic Problems, FR = Feelings of Rejection, VA = Verbal Ability, VOC = Vocabulary, VR = Verbal Reasoning, NA = Numeri Ability, GK = General Knowledge, CNCEQ = Children Negative Cognitive Errors Questionnaire, CATA = Catastrophizing, PERS = Personalizing, SA = Selective Abstraction, OG = Over Generalization, HIT-Q = How I Think Questionnaire, SC = Self-Centeredness, BO = Blaming Others, ML = Mislabeling, AW = Assuming the Worst, NEO-FFI = Neuroticism Extraversion Openness-Five Factor Inventory, NEU = Neuroticism, EXT = Extraversion, OPEN = Openness, AGRE = Agreeableness, CONS = Conscientiousness

Table 60 highlights the findings of multivariate analyses of variance to study mean differences between different income groups (early, middle and late adolescence) on emotional and behavioral problems, verbal cognitive abilities, cognitive errors and personality traits. Model 1 of the table shows statistically significant differences on emotional and behavioral problems $F(12, 1154) = 7.53$, $p < .001$; $\lambda = .94$, partial $\eta^2 = .07$ between low, middle and high income groups. Individual univariate analyses further endorsed these significant differences between three income groups on anxiousness $F(2, 582) = 10.91$, $p < .001$, aggression $F(2, 582) = 6.88$, $p < .01$, social withdrawal $F(2, 582) = 16.02$, $p < .001$, somatic complaints $F(2, 582) = 13.18$, $p < .001$, academic problems $F(2, 582) = 10.52$, $p < .001$ and feelings of rejection $F(2, 582) = 5.34$, $p < .01$.

Model 2 displays results of significant multivariate effects of income on verbal cognitive abilities among adolescents $F(8, 1158) = 4.55$, $p < .001$; $\lambda = .94$, partial $\eta^2 = .03$. Separate univariate analyses further endorsed these results by suggesting significant differences on vocabulary $F(2, 582) = 5.99$, $p < .01$ and numerical ability $F(2, 582) = 3.98$, $p < .05$ among low, middle and high income groups. However univariate analysis suggested a non-significant effect of income on verbal reasoning $F(2, 660) = 2.45$, $p > .05$ and general knowledge abilities $F(2, 582) = 2.40$, $p > .05$ across three groups.

Model 3 of the table reveals significant difference on self-debasing cognitive errors ($F(8, 1158) = 4.31$, $p < .001$; $\lambda = .94$, partial $\eta^2 = .03$) between low, middle and high income groups. Univariate test further supported these results and revealed significant differences on three of the cognitive errors i.e. catastrophizing $F(2, 582) = 10.49$, $p < .001$, selective abstraction $F(2, 582) = 7.13$, $p < .01$, and overgeneralization $F(2, 582) = 8.66$, $p < .001$ between three of the income groups. However no significant differences were observed regarding income on personalization $F(2, 582) = 1.41$, $p > .05$ between any of the groups.

Age differences for self-serving cognitive errors are given in model 4 of the table. Values reveal significant overall effect of income on self-serving cognitive errors $F(8, 1158) = 2.43$, $p < .05$; $\lambda = .99$, partial $\eta^2 = .02$. However separate univariate test showed that income did not contribute for significant difference for any of the self-serving cognitive errors ($p > .05$) between low, middle and high income groups.

Last model of the table reveals multivariate effect of different levels of income for personality traits. Values in the model suggest a significant overall effect of income on personality traits $F(10, 1144) = 5.68$, $p < .001$; $\lambda = .91$, partial $\eta^2 = .05$. Univariate analysis further supported significant mean difference for neuroticism $F(2, 576) = 4.54$, $p < .05$, extraversion $F(2, 576) = 6.74$, $p < .01$, agreeableness $F(2, 576) = 5.78$, $p < .01$, and conscientiousness $F(2, 576) = 4.81$, $p < .001$ across different groups of income whereas no significant differences emerged for openness.

Table 61

Post Hoc Analyses for Mean Differences in Emotional and Behavioral problems across different Income Groups (N = 663)

Variables	(I) Income Group	(J) Income Group	Mean Difference	S.E.	*p*	95% CI LL	95% CI UL
ANX	Low	Middle	-2.17	1.10	.119	-4.75	.41
		High	2.82	1.16	.040	.10	5.54
	Middle	High	4.99	1.07	.000	2.48	7.50
AGG	Low	Middle	-.05	.57	.995	-1.40	1.29
		High	1.83	.60	.007	.42	3.25
	Middle	High	.189	.56	.002	.58	3.20
SW	Low	Middle	-.99	.57	.194	-2.33	.35
		High	2.13	.60	.001	.71	3.54
	Middle	High	3.12	.56	.000	1.81	4.42
SC	Low	Middle	-.82	.35	.050	-1.64	.00
		High	.92	.37	.033	.06	1.79
	Middle	High	1.75	.34	.000	.95	2.55
AP	Low	Middle	-3.47	.81	.000	-5.36	-1.57
		High	-.86	.85	.569	-2.87	1.14
	Middle	High	2.60	.79	.003	.75	4.45
FR	Low	Middle	-1.19	.51	.049	-2.38	-.01
		High	.31	.53	.831	-.94	1.56
	Middle	High	1.50	.49	.007	.35	2.66

19 $p<.001$, $^{**}p<.01$, $^{*}p<.05$, $p>.5$ = non-sing

Note: CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit, S.E. = Standard Error, ANX = Anxiety, AGG = Aggression, SW = Social Withdrawal, SC = Somatic Complaints, AP = Academic Problems, FR = Feelings of Rejection

Table 61 presents findings of Post Hoc analysis concerning mean differences on emotional and behavioral problems between low, middle and high income groups. Results manifest that there are significant differences on anxiousness 10 between low and high income groups ($p < .05$) and between middle and high income groups ($p < .001$) whereas 27 no

significant differences were observed between low and middle income groups ($p > .05$). Similar trend emerged for aggressive behavior as significant differences on aggression were found between low and high income groups ($p < .001$) and between middle and high income groups($p < .001$). However low and middle income groups did not differed in aggression ($p > .05$). Same pattern of group differences occurred in social withdrawal as well. Values in the table reveal that there were statistically significant differences on social withdrawal between low and high income groups ($p < .01$) and between middle and high income groups ($p < .001$) but not between low and middle income groups ($p > .05$). Similar differences were found for somatic complaints. For academic problems, significant differences occurred between low and middle income groups ($p < .001$) and between middle and high income groups ($p < .01$) but not between low and high income groups ($p > .05$). On feelings of rejection, there were significant differences between low and middle income groups ($p < .05$) and between middle and high income groups ($p < .01$) but not between low and high income groups ($p > .05$). Overall mean values reported in Table 60 elucidate that middle income group showed the highest level of all types of emotional and behavioral problems while high income group showed the minimum levels of these problems.

Table 62

Post Hoc Analyses for Mean Differences Verbal Cognitive Abilities across different Income Groups (N = 663)

Variables	(I) Income Group	(J) Income Group	Mean Difference	S.E.	*p*	95% CI	
						LL	UL
VOC	Low	Middle	-.28	1.01	.958	-2.65	2.09
		High	-3.23	1.07	.007	-5.73	-.72
	Middle	High	-2.95	.98	.008	-5.26	-.64
NA	Low	Middle	-1.83	.76	.043	-3.62	-.05
		High	-2.05	.80	.029	-3.93	-.16
	Middle	High	-.22	.74	.954	-1.95	1.52

$p<.001$, $**p<.01$, $*p<.05$, $p>.5$ = non-sing

Note: CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit, S.E. = Standard Error, VOC = Vocabulary, NA = Numerical Ability

Table 62 displays results of Post Hoc test for mean differences on verbal cognitive abilities between low, middle and high income groups. Model 1 shows that there were statistically significant differences on vocabulary between low and high income groups income groups ($p < .01$) and between middle and high income groups ($p < .01$) but not between low and middle income groups ($p > .05$). For numerical ability, significant mean differences were found between low and income groups ($p < .05$) and between middle and high income groups ($p < .05$) but not between low and high income groups ($p > .05$). Mean values given in table 60 elucidate and endorse these differences by suggesting that adolescents from high income groups had higher level of all types of verbal cognitive abilities as compare to adolescents from low or middle income groups.

Table 63

Post Hoc Analyses for Mean Differences on Self-Debasing Cognitive Errors across different Income Groups (N = 663)

Variables	(I) Income Group	(J) Income Group	Mean Difference	S.E.	*p*	95% CI LL	95% CI UL
CATA	Low	Middle	-1.62	.64	.031	-3.13	-.12
		High	1.20	.68	.176	-.38	2.79
	Middle	High	2.83	.62	.000	1.36	4.29
SA	Low	Middle	-.93	.54	.194	-2.19	.33
		High	1.04	.57	.159	-.29	2.37
	Middle	High	1.97	.52	.001	.74	3.20
OG	Low	Middle	-1.60	.71	.062	-3.26	.06
		High	1.24	.75	.222	-.52	2.99
	Middle	High	2.84	.69	.000	1.22	4.45

$p<.001$, $**p<.01$, $*p<.05$, $p>.5$ = non-sing

Note: CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit, S.E. = Standard Error, VOC = CATA = Catastrophizing, SA = Selective Abstraction, OG = Over Generalization

Table 63 shows the findings of Post Hoc test for mean differences on self-debasing cognitive errors between low middle and high income groups. Values in the table reveal

that there statistically significant difference on catastrophizing between low and high income groups ($p < .05$) and between middle and high income groups ($p < .001$) but not between low and middle income groups ($p > .05$). Similar findings were found for over generalization. For selective abstraction, middle and high income groups differed significantly ($p < .01$) but no significant differences emerged between low and middle or low and high income groups ($p > .05$). Overall mean values reported in Table 60 illustrate these group differences by indicating that middle income group committed higher level of cognitive errors as compared to other two groups.

