EFFECTIVENESS OF PRESCHOOL PATHS (PROMOTING ALTERNATIVE THINKING STRATEGIES) CURRICULUM TO ENHANCE SOCIAL-EMOTIONAL COMPETENCE

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2016

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A dissertation submitted to the

Dr. Muhammad Ajmal
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Islamabad-Pakistan

In partial fulfillment of the requirement for the degree of

DOCTOR OF PHILOSOPHY

IN

PSYCHOLOGY

2016

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Dedication

This is to my dear father, Dr. Inam-ul-Haq (Late). I wish I could talk to you, tell you that I have done it and share all my worries and frustration regarding future but I know this is not possible. Life is difficult without you but thanks for all your support and encouragement that has enabled me to accomplish big things in life. Love you and miss you a lot.

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ACKNOWLEDGEMENTS

While writing these lines, I have been thinking of so many people who inspired me and who were there during this long journey. My first and sincere appreciation goes to Dr. Naeem Tariq, my supervisor, for so many reasons. The advancement in the area of developmental psychopathology in Pakistan was his dream and he encouraged me to join his dream. It was his eagerness, passion and confidence that inspired me to choose this challenging project. Not only he taught me to be courageous to dream about seemingly impossible things but also he groomed me in a way to stand up for my ideas. He gave me liberty to conceptualize and conduct the project according to my own interest yet his intellectual input and constant supervision enabled me to accomplish this task, which would be impossible without his support.

I feel myself very lucky to have the opportunity to work with Dr. Mark Greenberg, a leading name in the field of prevention science and evidence-based programs. His comments, inputs and support were always there with me during this project. During my fellowship at Prevention Research Center, Penn State University, USA, he provided me with every opportunity to experience how prevention projects are conceptualized and conducted in real life settings. It was his generous support that enabled me to continue with the passion of introducing evidence-based programs in Pakistani context. I can't forget how his appreciative comments on my work used to motivate me to complete this project.

Looking back to my life, what I was, from where I started and what I have accomplished so far, I realize that the credit goes to only one personality, my dear

father. It is really hard for me to write and express what he was for me. Form my childhood till his last breath he was the one who used to tell me that you can do everything, no matter how hard the circumstances would be. He made me an independent girl who can survive on her own. He wanted me to be the best in everything, academics, at my work place and even at household chores and for that he provided with every possible support and facility needed. I was his best child and he was proud of me. My doctorate degree was his dream and he used to say to me that I want to live only to see you holding that degree. Now that he is no more here, I feel these accomplishments have somewhat lost their meaning. But I am satisfied that I lived up to his expectations and will try even harder to fulfill his dreams.

The story of my long, tiring journey would be incomplete without mentioning one name, my best friend Nigum. We have been friends for 10 years now and I feel myself lucky to have such a dear friend like her. We have shared some of the best times of our lives and also were there for each other during the bad times. When I look back to my stay at QAU with her, it just brings a big smile on my face. From hostel problems, frustrations of our research projects, family problems, accommodation issues, to insane hanging outs in almost all restaurants in Islamabad, we had shared every moment of fun and distress. I can't find words to thank her and her family for being there for me during some very disturbing times especially during last year of my degree. I wish her success and happiness in future.

Special thanks to my dear friend Dr. Tamkeen Malik for her support and guidance throughout the project. Thanks to Asia for being such a nice friend and group fellow.

There are so many other people who have supported me in this project at different levels. I would like to extend my sincere gratitude to Elaine Barrena who took me to different project schools in Pennsylvania during my stay at Penn State University and she is a great friend ever since. I would also like to thank Dr. Shahida Naeem, Mrs. Shakeel, Amera Hamid, Salma Iftikhar and Ayesha Fazal for their support in program adaptation and implementation. Special thanks to my project staff especially Shagufta who coordinated the program implementation and worked with me to make this project a success.

I would also like to mention here the support and care from Sahira and Sumbal. Thanks to Mona and Sheena for providing me with such a homely atmosphere. To my siblings, Farooq, Fatima, Sidra, and Hira. Special thanks to Ali, Hassan and Kashaf for their innocent prayers.

Ayesha Inam

ABSTRACT

Evidence on growing trend of mental health issues in children in the context of socio-political instability in Pakistani society calls for remedial efforts at early childhood stage. The present study is conceptualized to evaluate the effectiveness of Preschool PATHS Curriculum to enhance social-emotional competence of children. The curriculum was culturally adapted in the context of urban Pakistani community using heuristic framework of program adaptation. A quasi-experimental non-equivalent waitlist control group design was used for the effectiveness trial. The sample consisted of 101, 4 years old preschool children from seven classrooms of different private sector school in Rawalpindi and Islamabad, which were selected on the basis of teacher's perception of frequency of behavioral problems. The classrooms were further divided into control and intervention groups. Pre and post assessments were collected on revised version of Kusche Emotion Inventory-Receptive Subtest (Kusche, 1984), Child Behavior Checklist (1.5-5)-CTRF (Achenbach & Rescorla, 2000), and Social Competence Scale-Teacher Version (Conduct Problems Prevention Research Group, 1990). Intention To Treat (ITT) analysis was used to assess effectiveness of intervention on outcome measures using last observation carry forward (LOCF) technique for sample attrition. Analysis of Covariance (ANCOVA) was used to adjust the effects of intervention for scores on outcome measures at baseline. Gender effects on intervention status were calculated by Repeated Measures Analysis of Variance (ANOVA). Effect sizes were calculated for significant intervention effects. Results showed a significant intervention effect on social-emotional competence and behavioral problems of preschool children. However,

there were non-significant differences between control and intervention group on accuracy scores of emotion recognition, prosocial/communication skills and academic skills at posttest. Recognition of emotions variable was no more significant after controlling for classroom strength. Significant gender effects were found for impact of intervention on behavioral problems where boys showed decrease in total behavioral problems and externalizing problems. The study provides preliminary evidence of effectiveness of Preschool PATHS curriculum for Pakistani children. With all the limitations of the study, the present investigation can be taken as a critical first step towards understanding the area of prevention science in indigenous context.

INTRODUCTION

Chapter-I

INTRODUCTION

Developmental Psychopathology Approach

The field of developmental psychopathology has emerged over the past three decades as a comprehensive framework primarily concerned with the examining human development and adaptation through basic studies and through empirically based interventions designed to enhance positive development and prevent behavioral problems (Cicchetti & Toth, 2009). There has been a debate about defining the discipline. It can be defined as the study of normative development of behaviors (Masten & Tellegen, 2012). Developmental psychopathology is a scientific field where the main focus is explicating the interaction among the biological, psychological and social aspects of normal and abnormal development throughout the lifespan.

Developmental psychopathologists also strive to understand the role of individual differences in the interaction of the multiple levels of analysis which could impact normal or abnormal behavioral patterns emerge and sustain. In practice, this requires a thorough understanding and appreciation for the ongoing process of developmental changes, an analysis of the risk and protective factors in the individual and the environment, the investigation of how developing functions and competencies may interfere with the expression of a disorder or may develop new symptoms and difficulties, and the acknowledgement that different stressful circumstances may

ultimately result in different biological and psychological difficulties, depending on the developmental period in which the stress occurs (Masten & Cicchetti, 2010).

The interplay between risk and protective factors is very important as it influences the development. These risk and protective factors impact the quality of interaction between various biological and psychological systems. Developmental psychopathology research is more probabilistic in nature. However deterministic approach is equally important in conceptualization of the field as various risk factors have been shown to be harmful to normal functioning and ultimately lead to the development of psychopathology.

Furthermore, the role of different protective factors is crucial throughout development, especially since these individual and environmental sources of protection helps in adapting to different situations and in building resilience. In addition, some protective factors also sustain the competent functioning in specific risk situations. Research on different biological and psychological protective factors has played an important role in identifying processes that lead to rehabilitation or resilient adaptation in risk environments. Moreover, understanding the dynamic interaction between risk and protective factors help in conceptualizing developmentally based prevention models. If the failure to develop a secure attachment with primary caregiver is identified as a risk factor for developmental pathologies, then intervention can focus to modify it and the probability of successful adaptation is enhanced. Through increasing the relative balance between protective and risk factors, the potential for healthy development and reducing the chances of psychopathology can be ensured.

Several facets of developmental psychopathology are essential in developing the understanding that how different competencies at one point in development are linked with healthy development at later times in life. First, it asserts that development occurs through complex interactions between individual (genes, biological, and psychological factors) and environment at multiple levels (Rutter & Sroufe, 2000). The proposition of co-occurrence of multiple factors influencing development leads to the assertion that individuals with similar behaviors can ultimately have different developmental outcomes whereas those with different initial behaviors can show very similar patterns. Although development is assumed to be coherent (Cicchetti & Toth, 2009) in terms of displaying adaptation patterns, there are considerable chances of interruption and change. Based on this idea it can be proposed that similar adaptive functions of development at one time point can be related to different developmental outcomes.

Second, the approach is guided by developmental systems theory (Bronfenbrenner, 1979; Granic & Hollenstein, 2003) which proposes that human beings are living systems and are a part of a larger ecological system of various influences that shapes development. Interactions occur at multiple levels from individual to environmental level (Shonkoff, 2010) and these bidirectional exchanges are the dynamic processes of human development.

Third, longitudinal studies are an important method for developmental psychopathology. These longitudinal methods help in examining individuals and contexts at various levels over time. Cross sectional studies are also important as an initial step in establishing association among various factors involved in the processes of development (Garcia-Coll, Akerman, & Cicchetti, 2000). But they cannot account

for individual variations in factors and timing across levels and therefore may yield misleading conclusions. Retrospective studies can also lead to inconclusive information about continuity and change in development. Another equally important feature of longitudinal studies is the ability of researches to investigate the developmental transition. Living individuals show an increased variability in functioning at these points of change (Granic, Hollenstein, Dishion, & Patterson, 2003) and also can be amenable to interventions.

Finally, the developmental psychopathology approach focus on both adaptive and maladaptive forms of behavior and positive and deviant functioning are considered to be equally informative (Masten & Cicchetti, 2010). Important here is the understanding of positive and competent development, deviations from the normal patterns, and how these competencies protect from negative effects of risk factors. Researches conceptualized in the developmental psychopathology framework are advancing the understanding of how healthy development occurs and how interventions are designed to keep the development on track.

Social- Emotional Competence and Early Development

Children's social-emotional competence is a defining feature in early childhood development, which is a crucial skill-set for healthy personality development of young children. Supporting children's development of social-emotional skills would ultimately affect their risk for maladjustment. Social competence in early childhood is best understood as children's ability to engage in social interaction, attain social goals, make and maintain friendships, and achieve peer

acceptance (Rubin, Bukowski, & Parker, 2007). Emotional competence in early childhood consists of children's ability to express and regulate emotion consistent with parental/societal expectations and children's ability to understand the causes and consequences of their own and others' emotions (Saarni, Campos, Camras, & Witherington, 2008). Literature suggests that emotional development precedes all other forms of development and it underpins children's social competence. A successful social interaction with peers and adults would require that children express and regulate their emotions appropriately while applying their knowledge of emotions to respond properly to peers' emotions and behaviors (Saarni, 1999).

Different models have been proposed to explain the concept of social-emotional competence. Crick and Dodge (1994) proposed an information processing model which explains the interpersonal interactions between individuals. This model focuses more on the information processing mechanism of a social interaction that includes interpreting and reacting to social cues by children. They also described some individual factors that may influence the ability to send, receive and experience these social cues. So broadly the model is more about the social competence and cognitive factors of information processing and gives less emphasis to the affective part of that social interaction.