Table 64

Post Hoc Analyses for Mean Differences in Personality Traits across different Income Groups (N = 579)

Variables	(I) Income Group	(J) Income Group	Mean Difference	S.E.	*p*	95% CI LL	95% CI UL
NEU	Low	Middle	1.56	1.04	.288	-.87	3.99
		High	3.31	1.10	.008	.73	5.90
	Middle	High	1.75	1.02	.197	-.64	4.14
EXT	Low	Middle	1.04	.29	.001	.35	1.73
		High	-.36	.31	.487	-.37	1.09
	Middle	High	-.68	.29	.047	-1.36	-.01
AGRE	Low	Middle	-.22	.83	.96	-2.17	1.72
		High	-2.37	.88	.020	.30	4..43
	Middle	High	-2.59	.81	.004	.68	4.50
CONS	Low	Middle	-2.34	.84	.015	.37	4.31
		High	-2.36	.89	.022	.27	4.45
	Middle	High	-.02	.82	1.00	-1.91	1.95

$p<.001$, $**p<.01$, $*p<.05$, $p>.5$ = non-sing

Note: CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit, S.E. = Standard Error, NEU = Neuroticism, EXT = Extraversion, AGRE = Agreeableness, CONS = Conscientiousness

Table 64 reveals results of Post Hoc analysis for mean differences on personality traits among low, middle and high income groups. Values of mean difference demonstrate that low and high income groups differed significantly ($p < .01$) on neuroticism whereas no significant differences occurred between low and middle income groups and between middle and high income groups ($p > .05$). On extraversion dimension, significant mean differences were found between low and middle income groups ($p < .01$) and between middle and high income groups ($p < .05$) but not between low and high income groups ($p > .05$). For agreeableness dimension, significant mean differences emerged between low and high income groups ($p < .05$) and between middle and high income groups ($p < .01$) but no between low and middle income groups ($p < .05$). Values further show that there were significant mean differences on conscientiousness between low and middle income groups ($p < .05$) and between low and high income groups ($p < .05$) but not between middle and high income groups ($p < .05$). Overall mean values reported in Table 60 show that low income group had higher level of neuroticism as compared to other two groups whereas on extraversion, agreeableness and conscientiousness high income group had higher scores as compared to low and middle income groups.

Discussion

Main study was purported to examine the power of adverse life events, cognitive abilities (i.e., verbal and nonverbal), cognitive errors (i.e., self-debasing and self-serving), and personality traits to predict emotional and behavioral problems of adolescents. The study also aimed to find the moderating effect of cognitive abilities (i.e., verbal and nonverbal), cognitive errors (i.e., self-debasing and self-serving), and personality traits in explaining the association between experience of adverse life events and adolescents' emotional and behavioral problems. Another objective of main study was to explore group differences for demographics (i.e., age, gender, income, and family system) on all the study variables.

Factor Structure of CNCEQ and HIT-Q

As decided in the pilot study, the factor structures of CNCEQ and HIT-Q were recomputed (Table 18) in the main study to assess the fitness of both models. Results of the main study approved the four-factor model of CNCEQ and six-factor model of HIT-Q as the values of RMSEA (.07) lie in acceptable range and fit indices are greater than .90 suggesting good model fit for both of the measures. For model fit of CNCEQ, findings get partial support from Karakaya et al. (2007) who confirmed three factors: personalizing, catastrophizing and selective abstraction while overgeneralization was ascertained to be conglomerated under these three factors. The findings of the present study, however, show a discrepancy with most of the studies probed into the factor structure of CNCEQ (i.e., Kingery et al., 2009; Maric et al., 2011; Stewart et al., 2004). The reason behind this inconsistency may be the lingual and methodological issues during the process of translation and adaptation. Although, there exists a consensus regarding the universality of cognitive errors, however culture and language are the crucial constituents in shaping the

cognitive processes. Moreover semantic understanding and expression of these thought patterns can also vary across cultures. A rigorous knowledge of the cultural norms is a requisite for the amelioration in CNCEQ as a valid and universal measure of cognitive functioning among youth. To sum up, along with the CFA findings, good internal consistency and high reliability coefficients of Urdu version of CNCEQ also show that the measure is reliable and appropriate to use with Pakistani adolescents. These findings are consistent with the original questionnaire (Leitenberg et al., 1986).

Model fit of HIT-Q is now in line with previous validation studies (i.e., Gibbs et al., 2001; Fernandez et al., 2013; Nas et al., 2008; Plante et al., 2012) hence strengthen and reinforce our confidence in using HIT-Q to assess self- self-serving cognitive errors of Pakistani adolescents.

Predictive Role of the Study Variables for Emotional and Behavioral Problems

To meet the objectives and test the hypotheses of the study, linear and multiple regression analyses were computed to study the impact of adverse life experiences, cognitive abilities (verbal and nonverbal), cognitive errors (self-debasing and self-serving), and personality traits (neuroticism, extraversion, openness, agreeableness, and conscientiousness) on emotional and behavioral problems of adolescents.

Adolescence, being a critical and transitional developmental phase, is marked by several changes including physical maturation, emerging sexuality, family conflicts and dysfunction, fiscal hardships, and authoritarian communal norms and need for autonomy as well as multiple sources of stress. Exposure to these stressors, if not handled rightly, can have a negative impact on adolescents' health and may jeopardize them for frequent physical and psychological symptoms (Evans, 2003; Kazdin, 2000).

These symptoms, occurring more frequently in school children, are usually classified in terms of 'internalizing and externalizing' or 'emotional and behavioral'

problems (Achenbach & Edelbrock, 1978). Internalizing or emotional problems include overly absorbed and inhibited emotions or covert behaviors such as anxiety, social alienation, and somatic symptoms (Baker, Grant, & Morlock, 2008; Evans 2003). Externalizing behavioral problems, on the contrary, have been defined as unrestrained overt expressions of emotions e.g. aggressive and disruptive behavior, defiance, hyperactivity, and conduct tendencies (Gunther, Drukker, Feron & Os, 2007; Merrell, 2003; Zahn-Waxler, Klimes-Dougan, & Slattery, 2000).

Saleem & Mehmood (2011) reported 8% to 16% ratio for emotional and behavioral problems among secondary school children where anxiousness (16%) and rejections feelings (15%) were the most prevalent problems. These statistics endorse previous results that prevalence of emotional and behavioral problems among children and adolescents are growing with an alarming rate (Achenbach, Dumenci, & Rescorla, 2002; Al-Gelban, 2007; Collishaw, Maughan, Goodman, & Pickles, 2004). It is also accepted far and wide that these difficulties, if not addressed timely and remain unheeded, may have devastating effect not only on child's psychological health but extends to academic, social, and professional arenas later in life (e.g., Hughes, Lourea-Waddell, & Kendall , 2008; Mash & Wolfe, 2005; Nock & Kazdin, 2002; Turner, Finkelhor, & Ormrod, 2010).

Among the many aetiological factors (Muris, Mayer, Reinders, & Wesenhagen, 2011), adverse life events have been promised as the chief predictors of both internalizing and externalizing problems (Kumpulainen, Räsänen, & Puura, 1998; Kim et al., 2003) and numerous studies have confirmed this assumption by revealing a positive relationship between the experience of adverse life events and problem behaviors i.e., conduct problems, (Gunther et al., 2007) anxiety, and depression (Verhulst et al, 2003). In Pakistan, although a number of researches have been carried out to study emotional and behavioral problems of adolescents; but the phenomenon has been hardly studied in the context of

adverse life experiences. The main study was primarily intended to examine the impact of stressful life events on emotional and behavioral problems of adolescents. The first hypothesis of main study also states that experience of adverse life events predict emotional and behavioral problems among adolescents.

Results of the study (Table 20) supported this assumption by revealing that adverse life experiences positively predicted emotional and behavioral problems among adolescents. These findings are in line with previously reported literature as well as other data in hand (i.e., Cicchetti & Toth, 2005; McMahon, Grant, Compas, Thurm, & Ey, 2003; Shaw, 2003) theorizing that various life stressors i.e., sexual abuse, parental conflict and divorce, physical or emotional neglect, maltreatment, and exposure to war related traumas and extremism have devastating effect on psychological and emotional health of children and adolescent and may lead to grievous mental health problems including post-traumatic stress disorder, depression, anxiety and social alienation. However, literature (i.e., Rutter, 2006, 2007), at the same time, also highlights that people have different reactions to the same traumatic experiences depending upon multiple social and personal factors e.g. social support, resilience, personality traits, and cognitive skills (Gottfredson & Deary, 2004; Grant et al., 2006; Updegraff & Taylor, 2000).

The link between adolescent psychopathology and cognitive skills or academic abilities has been well documented and this evidence is mostly based upon the researches demonstrating cognitive ability as a buffer zone against emotional and behavioral difficulties among school children. These findings have been established by the studies using clinical samples (Hollander & Hebborn-Brass, 1989; Loney, Frick, Ellis, & McCoy, 1998) as well as the studies based upon general population (Flouri et al., 2012; Manikam, Matson, Coe, & Hillman, 1995). Moreover, a stable and consistent relationship has been observed between the two constructs over time (Anderson, Anderson, Northam, Jacobs, &

Mikiewicz, 2002; Dietz, Lavigne, Arend, & Rosenbaum, 1997; Kusche, Cook, & Greenberg, 1993).

However, a substantial discrepancy has been found regarding the causal path of this relationship. One school of thought (i.e., Jorm, Share, Maclean, & Matthews, 1986; Palfrey, Levine, Walker, & Sullivan, 1985) postulates that emotional and behavioral problems function as the source factors of cognitive deficits and academic underachievement among adolescents. While others (e.g., Halonen, Aunola, Ahonen, & Nurmi, 2006; Miles & Stipek, 2006) theorize that poor cognitive abilities or low intellectual abilities lead to emotional and behavioral outcomes in children and adolescents. Parallel to these arguments, some researchers (e.g., Morgan et al., 2008; Trzesniewski et al., 2006) appreciate a reciprocal model proposing an inverse relationship between the both.

Based upon the second paradigm next hypothesis of the main study stated that verbal and nonverbal cognitive abilities negatively predict emotional and behavioral problems among adolescents. Findings of the study (Table 21) partially affirmed this assumption and found that verbal cognitive abilities (vocabulary, verbal reasoning, numerical ability and general knowledge) had a significant negative impact on emotional and behavioral problems of adolescents. These results are quite congruent with the existing literature i.e. two longitudinal studies (Sato et al., 2016; van Os, Jones, Lewis, Wadsworth, & Murray, 1997) based upon general population found a causal link between lower level of cognitive abilities and developmental psychopathology. These researches exhibited that cognitive deficits originating at childhood age result in non-psychotic psychopathologies in later years (Sato et al., 2016; van Os et al., 1997).

Studies have further elaborated that children and adolescents identified with poor intellectual abilities, developmental delays (Guralnick & Groom, 1987), and under

achievements (Becker & Luthar, 2002) are usually vulnerable to experience low self-esteem, disapproval, and peer rejection (Bellanti & Bierman, 2000) which, in turn, may lead towards problem behaviors (Suresh, Ayyappan, Nandini, & Ismail, 2015) including conduct tendencies (Sato et al., 2016), emotional difficulties (Singh & Sharma, 2012), social alienation (Parker & Asher, 1987) etc. Some researchers have also highlighted attention and hyperactivity problems among children and adolescents with intellectual and cognitive deficits (Sato, 2016; Singh & Sharma, 2012).

Second hypothesis also hold that nonverbal cognitive ability negatively predict emotional and behavioral problems among adolescents. Contrary to the existing data, results of the main study (Table 22) did not support this assumption. Previous studies have drawn opposite conclusion e.g. a study with a community sample of 4000 pairs of twins (Plomin, Price, Eley, Dale, & Stevenson, 2002) reported a moderate negative association between nonverbal cognitive ability and emotional and behavioral difficulties. In their study Plomin et al. (2002) concluded that lower level of nonverbal cognitive ability is a risk factor of problem behaviors among school going children. Similar findings have been reported in later studies (Flouri et al., 2012; Flouri & Panourgia, 2011; Flouri & Tzavidis, 2010) as well. However, the reason behind these inconsistent findings may be the curriculum devised for secondary school children in Pakistan.

Curriculum is, in fact, the fundamental pathway to achieve the set objectives of education in a society. The Curricula designed in the education system of Pakistan is too superannuated to satisfy the contemporary educational demands and the international standards as well. Being a traditional out-fashioned tool it just compels the students for rote memorization of certain facts and figures while does not acknowledge the holistic growth and development of the learners. It puts greater emphasis on confirming the ideology of teachers with the typical reward and punishment system and does not

incorporates the psychological, philosophical as well as sociological foundations of education. It neither prepares them for practical life nor polishes them for research with scientific knowledge and reflective observation; but just focuses on memorizing the theoretical concepts.

Above all, it is devoid of the creative learning practices which enhance the nonverbal skills of apprentices. These skills may include abstract reasoning, spatial abilities, diagrammatical skill, and puzzle solving which cultivate and refine the problem solving ability of children and train them to cope with the everyday stressors and resultant mental health problems effectively. Keeping all these facts in mind, the findings of the current study are quite justified and compatible with the education system of secondary schools in Pakistan. Since this nonverbal cognitive ability was not the part of their learning therefore it did not account any significant effect in explaining emotional and behavioral problems of adolescents.

Third hypothesis of the study stated that self-debasing and self-serving cognitive errors lead to emotional and behavioral problems among adolescents. Cognitive errors, according to cognitive behavior therapist, are the reality distorting thoughts which reinforce negative emotions (Rehna et al., 2012) and lead individual to misinterpret any event in the environment and ultimately result in disturbed emotions. Based upon this assumption, existing literature (Garnefski, Kraaij, & Spinhoven, 2001; Garnefski, Kraaij, & Spinhoven, 2002) has made a clear distinction between thinking errors which are self-targeted in nature (i.e., self-blaming, catastrophizing, rumination, and over generalization) and those which are negatively biased towards others (i.e., other-blaming, rationalization, and self-centeredness etc.). Expatiating further, researches have drawn specificity of the self-degrading thinking errors (personalizing, rumination, and catastrophizing) with internalizing symptoms including anxiety, depression, and withdrawal tendencies (Epkins,

2000; Garnefski et al., 2001, 2002; Garnefski, Boon, & Kraaij, 2003; Garnefski, Teerds, Kraaij, Legerstee, & van den Kommer, 2003).

Findings of the study, again, partially supported this hypothesis by suggesting that self-debasing cognitive errors (catastrophizing, personalizing, selective abstraction, and over generalization) positively predicted (Table 23) all of the problem behaviors except aggression; as aggression was negatively predicted by these type of thinking errors. However, self-serving cognitive errors (self-centeredness, blaming others, mislabeling, assuming the worst) showed a significant negative impact (Table 24) on all problems but positively predicted aggression among adolescents.

Findings of the self-debasing cognitive errors are very much alike with the researches previously reported (e.g., Aldao et al., 2010; Cannon & Weems, 2010; Leung & Poon, 2001; Weems & Silverman, 2006; Weems & Stickle, 2005) postulating that maladaptive thought patterns which are self-degrading in nature pave the way for problem behaviors, particularly internalizing problems in young children and adolescents. Explicating the underlying process, studies have reported that common difficulties in the process of emotional regulation (Lupien, McEwen, Gunnar & Heim, 2009) i.e., difficult cognitive reworking, expressive suppression, or internalization of the negative emotions regarding stress lead to problem behaviors with strong emotional symptoms (Aldao et al., 2010).

For self-serving cognitive errors, the results (Table 24) did not fully support our hypothesis. The study found that self-serving cognitive errors (self-centeredness, blaming others, mislabeling, and assuming the worst) positively predicted aggression and academic problems among adolescents but negatively predicted emotional problems. Self-serving cognitive error, also referred to as self-serving bias, can be defined as a process based upon perceptions and cognitions in order to protect and boost self-esteem (Gibbs, 2003) or it

may be defined in terms of attribution where individual tend to assign success to one's own abilities and ascribes failures more readily to situational factors (Dodge, 2010; Forsyth, 2007). In doing so, individuals, in fact, tries to protect their ego from external threats and psychological harms associated with his own behavior or environmental pressure and prove themselves as virtuous and civilized persons (Gibbs, 2003).

Although contrary to the set hypothesis; findings of the study get empirical support from a number of researches (i.e., Barriga et al., 2001; Fernandez et al., 2013; Garnefski et al., 2005) theorizing that individual with aggressive behaviors, conduct tendencies, moral disengagement, committing domestic violence, and other offences hold distinct type of thought patterns of their wrongdoings (Cattani, 2015; Langton, 2007). These thoughts, for instance, include ascribing blame to others for their own misconducts or rationalizing the consequences of such actions which are strong predictors of aggressive and antisocial behaviors (Andreu & Peña, 2013; Barriga et al., 2009; Capuano, 2011; Plante et al., 2012; Van der Velden et al., 2010). Consistent to these findings, a contemporary theory of aggression (Sestir & Bartholow, 2007) also postulated that adolescents' aggressive behaviors have a strong link with selfish and criminogenic thoughts which lead to adult recidivism later in life (Gendreau, Little, & Goggin, 1996).

Since self-serving cognitive distortions are cathartic in nature with an overt expression therefore these errors are associated with externalizing or behavioral problems such as aggression and conduct tendencies (Andreu & Peña, 2013; Barriga, et al., 2009; Capuano, 2011; Fernandez et al., 2013; Nas et al., 2008; Plante et al., 2012; Van der Velden et al., 2010) more closely rather than emotional problems which lie on the opposite extreme and constitute behaviors that are inwardly directed and more absorbing in nature such as depressive symptoms, anxiousness and social withdrawal (Garnefski et al., 2005; Leitenberg et al., 1986).

Another significant dimension that may perform a significant role in explaining problems behaviors is the 'personality' of adolescents. The last few decades have enormously furthered our comprehension and discernment regarding different aspects of individual personality e.g. the way one feels, thinks, and behaves (John et al., 2008). A scholarly level unanimity has emerged in organizing certain behavioral aspects into broader and generalized traits (personality traits), the way these traits modify or vary over time (personality development), and also the way these relatively enduring characteristics impact different spheres of one's life. In the last decade personality research has not only focused the adult personality dimensions (Caspi et al., 2005) but a notable attention has also been paid to understand and explain personality traits of children and adolescents. More specifically, literature has established a strong association between personality traits and emotional and behavioral problems of adolescents (Cooper et al., 2000; Hoyle et al., 2000; Loukas et al., 2000; Tackett, Kushner, Herzhoff, Smack, & Reardon, 2014; Widiger & Lowe, 2008).