Mayer and Salovey (1997) proposed the concept of emotional intelligence with particular focus on its link to social interactions. They asserted that emotions play an important role in an individual's adaptation in the environment and growth. Thinking through different emotions and managing them would also promote cognitive growth of children. Importance of emotions is always been discussed but the link between social-emotional skills and its positive impact is less discussed.

Saarni (1999) is perhaps the first theorist who explicitly asserted that knowledge and understanding of emotions is contextually embedded in social interactions. So the two concepts can't be seen in isolation. She focused on the developmental conceptualization of these competencies. She described eight basic emotional skills which are necessary for an individual in order to be self efficacious in emotion exhibiting social situations. These are:

1. Awareness of own emotional state:
2. Recognition of other's emotions
3. Use of emotion language
4. Ability to be empathic
5. Realization that inner feeling state and outward expression of emotion can be different
6. Learning to cope with difficult emotion by using self regulating strategies
7. Understand that human relations and interactions are largely defined by emotions
8. To be fully in control of one's feelings and accept the emotional experience that one is going through

Developing further on Sarrni's model, Halberstadt, Denham, and Dunsmore (2001) proposed the concept of affective social competence which is an effort to balance out the over emphasis on either one of the components in previous theories. The model includes three basic components; sending affective messages, receiving then and experiencing the affect component during the process. Within each component, four pragmatic abilities are necessary to have a successful social interaction. These essential four features are awareness, identification, social context

and managing the behavior during the process. Halberstadt, Denham, and Dunsmore (2001) emphasized the importance of dynamic nature of the phenomena and outlined the importance of being alive or mindful about the process so that an individual's active learning would develop their social-emotional skills.

Evidence has established a link between healthy social-emotional development to various developmental outcomes (Barblett & Maloney, 2010; Denham, 2006). Children who are socially and emotionally competent would develop better social relationships that are important for success in life (Mendez, Mcdermott, & Fantuzzo, 2002). Social-emotional skills impact academic performance as children who feel socially competent and happy generally make good students (Brackett, Rivers, Reyes, & Salovey, 2012). Social-emotional competence also lay the foundation of better mental health acting as protective factor and reduce the probability of developing emotional and behavioral problems (Rhoades, Warren, Domitrovich, & Greenberg, 2011).

Emotional and Behavioral Problems in Early Childhood: Why Preschool Age is Important

There is an accumulation of evidence that suggests major changes in social-emotional development and understanding during early childhood especially between the ages of 3 and 6 years (Ashiabi, 2000). Studies shows that behavioral problems developed during preschool period particularly conduct issues and hyperactivity tend to persist in later years of life (Najman, Bor, Andersen, Callaghan, & Williams, 2000;

Tick, Van Der Ende, Koot, & Verhulst, 2007; Webster-Stratton, 1996). Literature from across the globe suggests the increasing trend of behavioral problems in preschool children. The prevalence of parent-reported social-emotional and behavioral problems of preschool children in USA between 1975 and 1996 has ranged from 10-15%, where oppositional, defiant, and aggressive behaviors were the main reason for referral to psychiatric services (Campbell, 1995). The prevalence rate of 16-18% for behavioral problems was reported in children of 1 ½ years of age from general population in Denmark (Skovgaard et al., 2007). In another research, Erol, Simsek, Oner, and Munir (2005) reported that among the total population of kindergarten children in Turkey, 11.9% children were in clinical range while 18.6% were in borderline range of behavioral problems.

In Iran, the prevalence of disruptive behaviors specifically ADHD as reported by parents of preschool children was 25.8% (Meysamie, Fard, & Mohammadi, 2011). Thabet, Stretch, and Vostains (2000) found that prevalence of emotional and behavioral problems at age 3 was 10.9% while it 11.1% at age 6. A recent meta-analysis reports data from 6 Sub Saharan countries showing 14.3% prevalence rate of behavioral problems in children and adolescents (Cortina, Sodha, Fazel, & Ramchandani, 2012). Studies have also reported gender differences in childhood behavior problems where severity of overall problems and externalizing behaviors specifically physical aggression is mostly associated with boys (Crick et al., 2006; Liu, Cheng, & Leung, 2011; Shala, 2013; Vahedi, Farrokhi, & Farajian, 2012; Webster-Stratton, 1996). Research evidence show that these childhood behavioral problems that emerg at an early stage of development are amenable to treatment. Yet it is more important to initiate prevention efforts for healthy socio-emotional

development thus reducing the risk of behavioral problems (Greenberg, Domitrovich, & Bumbarger, 2001).

Prevention Science: Basic Concepts

The concept of 'prevention' has emerged in psychology since the dawn of 20th century and its roots can be traced back to the field of psychiatry where it was deemed as prophylactic in nature (Albee & Dickey, 1957). However, it has been taken seriously in the context of developmental psychopathology in the later half of the century (Sarason, Levine, Goldenberg, Cherlin, & Bennett, 1966). Prevention science primarily focuses on the complex biological, psychological and social factors that play an important role in developing mental illness. Preventive interventions aim to reduce particular risk factors and enhance protective factors in order to disrupt processes that lead to dysfunctional behaviors. In essence, prevention science is a complementary interplay of science and practice, focusing both on basic research to identify etiological factors for maladaptive development and applied research to develop remedial strategies (Coie et al., 1993).

Historically prevention science has been defined with various parameters in different perspectives. Initially, the concept was viewed with public health perspective focusing on primary, secondary and tertiary prevention strategies (Caplan, 1964). Cowen (1984) argues for health promotion, describing prevention as going beyond the absence of mental illness. He proposed five major elements; (1) forming healthy early attachments; (2) acquiring age appropriate competencies; (3) developing in an environment that favors healthy development; (4) having a sense of control over one's

life; and (5) coping positively with stress. Albee (1986) focused building individual competence, security and optimism as protection from disorder and disease. Gordon (1983) suggested an alternative explanation to define the paradigm of prevention based on costs and benefits of delivering the intervention to the targeted population. The Institute of Medicine (1994) emphasized that the concept of prevention should be viewed into a broader context. The IOM report describes the concept of prevention in the form of a protector which is as follows

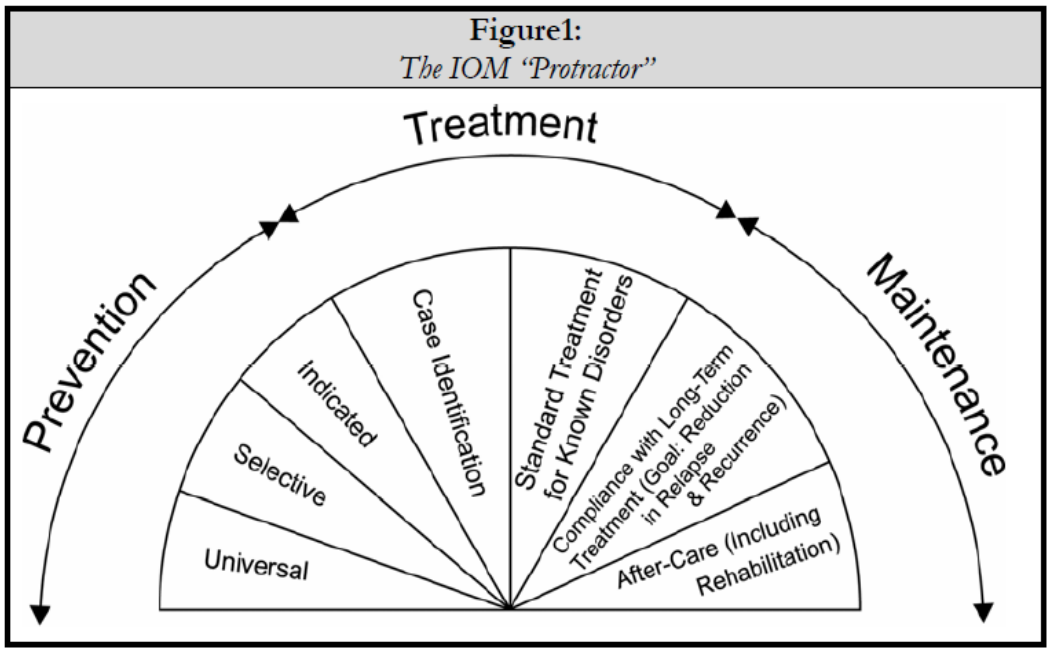

Figure 1. The IOM Protector

The figure shows prevention is a comprehensive paradigm that reduces the probability of new cases of disorders at three levels. Treatment and maintenance are primarily the next steps that occur after the identification of disorder.

Based on the broader context, the Institute of Medicine (1994) has defined three levels of prevention. Universal preventive interventions are the broadest form of

interventions proposed by the Institute of Medicine's report (1994). Universal programs address a group as large as the total school-aged population in a country, or may include children in a specific grade or age level. There are some advantages and disadvantages of using this prevention approach. A main advantage is that there is no labeling so individuals receiving any universal intervention are not stigmatized in any way. Universal programs also prepare the setting for subsequent targeted programs. These programs usually address community level causal factors. Also, these programs tend to include the middle class within a society. On the other hand, universal preventive efforts have little appeal to public/institutions in general or policy makers/funding agencies in particular (Greenberg et al., 2001).

Selective preventive interventions focus those individuals who are at risk of developing mental disorders at a significantly higher rate than average. This category represents the direct application of Gordon's understanding that identified risks for developing mental health condition can help preventive efforts (Burkhart, Gyarmathy, & Alessandra, 2011). Only in this category risk is explicitly used as a criterion for recruiting individuals into interventions. Social skills program for children from poor neighborhoods and life skills education for people from disaster hit areas are examples of selective intervention strategies. While the focus of selective or targeted programs is on identified risk factors within individuals or environment, indicated programs include those individuals who are demonstrating early signs of problems but yet not diagnosed as having a mental disorder. The advantage of using these two approaches is to address the problem very early and also to include individuals who are actually in need of these services (Offord, 2000).

Evidence Based Practices in Prevention

The concept of evidence based practices in preventive interventions emerged from the medical science's model of evidence-based medicine which is defined as the use of best available evidence in making decisions about the care of patients (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996). With the advancement in the field of preventive interventions, first the focus was to develop theory based intervention programs for poor outcomes and problem behaviors, and later, to establish effectiveness of these interventions through well designed empirical researches (Kyler, Bumbargar, & Greenberg, 2005). With the accumulated research evidence on effectiveness of interventions, it became more and more relevant to establish guiding principles or standards for best practices (APA Task Force on Evidence-Based Practice, 2006). Also, policy makers, practitioners, and civic leaders raised the question of accountability of usage of public funds on preventive interventions (Flay et al, 2005). Given this context, there was a need to establish certain standards to assess the effectiveness/credibility of interventions.

Different agencies and organizations have outlined various standards to establish the effectiveness of preventive interventions. Some of the promising efforts in this regard are discussed as under

Blueprints for violence prevention. The University of Colorado's Center for the Study and Prevention of Violence (CSPV) was one of pioneering groups in developing standards for best practices in preventive interventions (Kyler et al., 2005). The CSPV (2004) reviewed 600 universal and selective violence prevention

programs for age groups ranging from birth to 19 years, on the basis of following three main criteria

1. Evidence of deterrent effect with strong research design: the program should show effectiveness in preventing and reducing the problem behaviors through the use of strong research design employing experimental design with randomization or quasi-experimental design with matched groups.
2. Sustained effects: sustained intervention effects at least at one year follow-up with no subsequent loss of program effects.
3. Multiple site replications: successful program effects in at least one diverse setting or population.