Relatedly, fourth hypothesis of the study held that neuroticism lead to emotional and behavioral problems among adolescents. Findings of the study (Table 25) fully supported this postulation and found that neuroticism strongly predicted emotional and behavioral problems among adolescents. These findings can be supported with the help of numerous studies based upon personality-psychopathology hypothesis. These studies (Barbaranelli, Caprara, Rabasca, & Pastorelli, 2003, Eisenberg, Smith, Sadovsky, & Spinrad, 2004; Muris et al., 2005; Muris, Winands, & Horselenberg, 2003) have manifested a central role of neuroticism in understanding the aetiology of child and adolescent psychopathology including anxiety, depression, aggression, withdrawal, and substance disorders (Barlett & Anderson, 2012; Gomez & Francis, 2003; Kotov, Gamez, Schmidt, & Watson, 2010; Malouff, Thorsteinsson, & Schutte, 2005; Ormel, Oldehinkel,

& Brilman, 2001; Ruiz, Pincus, & Schinka, 2008). Similar conclusions have been drawn in other studies (Calkins & Fox, 2002, Lonigan, Vasey, & Phillips, 2001; Muris & Ollendick, 2005; Watson et al., 2005) that neuroticism temperament or negative emotionality has been observed as a noted risk factor in developing emotional and behavioral problems of adolescents.

Next hypothesis of the study indicated that extraversion, openness, agreeableness, and conscientiousness personality traits have a negative impact on emotional and behavioral problems of adolescents. Findings of the present research (Table 25) supported this assumption and revealed that extraversion and agreeableness had a significant negative impact on all of the problem behaviors of adolescents. However, openness and conscientiousness predicted some of the problem behaviors with significant effect while for other these traits remained non-significant factors. Empirical justifications can be drawn from previous studies to support these findings i.e. Kotov et al. (2010) found in a meta-analysis that extraversion and agreeableness were negative predictors adolescent psychopathology where low level of these two traits resulted in anxiety, depression and withdrawal behaviors among adolescents. Similarly other studies found that extraverts, being sociable, self-confident, talkative and enthusiastic (Sharpe & Desai, 2001), experience low level of aggression (Barlett & Anderson, 2012; Sharpe & Desai, 2001), anxiety, social alienation, and depressive symptoms (Gothelf, Aharonovsky, Horesh, Carty, & Apter, 2004; Kotov et al., 2010; Manders, Scholte, Janssens, & Debruyn, 2006).

Similarly, adolescents with high trait of agreeableness hold the virtues of adaptability, supportive, compliance, trustworthiness, and good-nature (John & Srivastava, 1999); that is why they are less likely to indulge in problem behaviors e.g. aggressive or conduct behaviors (Gleason, Jensen- Campbell, & Richardson, 2004; Tackett et al., 2014), or emotional problems i.e. social alienation, anxiousness, or other symptomatology (Soto

& Tackett, 2015). Conscientiousness has also been reported for contributing a negative impact on emotional and behavioral problems of children and adolescents (Settles et al., 2012; Sharpe & Desai, 2001; Tackett, 2006) but in the current study it did not explained a significant impact on most of the problem behaviors.

Conscientiousness is a trait holding the characteristics of being responsible, organized, careful, vigilant, and dependable (John & Srivastava, 1999) but adolescents in Pakistani society are not much polished and groomed at this developmental level. Pakistani children and adolescents are largely dependent on parents for their economic, social, and academic needs and being socialized in a restrictive environment with greater compliance expected. They are less likely to exercise their will and take responsibilities and decisions at their own until they reach the age of early adulthood. Being stuck in 'identity vs. role confusion' stage, their conscientious trait is not much evident at this age; rather it starts getting mature at the end of adolescence period and keeps maturing in adulthood. This trajectory has also been supported by a number of researches (Bleidorn et al., 2013; Denissen et al., 2013; Roberts & Wood, 2006) that the trait of conscientiousness is prominent at the beginning of adolescence period then it suppresses throughout this period and regain maturity at early adulthood because the factors supporting this aspect of personality development are stronger and more prominent at later age.

Openness was a significant negative predictor of anxiousness, withdrawal, and somatic symptoms but it did not produced any significant variance in explaining other problematic behaviors including aggression, academic problems and rejection feelings among adolescents. Literature, in hand, too does not provide any consistent findings with respect to relationship between openness to experience and problem behaviors of adolescents. John and Srivastava (1999) reported that people high on openness to experience trait are predominantly rewarded with intellect, creativity, cultural

sophistication, open-mindedness, and progressive nature and these traits have been reported to be unrelated to aggressive impulses (Gleason et al., 2004). Similarly, Widiger and Trull (1992) reported a negative association between openness and emotional problems of youth however other researches (Klimstra et al., 2009; Klimstra, Modlin, Coppola, Lloyd, & Suster, 2010) have found non-significant impact of openness trait on emotional or behavioral domains of adolescent psychopathology.

Moderating Role of Cognitive Factors and Personality Traits

Moderation analyses were carried out by using Process Macro (Hayes, 2013) in order to examine the role of cognitive abilities (verbal and nonverbal), cognitive errors (self-debasing and self-serving), and personality traits (neuroticism, extraversion, openness, agreeableness, and conscientiousness) in the relationship between adverse life experiences and emotional and behavioral problems of adolescents.

Among the many factors, stress is the chief and the strongest predictor of adolescent psychopathology (Grant et al., 2006) which has been given a central focus in numerous theoretical models i.e., diathesis stress and cognitive vulnerability models (Abramson et al., 1978; Beck, 1967; Dodge, 1986; Horowitz, 1979; Williams, Watts, MacLeod, & Mathews, 1988) for the origin and perseverance of psychopathology or maladjusted behaviors (Ingram & Luxton, 2005; Ladd & Troop-Gordon, 2003; Shih, Abela, & Starrs, 2009). Adverse or stressful events of life are, in fact, distinct quantifiable situations or environments that carry negative impact (from mild to extremely severe) including school difficulties, relationship conflicts, health issues, and in severe cases parental divorce or death, sexual abuse, rape, or assault (Cisler et al., 2012; Trickey, Siddaway, Meiser-Stedman, Serpell, & Field, 2012). Furthermore, these adverse experience in adolescence period are linked with the manifestation and elevation of psychological disorders i.e. emotional outcomes and behavioral disruptions (Cuthbert &

Kozak, 2013; Farb, Irving, Anderson, & Segal, 2015; Farmer & Kashdan, 2015; Insel et al., 2010; Morris & Rottenberg, 2015).

Notwithstanding, it is widely accepted that individuals respond to the sensitivity, severity, and the type of stress in totally distinct manner as, with the passage of time, some individuals become overly sensitive to stress whereas others remain resilient and take that stressor as a challenge and fight to prove their abilities and strengths. This variation has numerous practical implications to understand individual variability in the onset and persistence of psychopathology. To understand this variability, literature suggests that there are some predisposed and intrapersonal traits (intellectual growth, personality traits, or cognitive paradigms) that have striking effects on the severity and magnitude of maladjusted behaviors of adolescents (Ingram & Luxton, 2005; Ladd & Troop-Gordon, 2003; Shih et al., 2009). These dispositions vary to a greater extent in children and adolescents; thus some children, with maladaptive traits, are more vulnerable to maladjustments and develop psychopathology more readily than others. These traits usually serve as moderators and may exacerbate or alleviate the effect of environmental stressors on psychosocial adjustment (Belsky, Bakermans-Kranenburg, & van Ijzendoorn, 2007). However, studies highlighting these traits have rarely focused various forms of emotional and behavioral problems individually but studied these traits either in the context of adolescent psychopathology or in terms of internalizing and externalizing problems.

In short, the above data suggest that psychopathology fallouts from an active and dynamic interaction between adversities and a multitude of risk and protective factors (as cited in Muris et al., 2007). Cognitive ability or intellectual growth is one such intrapersonal factor that may have a cushioning effect in the relation between adverse experiences and resultant psychopathology. Researches have shown that intellectual

competence or high cognitive ability is characterized with refined skills of attention, creativity, logic, and comprehension which help in effective emotional regulation (Bradley et al., 2010). Based upon these studies, the present study hypothesized (hypotheses 6) that verbal (Vocabulary, verbal reasoning, numerical ability, and general knowledge) and nonverbal cognitive abilities buffer the effect of adverse life experiences on emotional and behavioral problems of adolescents. Results of the study partially supported this hypothesis as a significant moderation effect was shown for verbal cognitive abilities but nonverbal ability did not account significant moderations effect in the model.

For verbal cognitive abilities, previous studies (i.e., McLoyd, 1998) have drawn some association with specific types of adversities and subsequent maladjustment. Explaining the variation in response to contextual risk, these studies develop an argument that this variability largely depends upon the degree of resilience which is predominantly characterized by a high level of cognitive skills (Gottfredson & Deary, 2004; Grant et al., 2006; Masten et al., 1999). These studies have generally targeted school aged children to study the predictive effect of cognitive abilities on problem behaviors. For moderating role, although, two studies (Flouri et al., 2012; Flouri, Tzavidis, & Kallis, 2010) have highlighted a buffering effect of cognitive abilities on adolescent psychopathology, but these studies have focused only one specific type of adversity i.e. family related adversity and neighborhood related stressors and did not take cumulative life stress into account.

Other researchers have studied specific abilities in the context of problematic behaviors such as language ability (i.e., expression, reasoning, and vocabulary) has been widely linked with the onset and development of adolescent psychopathology. These studies (Beitchman et al., 2001; Brownlie et al., 2004; Lynam, Moffitt, & Stouthamer-Loeber, 1993) identified that such cognitive deficits have been found to result in behavioral difficulties such as aggressiveness, delinquency, and conduct problems in adolescents.

Studies further elaborate that the poor quality of these cognitive abilities leads to poor interpersonal relations and likely peer rejection which, in turn, activate other internalizing symptoms e.g., anxiety, social alienation, and depressive problems (Nelson, Benner, Lane, & Smith, 2004; Rourke, Young, & Leenaars, 1989). Some other studies have also established similar argument to explain association between mathematical problems and internalizing problems of adolescents (Lin, Morgan, Farkas, Hillemeier, & Cook, 2013; Morgan et al., 2008; Nelson et al., 2004). At the same time a few researchers (Trzesniewski et al., 2006) tried to link this association with environmental stressors.