The programs fulfilling all of the three criteria were termed as 'model' programs while those meeting only first condition were termed as 'promising' programs. Out of 600, 11 were termed as model programs while 21 were identified as promising programs.

The substance abuse and mental health service administration (SAMHSA, 2005). SAMHSA (2005) provided the 'Strategic Prevention Framework' (SPF) to identify and select programs that provide best evidence in reducing problem of substance abuse according to local needs of a community. The framework defines evidence base for preventive intervention according to four guidelines

1. The program's theory of change is based on clear conceptual framework
2. The content and structure of the program is similar to those interventions listed in federal registries and peer reviewed journals

3. Documented evidence of effectiveness in past studies (either randomized control trials or quasi experimental design) fulfilling the criteria of scientific evaluation
4. The intervention is deemed effective by prevention science experts, local practitioners, and community stakeholders

The Society of Prevention Research (SPR) standards of evidence (2004). The society of prevention research has formulated in-depth criteria for evidence based interventions. According to guidelines provided by SPR, evidence based practices can be divided into three categories with following criteria:

Criteria for efficacy. Efficacy refers to positive effects of a particular program under optimal controlled conditions. Programs termed as efficacious should fulfill the following criteria:

1. Specific efficacy statement
2. Clear program description that allows replication and measureable outcomes
3. The design of the study should have clear of causal statement using experimental design with control condition and random assignment.
4. Generalizability of findings where the group for which intervention is useful should be defined
5. There should be precision of outcomes where main effects are established with statistically significant effects and practical public heath impact. Effects should be sustained for at least one long term follow up. At least two replications should demonstrate positive results through experimental design.

Criteria for effectiveness. The program is termed as effective when produces positive results under real life settings. Effective programs should fulfill the conditions of efficacy along with following criteria:

1. Manuals, trainings and technical support
2. Experimental design would be desirable but alternative designs like time series, matched controlled designs can also be used
3. Replication should be done with at least two high quality evaluation studies with adequate statistical power. Also one independent replication is recommended in different conditions

Criteria of broad dissemination. Broad dissemination refers to up-scaling of the intervention. For an intervention to be up-scaled, it should not only fulfill criteria of effectiveness but also ensure that it can be efficiently used by service providers like teachers and counselors (Flay et al., 2005).

APA standards for evidence base. The APA Task Force on Evidence-Based Practices (2006) has discussed two main dimensions of evidence base for psychological interventions. Efficacy dimension focuses on strength of evidence in establishing causal relationship between intervention and the disorder. The clinical utility dimension reflects on generalizability, replication, client's acceptance and cost effectiveness of the intervention program.

Although stated differently, yet every agency somehow defined the same criteria for evidence-base programs. The most important and promising feature is a strong research design. For evidence based practices, randomized control trails are

considered to be the gold standard for establishing efficacy of the programs. Sound theoretical base is also of crucial importance for a program in order to deliver its intended purpose.

The field of Prevention science is highlighted by the integration of developmental theory with approaches from public health, epidemiology, sociology, and developmental psychopathology in conceptualization, design, and implementation of interventions (Coie et al., 1993). As developmental approach has broadened its horizon by including ecological analysis (Bronfenbrenner, 1979) and examination of causal factors (Institute of Medicine, 1994), developmental theory has provided a strong framework for defining and organizing the field.

Social-Emotional Learning (SEL) Approach in Prevention

Integrating the concepts of developmental psychopathology and prevention science, the social-emotional learning approach emerged as unique paradigm of prevention of childhood emotional and behavioral problems and developing positive competencies in children in safe and learning environments of schools (Greenberg et al., 2003). Essentially, schools are social places and learning can't be done in isolation rather children learn with the help of teachers along with their peers. The role of family is also crucial in this respect. As discussed earlier that emotions are at the very base of our social interactions so feelings and emotions can facilitate or disrupt the learning process and ultimately children's academic success. Schools have been involved in developing social responsibility and moral character in children so responsible behaviors in classroom are deemed as an important perquisite for

learning. Research evidence shows that prosocial behavior in the classroom is linked to positive academic outcomes (Tsolou & Margaritis, 2013). On the other hand, conduct problems often results in with poor academic achievement (Hyland, Mháille, Lodge, & McGilloway, 2013). Besides these correlational findings, research has focused on designing interventions to enhance social and emotional learning, and establishing evidence that these skills improve children's success in school and life (Durlak & Weissberg, 2011). Bywater and Sharples (2012) emphasized using a mix model approach that includes universal and targeted interventions for more desirable outcomes.

Historically, the interest in social-emotional learning came into limelight with the emergence of concept of emotional intelligence by Daniel Goleman where he asserted that children who can manage their emotions and show empathy towards others will have better attention and learning skills (Goleman, 1995). The second influence on social-emotional learning approach was from the concept of multiple intelligences by Howard Gardner. Gardner (1993) proposed that human beings have different kinds of intelligences that help them in interacting with the world around them and find solutions to different problems in this social world. Intrapersonal intelligence is the kind of intelligence that unable us to understand ourselves and the world around us. These intelligences and skills are fundamental in order to be successful in learning and working environment.