The other side of the coin holds that individuals with higher cognitive abilities i.e. vocabulary, mathematics, or verbal reasoning are gifted with high energy level, better impulse control, and good problem solving skills which minimize the likelihood of psychiatric problems (Cederblad, Dahlin, Hagnell, & Hansson, 1995). Researchers further linked these skills with the neural activation in the brain (van Elk, van Schie, Zwaan, & Bekkering, 2010) because verbal abilities are language based reasoning skills which is primarily processed in frontal lobe area in the brain (Horn, Pisoni, & Miyamoto, 2006) involving the process of self-regulation (Beer, Pisoni, & Kronenberger, 2008). That is why; adolescents with higher cognitive abilities have mature and positive self-regulation which help them better cope with stressful environment by managing the cognitive load carried by the adverse situation.

Nonverbal cognitive ability did account significant moderation in relation between adverse life experiences and adolescents' emotional and behavioral problems. As previously discussed that nonverbal abilities (i.e., perceptual skills, diagrammatic abilities, abstract reasoning etc.) are not incorporated in the curriculum of education system in Pakistan neither these skills are learned in the family settings, hence no significant effect of this ability found in the present study.

Horowitz (1979), in his model of cognitive reworking proposed that experience of traumatic or adverse life events results in psychological maladjustment or pathology in children and adolescents. After the onset of distress or psychopathology, some individuals start a process of difficult reworking on trauma related thoughts and this reworking gradually fit such distortive thoughts into a long-term and stable framework. This cognitive fabric boosts the effect of trauma and increases the distress manifold and also makes them increasingly susceptible and sensitized to other adversities that may arise in that situation. These cognitive disruptions have been referred to as cognitive errors (Barriga et al., 2000; Beck, 1985) and classified as self-debasing (negatively biased towards one's own self) and self-serving (positively biased towards one's own self) errors. These cognitive distortions have been studied as moderators in present study as the study hypothesized self-debasing and self-serving cognitive errors boost the effect of adverse life experiences on adolescents' emotional and behavioral problems.

Findings of the study suggested that self-debasing cognitive errors (catastrophizing, personalizing, selective abstraction, and over generalization) significantly boosted the effect of adverse life experiences on each of the emotional and behavioral problems except somatic complaints. These studies are quite in line, rather endorsing Horowitz's notion that maladaptive and distorted cognitions exacerbate the disruptive emotions and behaviors, once a trauma is experienced. Other researchers have also verified this argument that self-debasing cognitive errors play a dominant role in exhibiting and maintaining emotional and behavioral problems such as anxiety, depression, withdrawal, and social rejection (Aldao et al., 2010; Cannon & Weems, 2010; Gualtieri & Morgan, 2008; Habib & Naz, 2015; Flouri & Panourgia, 2011; Kingery et al., 2009; Maric et al., 2013; Pereira et al., 2012; Weems & Silverman, 2006). Beck himself argued that some individuals have dispositions to blame themselves, when confronted with

a stressor, think the most awful consequences, and generalize the negativity to every similar or dissimilar situation. These tendencies multitude the distress they experience after that negative event or trauma.

In fact, these cognitive deficits carry negative, irrational, biased, and unrealistic interpretations of experiences and environment. Moreover individuals with such negative mindset hold self-deprecating negative obsessions which ultimately cause a significant negative impact on emotions and behaviors. In view of cognitive model of psychopathology (Beck et al. 1979), these deficits develop in childhood period as a result of negative information processing with even little conscious awareness. Moreover children usually fail to notice and value them initially (i.e., some children blame themselves for every negative experience) but gradually these deficits transform into stable negative schemas and negative cognitive reappraisal (Daleiden & Vasey, 1997; Horowitz, 1979; Muris & Field, 2008; Watts & Weems, 2006). Thus individual, holding such schemata, evaluate situation in a more ambiguous and complicated manner and express more emotional and behavioral problems when encountered with some form of trauma, threat or stressful event.

However, for somatic complaints, self-debasing cognitive distortions did not show a significant moderating effect. Moss-Morris and Petrie (1997), in their study on "cognitive distortions of somatic symptoms," also found that self-defeating cognitive errors draw a positive link more with anxiety and depression but not with somatic complaints. These bodily symptoms, according to Moss-Morris and Petrie have a unique association with somatic cognitive errors (SCE) which particularly focus on negative thoughts related to physical illness and pain. These findings have been recently endorsed in two (Benvenuti, Buodo, Mennella, & Palomba, 2015; Bridwell et al., 2014) conducted on depressive disorder. These researchers concluded that self-defeating cognitive errors

are positively linked with the cognitive-affective symptoms (hopelessness, helplessness, suicidal ideation etc.) of depression but not with somatic symptoms of the disorder (e.g., fatigue or loss of energy). Aforementioned studies help supporting the current findings that cognitive errors, linked with emotional symptomatology, will less likely to play a role in explaining physical symptoms produced in response to stress.

Furthermore studies have drawn a specificity of self-debasing cognitive errors with emotional symptoms (Cannon & Weems, 2010; Leung & Poon, 2001; Weems & Silverman, 2006; Weems & Stickle, 2005) as both are self-targeting in nature; perhaps that is why these errors negatively moderated aggressive behavior (a pattern of externalizing symptomatology) of adolescents in the current study. Fernandez et al. (2013) and Garnefski et al. (2005) also concluded that aggression and other externalizing problems have distinct type of cognitive biasness which is negatively targeted towards other people. Following these studies, the present study assumed that self-serving cognitive errors (self-centeredness, blaming others, mislabeling, and assuming the worst), being negative in nature, boost the effect of adverse life experiences on emotional and behavioral problems of adolescents. Results of the study supported this notion only for aggressive behavior and academic problems but not for others. For emotional problems, these errors emerged as protective factors by alleviating the impact of adverse life experiences on emotional problems.

Since "cognitive distortions" is a multifaceted and complex phenomenon hence there is no consensual definition of the concept given in the literature. In criminological research, these distortions have been defined as "offence-supportive attitudes, cognitive processing during an offence sequence, as well as post hoc neutralizations or excuses for offending" (Maruna & Mann, 2006). This neutralization is in fact a rationalizing behavior to deny or minimize the violation of norms and justifying their misdeeds; which has also

been observed in aggressive children and adolescents (Fernández et al., 2013). Among the four principal distortions (Barriga & Gibbs, 1996; Gibbs et al., 1995), self-centeredness is the prime error of thinking in which individual's own needs and opinions are emphasized to such a greater extent that the assessments of other people are barely acknowledged. Self-centeredness precedes deviant behaviors usually marked by ego threat which is minimized through secondary level cognitive distortions such as blaming others (ascribing negative behaviors to environmental sources), assuming the worst (thinking in a worst possible scenario), and mislabeling (framing their behaviors as justified and admirable). These rationalizing behaviors guard them against self-blame, justify their behaviors, and strengthen aggressive tendencies (Helmond, Overbeek, Brugman, & Gibbs, 2014).

In face of any form of adversity, these cognitive neutralization techniques aggravate externalizing problems or aggressive behaviors to protect their ego and self-esteem from the guilt or regret associated with the negative environment. Moreover, being self-protecting and self-enhancing in nature, these cognitive errors serve as protecting shield for the individual and save him from the emotional load (i.e., self-blame) predominantly associated with the internalizing problems. That is why; these errors buffered the effect of adverse life experiences on emotional problems (anxiety, social withdrawal etc.) while boosted the effect for aggression (a way of externalizing emotions) among adolescents.

Studies have also acknowledged the important role of personality in the manifestation and maintenance of various types of emotional and behavioral problems of adolescents (Lonigan & Phillips, 2001). In other words, personality may be considered as a pre-determined individual level factor that mold and shape adolescents' reactions to adverse life experiences and therefore leads to maladjusted behaviors and psychopathology (Muris & Ollendick, 2005).

Relatedly, next hypothesis (8th) of the study proclaimed that neuroticism boosts the relationship between adverse life experiences and emotional and behavioral problems of adolescents. Findings of the study provided a strong support and revealed that neuroticism significantly elevated the effect of adverse life experiences on anxiousness, aggression, social withdrawal, somatic complaints, academic problems, and feelings of rejection among adolescents. Previous studies have also reported neuroticism as a significant moderator in the association between stressful experiences and adolescent psychopathology. For instance, Lonigan and Phillips (2001) have claimed that although a higher level of neuroticism does predict anxiety disorders in children and adolescents but it is more of a dynamic interaction between adverse life experiences and neuroticism that tracks toward the development and maintenance of the problem.

These findings were later endorsed by different researchers (i.e., Muris, 2006; Muris, De Jong, & Engelen, 2004) with other problem behaviors e.g. aggressive tendencies (Eisenberg et al., 2004; Muris et al., 2004; Rubin, Burgess, Dwyer, & Hastings, 2003; Young Mun, Fitzgerald, Von Eye, Puttler, & Zucker, 2001) and social withdrawal (Oldehinkel, Hartman, De Winter, Veenstra, & Ormel, 2004; Young Mun et al., 2001). However, this interaction effect has mostly been studied broadly in terms of internalizing and externalizing problems (Gamez, Kotov, & Watson, 2010; Khan, Jacobson, Gardner, Prescott, & Kendler, 2005) or child and adolescent psychopathology (Frick & Morris, 2004; Nigg, Goldsmith, & Sachek, 2004; Muris & Ollendick, 2005; Reid, Patterson, & Snyder, 2002; Tackett, 2006) rather than focusing various problems individually.