Collaborative Academic, Social, and Emotional Learning (CASEL, 2013) defined social emotional learning as the approach through which children improve their abilities and skills to integrate thinking, feeling, and behaving to achieve important goals in life. Children with better SEL skills are able to recognize and

manage their emotions, develop healthy relationships, set positive learning goals, and make responsible decisions (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). Two components are focused in SEL approach

Person centered focus. This approach particularly deals with five key SEL competencies in individuals which are as follows

1. Self-Awareness: that includes ability to identify and recognize emotions, accurate self-perception, recognize one's own strengths, needs and values, self-efficacy
2. Social awareness: empathy, perspective taking, , difference recognition, and respect for others
3. Self-Management: impulse control and ability to manage stress, self-motivation and discipline, goal setting and organizational skills
4. Relationship Skills: communication, social engagement, and relationship building, working cooperatively, negotiation skills, refusal and conflict management, ability to seek help
5. Responsible Decision-Making: situation analysis and problem identification, problem-solving skills, evaluation and reflection of the solutions used, personal, social and ethical responsibility

Environmental focus. The hallmark of SEL intervention approach is that it not only focuses on developing individual competencies but also emphasizes on providing a nurturing environment that ensures the effective learning. That includes factors ranging from classroom environment to overall school ecology. Some of the

important features are communication styles, Classroom structure, high performance standards, and school climate. Open parental communication and involvement of community is also ensured (Durlak & Weissberg, 2011).

Considerable research evidence supports the assertion that SEL approach creates positive learning environment and is helpful for both students and teachers. Norris (2003) concluded that SEL based interventions equip teachers with necessary skills to help reinforce empathy, problem-solving and responsible and caring behavior in order to maintain a positive classroom environment that would ultimately enhance learning. Taylor and Dymnicki (2007) established that SEL intervention improved student's academic achievement, prosocial behaviors, school connectedness and attendance. SEL interventions also found effective in ethnically, racially and geographically diverse and challenged environments (Payton et al., 2008).

The Collaborative Academic, Social, and Emotional Learning (CASEL) was established to promote social and emotional learning as an essential part of education. It also strives for advancement of SEL science, evidence-based practices and policy (CASEL, 2013). CASEL also provides a systematic framework for assessing the quality of SEL programs. The framework is used to identify and rate well-designed, evidence-based SEL programs with prospects of broad dissemination. This tradition was started ten years back when first review of SEL programs (CASEL, 2003) was published. The CASEL guide includes school based universal prevention programs based on teaching five core social-emotion competencies. The guide focuses on three requirements while reviewing SEL programs; (1) well-designed classroom-based programs that systematically promote students' social and emotional competence, provide opportunities for practice, and offer multi-year programming; (2) deliver

high-quality training and other implementation supports, including initial training and ongoing support to ensure sound implementation; (3) evidence base.

Based on review of CASEL (2013), the preschool programs that were identified as SELect program are described in detail as follows

Al's Pals program. Al's Pals promotes resiliency in early childhood with clear focus on developing social competence, autonomy, and problem solving. This program is designed for use with children of three to eight years of age. There are 46 core lessons and 9 booster lessons. Each lesson takes about 10-15 minutes and two lessons are implemented weekly. Children learn positive ways of interacting with others, manage self-control, resolve differences and conflicts peacefully, and make healthy choices. Al's Pals program strategy is to incorporate SEL concepts into academic teaching areas usually taught in early childhood including numbers, letters, and the science. Teachers also learn how to create positive classroom environment which would foster children's learning and social-emotional development.

In addition to detailed content instructions, the program offers different generalization activities in order to reinforce the program concepts and ideas. Home communication is also done by sending letters to parents. Initial training can be done in person that could be of two days or online for 7 two hours sessions. Training is required for program implementers. The program is found to be effective in promoting positive social behaviors and reducing aggressive behaviors in children (Lynch, Geller, & Schmidt, 2004).

I can problem solve program. I Can problem Solve program focuses on teaching children alternative solutions to a problem situation, think through the consequences, and effectively deal with problems. The program is designed for preschool through elementary grades. The documented lessons take approximately 20 minutes to implement. The content is implemented by introducing the central concepts followed by focus on skill instruction in social and emotional competencies. Dialoging and generating a discussion about the content is a central theme of the program. Program teachers are encouraged to generalize program core contents in the daily routine so to create a positive school atmosphere of the school to support positive. As further generalization activity, parent communication is also done by parents hand out which describes different strategies to parent to practice the core program skill of problem solving at home. Initial training for the program usually is of one to two days which is necessary for program implementation. Significant program impacts were found on children's problem-solving skills and behavioral problems (Boyle & Hassett-Walker, 2008).

The incredible years. The Incredible Years Series is a set of three curricula for children, teachers, and parents. The Child training program (dinosaur Curriculum) focuses on developing emotional skills, problem solving, anger management, and developing friendships. The program can be used with children of ages three to eight years. It consists of and approximately 60 lessons. The implementation guidelines provide flexibility to teachers to adjust number of lessons according to their classroom needs. Content is presented by using puppets or videos followed by group discussion. Different generalization activities are used to reinforce the core program contents.

Parent involvement is also made sure by including homework activity for every lesson and parents communication through letters. Teachers training focus on developing different strategies for classroom management skills and proactive teaching. Training curriculum also emphasizes on developing positive interaction with children and teaching them social and problem solving skills in the classroom. There is also a separate training program for parents. Initially, three day training is recommended for program implementation.

Promoting Alternative Thinking Strategies (PATHS)

The PATHS curriculum is an evidence-based social emotional learning curriculum for children from preschool to grade 6th (Kusche & Greenberg, 1994). This school based universal prevention program is designed specifically for promoting social-emotional competencies and reducing behavior problems in children. The curriculum is designated as 'Model Program' for violence prevention (Center for the Study and Prevention of Violence, 2004). PATHS is also a 'SELect Program' with proven effectiveness for improving social-emotional competence, school success and reducing conduct problems (CASEL, 2013).

PATHS Program Model

The program is based on the ABCD (affective–behavioral–cognitive–dynamic) model of development (Greenberg & Kusché, 1993) which focuses on developmental integration of affect, behavior, and cognitive understanding. A basic assumption is that a child's coping, as reflected in the behavior and internal

regulation, is a function of emotional awareness, affective–cognitive control and behavioral skills, and social–cognitive understanding. ABCD model also asserts that during the maturational process, emotional development precedes cognitive development and it has an influence on children's social understanding and ability to think through problem situations.

The PATHS intervention model draws on basic developmental research that the ability to make complex and accurate plans and strategies regarding interpersonal problems affects children's social behaviors. Children would only be able to exhibit socially competent behaviors if they can correctly identify and process the emotional content of the situation and effectively manage their emotions so that they can think about alternative explanations and solutions of a problem situation. If children can't accurately process the emotional content of a situation, it is very likely that they generate maladaptive solutions to a problem. Although social-emotional competence is a focus of developmental psychopathology research, yet it is rarely been a central focus of preventive interventions. Thus, emotional understanding and emotional regulation is a crucial aspect of social competence and an important target for prevention programs for both normal children and those who are at risk of developing behavioral problems (Kusche & Greenberg, 1994).

PATHS Components

Five main conceptual domains are covered in the core content of PATHS which are as follows:

1. Self Control

2. Emotional Understanding
3. Positive self esteem
4. Relationships
5. Interpersonal problem-solving

These conceptual domains are broadly clustered in following core program components in PATHS curriculum.

The readiness and self control component. The basic logic covered in this unit is of inter-personal self control. Children are taught various skills that enable them to manage their difficult feelings and disruptive behaviors in social situations. The most prominent technique used in this regard is the 'Turtles Technique' which was originally conceptualized by Robin, Schneider, and Dolnick (1976). There original technique focuses on using sensory modalities in the form of holding oneself by wrapping arms and self suggestions talk in order to calm down. Deep breathing technique is also used to regulate the excited bodily conditions. Another important feature of this technique is to identify the feelings and reason behind it. For older children, the element of problem-solving is also associated with this technique. For preschool children, the technique only focuses on self regulation and identification of feelings.

The feelings component. The feeling unit focuses on understanding feelings in the context of interpersonal relationships. This component is developmentally designed and covers most of the affect states that we commonly experience in our daily lives. The basic emphasis of this unit is on acceptance of all kinds of feelings as

a normal and natural human process. Children are also taught that feelings play an important role in communicating our internal state of mind. If people learn to identify their correct feelings and also how to express them, it would be beneficial for them to make better behavioral choices. The second essential aspect of PATHS feeling component is to differentiate between feelings and behaviors. Usually difficult feelings are reject and deemed undesirable because they are confused with behavioral responses that are given as a reaction of these feelings. Children are taught that feelings are not good and bad but the resultant behaviors make them so. Feeling concepts are taught through emotion pictures and generalized by using feeling faces and with turtle technique.

Interpersonal problem-solving component. This component covers the contents related to different problem-solving strategies in interpersonal context. One of the main purposes is to teach children to use their cognitive skills in order to think about alternative solutions to different problems that would lead to positive behavioral outcomes. Extensive training of children is done in this regard in order to make them able to think through different problem situations.

Building positive self esteem and peer relations. Two other focus areas in PATHS program are self esteem and positive peer relation. This component is very important in the sense that it creates the safe and caring learning environment necessary for SEL based programs. The sense of responsibility among students in inculcated through the use of ‘PATHS Kid of the Day’ which provides opportunity to every kid in the class to take care of the class environment and help teacher and class

fellows. Complementing is another strategy used to build positive peer relationships by saying nice things to people around you. In a way, these two strategies help children understand that being helpful is nice.

PATHS Effectiveness Studies

Many researches support the use of PATHS curriculum to promote protective factors (such as social-emotional competence and social problem solving skills) and reduce behavioral risks (i.e. externalizing and internalizing disorders). Greenberg, Kusche, Cook, and Quamma (1995) examined the effectiveness of PATHS curriculum on the emotional development of school aged children. The intervention field trial included 30 classrooms in a randomized design and involved the assessment of 286 children from 2 and 3 grades. Teachers were trained in the intervention model and provided PATHS lessons during most of the school years. The pilot version of PATHS curriculum was used which comprised of 60 lessons specifically adapted as a second and third grade model. Results indicated that the intervention was effective for both low and high risk children in improving their range of vocabulary and fluency in discussing emotional experiences; their efficacy beliefs regarding the management of emotions and their developmental understanding of some aspects of emotions. Further, in some instances, greater improvement was shown in children with high teacher rating of psychopathology.

Greenberg and Kusche (1998) implemented PATHS curriculum with a group of profoundly deaf children from grade 1-6 using a quasi-experimental design with waitlist control group. Results indicated that the intervention led to significant

improvement in students' social problem-solving skills, emotional recognition skills, and teacher and parent-rated social competence. Teacher ratings of behavior indicated that there were significant improvements in social competence and in frustration tolerance. Results also indicated significant improvement in reading achievement and non-verbal planning skills in the intervention sample. There was no effect in this normative sample on teacher or parent-rated psychopathology. The study also revealed that improvement in emotional understanding was related to lesser externalizing problems as reported by parents. Improvement in role-taking skills was related to higher teacher ratings of emotional adjustment, and reductions in behavior problems. Also better problem-solving skills were found to be related to higher teacher ratings of emotional adjustment and social competence and decreases in behavior problems at home and school. One- and two- year follow up results indicated sustained effects.

Kam, Greenberg, and Walls (2003) utilized quasi-experimental matched group design and a 4 months implementation of PATHS curriculum to assess the role of implementation quality of evidence-based programs. It was concluded that two factors contributed to the success of the intervention; (1) adequate support from school principals; (2) high degree of classroom implementation by the teachers. The intervention was found effective in improving children's emotional competence and reducing aggressive behavior.