In fact, neurotic individuals have certain predispositions i.e. negative affect, low self-control, poor self-esteem, and poor emotional regulation (Ozer & Benet-Martinez, 2006); hence, they show higher vulnerability for emotional and behavioral disruptions when encountered with any environmental stressor or threatening stimuli. Elucidating this

notion a bit more, some studies emphasize that neurotic individuals are more vulnerable to pathological behaviors (Muris, 2006; Muris, Meesters, & Diederen, 2005; Ormel, Rosmalen, & Farmer, 2004) just because of their poor physical regulation system (Gray & McNaughton, 2000) or the maladaptive cognitive appraisals (Flouri & Panourgia, 2011) which incline them to exhibit more emotional sensitivity and instability in the presence of a stressful situation.

In the same manner, literature has established a moderating link of other personality factors with the occurrence of various adverse life events (i.e., interpersonal conflicts, academic failures, familial traumas etc.) and resultant psychological outcomes (e.g., Chen & Miller, 2012). The last hypothesis of the study stated that extraversion, openness, agreeableness, and conscientiousness buffer the effect of adverse life experiences on emotional and behavioral problems of adolescents. Results of the study partially supported this assumption and found a significant moderating effect of extraversion for all of the problems. Findings revealed that extraversion buffered the effect of adverse life experiences on the level of each of the emotional and behavioral problems.

Being an important personality factor, extraversion has also been studied extensively in relation to child psychopathology. Literature on personality-psychopathology hypothesis found an inverse relationship between extraversion and mental heal problems linking a high score of extraversion with little psychological problems (Headey & Wearing, 1989; Magnus et al., 1993; Watson et al., 2005). However, Spinhoven et al. (2011), following a one year prospective study, disagreed with this conclusion and regarded this an incomplete and insufficient evidence for the course of symptom development. He further theorized that instead of being causal factor, extraversion serves a moderating role and buffers the effect of negative life events on adolescents' problem behaviors. A recent longitudinal study conducted by Calvete, Orue, and Gamez-Guadix

(2016) with a sample of 1440 adolescents studied the moderating effect of extraversion in the context of life stressors (i.e., victimization of bullying) and internalizing symptoms. Their study concluded that higher level of extraversion trait significantly cushioned the stressful effect of this trauma in explaining emotional outcomes in adolescents i.e. anxiety and depression. Similar effects were observed in an earlier study (Sharpe & Desai, 2001) regarding aggressive behavior of adolescents. Authors theorized that in the presence of any environmental stimulation, extraversion trait regulate emotional reaction and minimize aggressive response. All the aforementioned researches believe that extrovert people are characterized with an optimistic view of life and they are more talkative, sociable, energetic and easily adaptable to the new environment. Above all, they use positive coping mechanism such as problem-focused strategies (i.e., ration action) to regulate emotional distress (Mirnics, et al., 2013) hence experience less negative outcomes than those of neurotic individuals.

Openness to experience is another protective factor which buffers the relation between adversity and negative outcomes. Last hypothesis of the present study held this statement and the results strongly supported the assumption. Findings depicted that openness trait significantly alleviated the impact of adverse life experiences for each of the emotional and behavioral problems of adolescents except academic problems. Previous literature has reported inconsistent findings regarding the predictive effect of openness to experience in explaining adolescent psychopathology (Klimstra et al., 2010; Klimstra et al., 2009; Widiger & Trull, 1992) and neither of the studies has focused on the moderating role of openness trait in this respect yet. However, findings of the present studies may be justified with the few studies suggesting that openness trait showed a positive association with high confidence, creativity, flexibility, positive cognitive appraisal (McCrae & Costa, 1986; O'Brien & De Longis, 1996; Penley & Tomaka, 2002) and positive affect (Malouff

et al., 2005, Steel et al., 2008) which may help individual to cope with life strain or adverse life events in a better way and they experience little emotional or behavioral difficulties as a result.

Despite extraversion and openness, agreeableness is also a significant positive trait that has been widely reported as a cushion against adolescents' pathological behaviors. The current study assumed that agreeableness buffers the effect of adverse life experiences on emotional and behavioral problems of adolescents. Findings revealed a partial support for this assumption and found a significant buffering effect for anxiety, aggression, social withdrawal, and feelings of rejection. However, for somatic complaints and academic problems no significant moderation was accounted by agreeableness trait. Previous researchers have drawn similar conclusion and found agreeableness forms a negative pattern of association with emotional symptoms such as mood and anxiety symptoms (Ferguson et al., 2000; Klimstra et al., 2010), and externalizing problems, including aggression, defiant, conduct tendencies, hyperactivity, risk taking, and antisocial behaviors (e.g., Asendorpf, 2003; Lounsbury, Sunstrom, Loveland, & Gibson, 2003; Ozer & Benet-Martínez, 2006) and this association is strengthen when a stressor is heightened (Mirnicks et al., 2013).

Agreeable persons are awarded with generosity, harmony, compassion, benevolence, and progressive nature (Caspi et al., 2005). Therefore they are less likely to receive social rejection and have a high probability to be accepted, trusted and liked by others (Jensen-Campbell et al., 2002) and are likely to receive little interpersonal conflict (Jensen-Campbell & Graziano, 2001). Even if they are being ignored, devalued, or criticized; they, being more constructive, more often respond in a temperate mode instead of being hurt or feel rejected (Jensen-Campbell & Graziano, 2001; Gleason, Jensen-Campbell, & Richardson, 2004; Jensen-Campbell & Graziano, 2001; McCullough &

Hoty, 2002; Strelan, 2007; Meier & Robinson, 2004). Moreover agreeable individuals use emotion focused (such as seeking social support) and problem-focused coping strategies (e.g., planning) which help them managing interpersonal stress via positive reappraisal (Mirnicks et al., 2013; O'Brien & DeLongis 1996, Watson & Hubbard 1996). The non-significant moderating effect for somatic symptoms is also an important finding of the present study as this kind of psychopathology is more of an intrapersonal functioning and yield few practical implications for interpersonal domain. Therefore, agreeableness, characterized by philanthropy and progressiveness, is less likely to relate and moderate this type of psychosomatic distress.

Conscientiousness, although did not show significant prediction, emerged as a significant moderator and buffered the effect of adverse life events on aggression, social withdrawal, and feelings of rejection among adolescents. In accord with the assumptions of Hayes (2013) and Field (2013), a strong moderator does not necessarily need to be a strong predictor too. A moderator is an independent factor that has an independent effect in the relationship between two variables and can either boost or buffer the relation between the two. Being a positive factor, although suppressed during adolescence (Denissen et al., 2013), may have an implicit effect on the emotional and behavioral aspects of adolescents while going through any adverse experience. Ferguson (2013) postulated that conscientiousness play a significant role in explaining the effect of stress on mental health. He argued that people with higher level of this trait experience minor stress outcomes i.e. anger or emotional symptoms because of their positive affect regulation and better impulse control as compared to those with lower level of conscientiousness. Other studies also endorsed his notion that conscientiousness serves as more of a moderator (O'Connor, Conner, Jones, McMillan, & Ferguson, 2009) than predictor in explaining psychopathology.

Differences on Demographic Variables

Last objective of the study was to explore mean differences across gender, family system, income, and age of the adolescents on the study variables. T-test analyses were computed to measure group differences for gender and family system on all the study variables. Findings revealed that impact of adverse life events, problem behaviors (except aggression), self-debasing cognitive errors, and neuroticism were significantly higher among girls as compared to their counterparts. Finding are quite justified and in line with earlier studies (Angold et al., 2002; Chaplin, Cole, & Zahn-Waxler, 2005; Kingery et al., 2007; Rescorla et al., 2007; Shaw et al., 2009) reporting higher level of problems in girls as compared to boys. Most of the problems assessed in this study were emotional and internalizing (anxiousness, social withdrawal, somatic complaints, and feelings of rejection) in nature which are usually overly controlled, restrained, and directed towards one's own self (Compton, Burns, Egger, & Robertson, 2002) and girls are usually more submissive and more prone to internalize these problems than boys.

Moreover, Children and adolescents in conventional societies have greater tendencies to retrogress in adverse life circumstances than west because of their strict social norms and set patterns of socialization. Particularly in Pakistan, girls are socialized in a more restricted and controlled environment and are trained to be submissive and tolerant to the pressures of life. Further, because of religious parameters, they are demanded compliance and conformity to social and religious values; mainly being obedient to parents and upholding family honor. These societal pressures put them at higher risk for experiencing stress and develop emotional difficulties or internalizing symptoms i.e. anxiety, withdrawal, somatic complaints, and rejection feelings (Saleem & Mehmood, 2011). Because of the higher level of stress and social pressure girls may go

through greater hormonal changes and resultantly experience more somatic symptoms than boys (Carter et al., 2009).

Aforementioned societal factors also lead girls to develop greater tendency for committing self-negating cognitive errors (closely related to emotional/ internalizing problems) than boys (Rehna & Hanif, 2012). The level of neuroticism is also higher in girls, because of the similar features of emotional and cognitive impairment, than in boys (Mirnicks et al., 2013).

On the contrary, boys were significantly higher on self-serving cognitive errors, extraversion, openness, and conscientiousness as compared to female adolescents. In Pakistani society, boys are given more social worth, importance, and are treated in a superior manner as they have to be the family head (in a decision making role) later in life. This special treatment makes them more independent and expressive and helps them develop better coping skills to deal with the stressors of life (Saleem & Mehmood, 2011). Moreover, they tend to externalize their stress and are less likely to involve in emotional appraisal as the girls do; hence they usually commit self-serving cognitive errors (which are self-protecting in nature) more frequently than girls. In doing so, they keep their self-esteem and ego protected and experience lower level of stress than girls.

Regarding personality traits, researches claim that boys tend to have higher level of extraversion and openness (Goodwin, & Gotlib, 2004; Shokri, Kadivar, & Daneshvarpoor, 2007) because of their sensation seeking needs and inquisitive nature (Rahmani & Lavasani, 2012; Zuckerman, 1979) than girls. As they possess biological and psychosocial dispositions of curiosity which lead them to indulge in more thrilling and risky behaviors than their opposite gender (Wagner, 2001). Other studies (Shokri et al., 2007) suggested higher level of extraversion and conscientiousness for boys than girls. These findings are also consistent with indigenous perspective of Pakistani society where boys are

comparatively more socially competent, outgoing, and confident, possess better interpersonal skills and enjoy personal liberty more than those of girls. This special treatment fulfills them with energy, thrill and excitement which are essential components of being extraversion and openness to new experiences. Along with this protocol, they are also trained and expected to be responsible for outdoor duties and to be caring and vigilant for the protection of their family and particularly their females. That is why; they have to be organized, dependable, and efficient which are the central features of conscientiousness. For agreeableness, previous studies report higher level of agreeableness for females than boys (Lehmann, Denissen, Allemand, & Penke, 2013; Rahmani & Lavasani, 2012) but no significant differences emerged in the present study. In Pakistani culture, adolescents and children live under parental monitoring for a longer period of time and they are trained to be compliant, cooperative and considerate to adaptable well in a collectivist society. Although boys are given a bit more personal liberty but they have to practice that independence within the societal boundaries. Boys and girls, being within their social roles, are wanted to show conformity to familial and societal norms on notes. Perhaps therefore, they showed almost equal level of agreeable trait in the present study as well.

T-test also further revealed that boys scored significantly higher on mathematical ability, general knowledge, and nonverbal skills whereas girls showed greater abilities for vocabulary and verbal reasoning. The topic of gender variance in intellectual or cognitive competence still lacks unanimity despite a vast debate and a large body of research (Boyle, Furedy, Neumann, & Westbury, 2010; Hannon, 2014; Spelke, 2005; Strand, Deary, & Smith, 2006; Wai, Cacchio, Putallaz, & Makel, 2010) conducted on the topic. Most of these studies show a male lead in mathematical reasoning, problem solving, and nonverbal intellect whereas a female superiority in verbal cognitive tasks. These results are very

much congruent and provide an empirical support for the findings of present study. These studies show that girls perform better on the tasks requiring easy access and usage of phonemics, information processing on semantic level, and fine motor tasks. On the other side, boys usually get higher ratings on tasks demanding visual-spatial memory processing, fluid reasoning skills, motor skills training, and more executive functioning of abstract mathematical calculations and scientific disciplines with advanced logic (Halpern, 2004; Halpern, 2013; Halpern et al., 2007).

Another t-test was computed to examine group differences on the basis of family system (joint/ nuclear) on all the study variables. Results of the study demonstrated that adolescents from joint family system experienced significantly higher level of stress associated with adverse events, more anxiousness, aggression, withdrawal and feelings of rejection than those from nuclear family system. Findings are self-explanatory as joint family system comprises of larger family size with more familial conflicts, loads of pressures, little opportunities to express and fulfill individual needs, and poor quality time for children on the part of parents. These problems contribute in the adversities of life and aggravate the emotional or behavior difficulties of children and adolescents (i.e., they become anxious, irritated, withdrawal and start feeling being rejected) manifold if a stressor is heightened.

Besides, family system plays a significant role in developing and shaping thought patterns of the children. In joint family system, children have fewer chances to fulfill their individual need and most of the time they are striving for identity achievement. Being stuck in this identity struggle and a number of stressors, they are more likely to experience emotional instability and develop self-doubting negative beliefs and may have more intellectual and achievement deficits as a result. The present study also revealed similar evidence and found that adolescents form joint family system experience more self-

debasing cognitive errors and have lower level of cognitive abilities as compared to those from nuclear system. Because, adolescents in nuclear families avail quality time of their parents, better opportunities of education, and have high probabilities to meet their personal needs, therefore, they are more self-confident, experience little emotional or behavioral problems, and have higher cognitive skills as compared to their opposite group. However, no significant differences emerged regarding somatic complaints, self-serving cognitive errors, and personality traits.

One-way analyses of variance were computed to study age and income wise group differences on nonverbal cognitive ability and impact of adverse life events. Results suggested a continuous increase in nonverbal ability with the growing age as this ability was greater in middle and late adolescence than at early adolescence years. Studies (i.e., Brody, 1992; Kyttälä & Lehto, 2008) have documented a curvilinear relationship between cognitive skills such as visuospatial ability, abstract reasoning skills, and other measures of mental ability with an increase in childhood, peak at adolescence and early adulthood and starts declining gradually after age 25. Studies have linked this pattern of progress with the similar curvilinear growth of brain with age i.e. local atrophy of the frontal cortex (Lee, et al., 2005), hippocampus (Geary, 2005), lack of application and practice and other aging effects on brain development (Cavanaugh & Blanchard-Fields, 2006).

No significant differences were seen in nonverbal cognitive ability in lower, middle, or high income group adolescents. Nonverbal cognitive abilities are brain based skills and have neural connection and less likely depend upon socio-economic variables. Many studies have established a predictive link between family income and neuropsychological functions such as memory, language, and reasoning (Engel, Santos, & Gathercole, 2008; Hackman, Farah, & Meaney, 2010; Piccolo et al. 2014) whereas other studies have reported a non-significant effect of socioeconomic status (SES) on cognitive

development of adolescents (Lúcio Hunt, & Bornovalova, 2012; Miranda, Kim, Reiter, Galeano, & Maxson, 2007). Later type of studies or show (Lúcio et al., 2012) ascribe the relation of SES with cognition to better opportunities of schooling and protected social environment etc. studies (Piccolo, Salles, Falceto, Fernandes, & Grassi-Oliveira, 2016; Evans & Fuller-Rowell 2013; Tomalski et al. 2013) further argue that these patterns of associations are more salient at early childhood and then declines or ward off after age nine.

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Impact of adverse life events was significantly higher in middle adolescence group than those in early or late adolescence period. Middle adolescence (age 15-16) is the most critical stage even in the adolescence span as adolescents have to shift from school to college level education. They have to make career choices and particularly in Pakistan rest of the career of adolescents largely depends upon their progress in matriculation exams. Overwhelmed with the academic and future-career pressure, they have higher risk for developing severe stress symptoms and other psychopathologies if face any other trauma or adverse event in their lives.

Making an income-wise comparison, the maximum level of stress related to adverse events was experienced by adolescents from lower income group than adolescents form middle and high income families. A large body of research (Chen, 2004; Cohen, Doyle, & Baum, 2006; Lantz, House, Mer, & Williams, 2005) declared similar findings that socioeconomic positions determine stress; as poor working conditions and economic pressures result in a social disadvantage which lead individuals to experience a greater volume of stress. People with poor economic set ups have little opportunities to meet their needs and have greater health related problems, educational difficulties, and social rejections which multiplex their everyday life stress and may result even in severe psychological instabilities.

One-way multivariate analyses were computed to examine age-wise and income wise group differences on emotional and behavioral problems, verbal cognitive abilities, cognitive errors, and personality traits. The period of middle adolescence is marked by irritability, wide affect blend, and rapid mood fluctuations. This is the time when rebellious tendencies of adolescent become apparent and his obedience towards parents substitutes with conformity towards peer pressures. Moreover, along with biological and psychosocial changes, a lot of school/ academic pressures place them at risk for experiencing maladaptive emotions and disruptive behaviors (Caspi, Taylor, Moffitt, & Plomin 2000; Rowling, 2008; Saluja et al., 2004; Slemming et al., 2010). As mentioned above, this is the time when adolescents (age 15 to 16) in Pakistan are usually studying in their matriculation level which provides a base for future career and academic success. Most of the adolescents are eager to go in medical or engineering field which demand tireless hard work and hold continuous psychological pressure of competition and attaining certain grades (Frydenberg, Care, Chan, & Freeman, 2009). Such academic pressures may lead to emotional outburst and in case of other adversities of life; the negative outcomes are multiplied in numbers. Thus, middle adolescence is much more stressful than early or late years of adolescence age.

Findings of the study further declared significant difference on verbal cognitive abilities between the three adolescent age groups. Late adolescence group showed the maximum level of verbal abilities (vocabulary, verbal reasoning, mathematical ability, and general knowledge) than early or middle adolescence groups. Verbal cognitive ability, also known as crystallized intelligence, is a lifetime process of cognitive growth and learning through school and daily life activities. Since verbal skills are encoded and stored in long-term memory which has a controlling and regulating unit in brain known as hippocampus, therefore the growth and progress of verbal cognitive skills have consistently been linked

with the development and maturation of hippocampus (i.e., Qin et al., 2014). In another study (Rivera, Reiss, Eckert, & Menon, 2005), researchers found greater activity in hippocampus of adolescents while learning various cognitive tasks than those f younger children. These studies are based upon the argument that hippocampus is comparatively immature in childhood and gradually matures with the growing age (develops in childhood period, show stellar improvement during adolescence and adulthood and starts declining after age 65) which also come in congruence with the results of the present study.

For self-debasing cognitive errors, significant age differences were observed where maximum level of these distortions occurred in early and middle adolescence groups than those were seen in late adolescence group. However no significant differences were observed between early and middle-aged adolescents. Although, the whole span of adolescence is regarded as sensitive and vulnerable but variations in different spheres (i.e., cognitive, emotional, and social) have been apprised with respect to early, middle, and late years of this period. Early and middle adolescence characteristically hold egocentricity, concrete thinking, emotional immaturity (Stang & Story, 2005) and identity diffusion or moratorium crises which make them emotionally more self-conscious and self-focused (Adams, Abraham, & Markstrom, 1987; Kroger, Martinussen, & Marcia, 2010). While lacking necessary skills of problem solving, if adolescents at these stages face adverse life experiences, their tendencies of self-consciousness may turn to negative self-evaluations and resultantly lead to maladaptive cognitive paradigm.

Other studies believe that these self-degrading biases may stem from the perceived inability of environmental control and poor coping appraisal (Barlow, Allen, & Choate, 2004; Weems et al., 2007). As the adolescent moves towards the end of teen age, their cognitive and emotional development starts maturing; a blizzard of transitional strains starts simmering down along with a status transition from moratorium to identity

achievement (Kroger et al., 2010). Their decision making and coping appraisal become more rational and help them in receding such cognitive impairments.

Regarding personality traits, significant age differences emerged for extraversion and conscientiousness but not for neuroticism, openness, and agreeableness. Results found that extraversion and conscientiousness had a higher level in early adolescence and late adolescence than those in middle period. Both longitudinal as well as cross-sectional studies (Klimstra et al., 2009; Roberts et al., 2006; Srivastava et al., 2003) have highlighted age differences in personality during three phases of adolescence period. These studies showed significant positive association of age with extraversion and conscientiousness but non-significant effects for agreeableness during adolescence. Studies on conscientiousness (Bleidorn et al., 2013; Denissen et al., 2013; Roberts & Wood, 2006) have reported similar type of age related differences suggesting that conscientious is more prominent in childhood and early adolescence then declines in middle years, regains maturity in late adolescence and keeps maturing in adulthood. For neuroticism, previous studies (Allemand, Zimprich, & Hendriks, 2008; Klimstra, et al., 2009; Lucas & Donnellan, 2009; Roberts, et al., 2006) have found significant age differences reporting a gradual decline in neuroticism as adolescents age but the present study found a non-significant difference across three groups of adolescents. The reason behind this inconsistency may be the nature of the sample as the present study targeted the adolescents with experience of adverse life events. Adverse life event itself is a threat to emotional stability particularly during the epoch of adolescence which is even more sensitive due to its transitional nature. Thus there is a possibility that the emotional distress or instability may carry the same magnitude for adolescents with adverse life experiences. For openness to experience researches (i.e., Soto et al., 2011) have reported similar results

showing an age wise increase in the openness trait during adulthood but no age differences were observed within adolescence age groups.

One-way multivariate analyses were also computed to examine income wise comparison on the study variables (i.e., emotional and behavioral problems, verbal cognitive abilities, self-debasing and self-serving cognitive errors, and personality traits). For emotional and behavioral problems, findings revealed significant differences between low, middle, and high income group adolescents. Results illustrated that emotional and behavioral problems were significantly lower among high income group as compared to middle or lower income groups. However no significant differences emerged between low and middle income groups. These findings are quite congruent with the existing data (McGrath & Elgar, 2015; Reiss, 2013) which suggested greater level of emotional and behavioral difficulties in adolescents from lower income status than those with more affluent families. McGrath and Elgar (2015) explained these differences with the help of numerous contextual factors e.g. material deprivation, poor nutrition, ill health facilities, disadvantaged locale, social discriminations and many others. However, the present study added a finding in the literature by showing almost the same level of problem behaviors among lower and middle income group adolescents. The reason behind may be that people of middle socioeconomic class not only have the pressure to keep their status upgraded than lower socioeconomic class but also have to compete with the upper class to attain the competitive facilities of life. Moreover, in Pakistan, mostly people in middle class have joint family structure which itself is an economic burden and escalate their life stress. In face of these pressures, they are in continuous struggle and race of maintain their financial stature, living standards as well as educating their children which carries more economic encumbrance and multiply the problem, physical, social, or emotional in their lives.

For verbal cognitive abilities, the present study revealed significant income wise differences by showing that adolescents form high income group had higher level of verbal cognitive skills than those from middle or low income groups. These studies are again in line with the existing literature (Farah et al., 2006; Gottfried, Gottfried, Bathurst, Guerin, & Parramore, 2003; Noble, Norman, & Farah, 2005) showing high level of cognitive abilities among children with economically advantaged families in comparison with economically disadvantaged children. Although parents across different socioeconomic statuses give maximum facilities to their off springs up to the limit they can but their poor resources make their children vulnerable for many disadvantages. Studies show (De Bellis, 2005; Grassi-Oliveira, Ashy, & Stein, 2008) that child neglect in any way slows down the growth of brain. Moreover, children from lower income class receive less cognitive stimulation and poor academic facilities (e.g., books, internet sources, coaching facilities, and other learning materials) due to their restricted purchasing power which ultimately limit their cognitive growth and learning abilities.

For self-debasing cognitive errors, the present study revealed that adolescents from middle income group committed greater level of these errors as compared to adolescents from low or high income groups. As discussed previously, the multi-level economic pressures and upward social comparison may put them under stress, decrease their self-esteem, and distort their thinking pattern by making it more pessimistic about themselves and the world. Regarding personality traits, adolescents from lower income groups showed higher level of neuroticism than other two income groups. The reason behind may be that poor financial position and related stressors of the family may make the children emotionally disturb and instable and lead to neuroticism. On the contrary, extraversion, agreeableness, and conscientiousness were high among adolescents from high income group than those from middle or low income groups. Affluent families are, in fact, at

better position to provide a healthy environment and maximum facilities of life need children to flourish physically, psychologically, socially and emotionally. Such healthy and fulfilled environment ultimately has a positive effect on a child and cause growth in positive traits of his personality.

Conclusion

The present study found that experience of adverse life events led to higher level of emotional and behavioral problems (i.e., anxiousness, aggression, social withdrawal, somatic complaints, academic problems, and feelings of rejection) among adolescents. As expected, self-debasing cognitive errors (i.e., catastrophizing, personalizing, selective abstraction, and over generalization) and neuroticism exacerbated the effect of adverse life experiences on emotional and behavioral problems. Verbal cognitive abilities (i.e., vocabulary, verbal reasoning, numerical ability, and general knowledge), extraversion, openness, agreeableness and conscientiousness alleviated the effect of adverse life events on adolescents' emotional and behavioral problems. Contrary to the assumption, self-serving cognitive errors (self-centeredness, blaming other, mislabeling, and assuming the worst) egressed as protective factors and minimized the effect of adverse life events on emotional and behavioral problems. Study further depicted significant group differences for study variables on gender, family system, age, and family income.

Implications

The study assumes implication on both, theoretical as well as practical grounds. On theoretical stand point, the present study contributed into the indigenous literature by devising the scale (ALES) to measure adverse life experiences of adolescents. Although a number of instruments have already been devised for the purpose but those measure are either adult-specific or hold some cultural limitations; therefore, lack confidence for blind application in Pakistani culture. ALES was developed to bridge these gaps and intended to

measure a broader range of adverse events (culture and age specific) that adolescents may experience during their transitional phase. Further, the present study contributed to the indigenous literature by translating HIT-Q into Urdu language which may facilitate researchers, clinicians, and other stake holders in the assessment and interventions targeted for the youth with conduct or delinquent problems. Moreover, examining the relationship of adverse life events to adolescent psychopathology and the role of cognitive and personality factors will provide insight into the mechanisms underlying the emergence of emotional and behavioral problems in adolescence.

On practical grounds, ALES, being an indigenous measure, will serve research and clinical purposes diagnosing etiological factors of adolescent psychopathology. The study also highlights the need and may facilitate school authorities, NGOs, sweet homes, and clinicians with a main focus to develop appropriate prevention and intervention plans for adolescents with a main focus on life adversities and problematic behaviors. As Pakistan is pervaded with socioeconomic crises, terrorism, extremism, and multitude of other adversities, therefore the present study identified a serious need to establish Psychological Rehabilitation Centers to provide psychological first aid to traumatized people, particularly, youth in Pakistan.

Limitations and suggestions

Notwithstanding the potential implications, the study holds some limitations as well. First of all the present research followed a cross-sectional and quantitative design. In future, qualitative studies are suggested for the in-depth and comprehensive exploration of psychiatric problems of such vulnerable population following traumatic experiences in their lives. Moreover longitudinal design would help understand the trajectories of psychopathology, as well as, may help identifying many risk and protective factors which may serve as mediators or moderators in the path of psychopathology.

Another limitation of this study was the selection of the problems explored. As the present study solely focused on emotional and behavioral problems of adolescents, whereas, other psychiatric problems such as PTSD, identity problems, and adjustment difficulties would better illustrate mental health of traumatized youth. Future researches, therefore, are suggested to examine these psychological problems of adolescents as well. Moreover, a more diverse and comparable sample (including general population/ untraumatized youth) is suggested for future research for a more dynamic and holistic understanding of adolescents' difficulties and psychosocial changes in face of adverse life experiences.

Similarly, present study rested upon self-report measure/ single informant approach whereas a multi-informant approach would give an in-depth exploration of the problems of traumatized youth and would also help minimizing respondent biases which may hamper the generalizability of the study findings. Lastly, as the study highlighted the problem behaviors of adolescents who experienced any adverse life events, it did not advise any intervention plan or coping mechanisms to combat and effectively deal with the stress associated with adverse life events and resultant psychopathology. In future prevention and intervention studies are suggested in the light of need assessment, which the present study highlighted.

ADVERSE LIFE EVENTS AND ADOLESCENTS' EMOTIONAL AND BEHAVIORAL PROBLEMS: COGNITIVE FACTORS AND PERSONALITY TRAITS AS MODERATORS

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