In another study, Kam, Greenberg, and Kusche (2004) examined the long term effectiveness of the PATHS curriculum on the adjustment issues of children with special needs in schools. The project implemented the 60 lesson pilot version for one school year. It was concluded that the intervention reduced the rate of growth of

teacher-reported internalizing and externalizing behaviors at 2 years follow-up. Sustained reduction in depressive symptoms was also observed as reported by the children.

Seifert, Gouley, Miller, and Zabriski, (2004) compared two cohorts of children from one urban elementary school, one receiving intervention during first grade, the other older cohort not receiving the intervention. The study used quazi experimental design. The analysis compared the control and intervention cohorts only on post assessments. The intervention and control cohorts differed significantly on measures of global social competence and social-emotional composite.

Riggs, Greenberg, Kusche, and Pentz (2006) assessed the mediational role of neurocognition on behavioral outcomes of PATHS implementation. They concluded that there implementation of prevention had a significant effect on inhibitory control and verbal fluency. One year follow-up revealed that inhibitory control and verbal fluency were negatively related to teacher-reported externalizing and internalizing behaviors. Significant mediation effects of inhibitory control at immediate posttest on the relation between experimental condition and teacher rated behavioral problems were found at one year follow-up.

In a study using preschool PATHS curriculum, Domitrovich, Cortes, and Greenberg (2007) indicated that preschool children who received PATHS intervention had better receptive emotion vocabulary, social skills and lesser internalizing problems at post-test compared to control children. Children from intervention group were more accurate in identifying feelings. The attribution bias was also significantly reduced due to exposure of intervention. However, non significant findings were reported on measures of inhibitory control, attention, and problem solving and

externalizing behavior problems. Follow-up analyses revealed sustained intervention effects in children with higher mean levels of verbal ability.

Bierman et al. (2008) implemented PATHS age-graded version of PATHS curriculum for preschool children that focused on readiness competencies in social-emotional development. This age-based version of the curriculum includes 33 lessons. They use 12 skill measures and 11behavior measures. The results showed that the intervention group had significantly higher posttest scores on7 skills that included language skills, literacy skills, and social cognitions. The intervention group had significantly higher posttest scores on 3 of the 12 outcomes that included teacher-rated aggression, observer-rated task orientation, and parent-rated language use.

Conduct Problems Prevention Research Group (2010) evaluated PATHS as part of the Fast Track program and concluded that the intervention main effects were significant for authority acceptance, cognitive concentration, and social competence. Time by intervention effects were statistically significant indicating that intervention group experienced less increase over time in problems.

Crean and Johnson (2013) examined effectiveness of PATHS for externalizing behaviors especially aggression in third to fifth grade students. The findings revealed a significant program effect on teacher-reported conduct problems over time. While non significant results were found for teacher-reported outcomes on aggression and acting out behaviors, however, a deceleration trend was observed of both behaviors and effects at the later grades. Significant program effects were reported on children's normative beliefs about aggression, aggressive social problem solving, hostile attribution bias, and aggressive interpersonal negotiation skills.

Adaptations and Replications in Different Cultures

PATHS curriculum has been adapted in different languages and cultures across the globe. To date the program is being adapted and implemented in different English and non English speaking cultures that includes Canada, Netherlands, Turkey, Croatia, Greece, Ireland, England, Germany, Australia, Switzerland, Italy, Hong Kong, Thiland, and Singapore. Findings from international implementation sites have established effectiveness of PATHS curriculum for enhancing social-emotional competence and reducing behavioral problems of children in these cultures and also established the universality of PATHS contents.

Curtis and Norgate (2007) reported effectiveness of PATHS in England and Wales using a quasi-experimental design. The sample included children of 5 to 7 years of age. The intervention and control groups were matched on age rage and catchment area. The results of the study indicated effectiveness of PATHS curriculum on total and subscales of Strengths and Difficulties questionnaire. Also, teachers found PATHS as a good fit for school curriculum in England.

Malti, Ribeaud, and Eisner (2011) examined PATHS effectiveness through randomized control trial using a combined study approach with school and family intervention. PATHS effectiveness was compared with Triple-P program in reducing children's externalizing problems and improving social competence. Sample consisted of 1,675 first grade children from 56 elementary schools in Switzerland. Results of the study revealed significant intervention effects for reducing aggressive behavior in children as reported by parents and teachers. PATHS was also found to be effective in reducing symptoms of ADHD in children according to teachers. Non

significant results were concluded for social competence of children. The combined effect of both the interventions, there were no significant findings for all of the outcome measures.

Two-year follow up was reported by Malti, Ribeaud, and Eisner (2012) for effectiveness of PATHS curriculum only with the comparison group. The results revealed sustained effects of PATHS after two years on aggressive behavior and ADHD symptoms in children. However, the results of the follow-up analysis were moderated by children's level of moral judgment, financial status, single parents and non-Swiss nationality.

Little et al. (2012) examined effectiveness of PATHS curriculum through a cluster randomized controlled trial with children aged four to six years. The sample consisted of 5074 students from 56 schools who randomly allocated to PATHS (n = 29 schools) and control (n = 27 schools) groups. PATHS was provided to all children through preschool to first grade resulting in a total sample of 5397 children at baseline in 196 classes (n = 102 intervention and n = 94 control). Results of the study revealed mixed trends. Intervention effects were significant at one year follow-up for emotional and behavioral difficulties but the gains were lost at two years follow-up assessment.

Kam, Wong, and Fung (2011) conducted pilot trial of PATHS effectiveness in Hong Kong with 316 first grade students. Results revealed significant intervention effects for social and emotional skills. Significant time effect was found for behavior difficulties only for one implementation site. However, lack of comparison group was a limitation in interpreting the results. This pilot project was viewed as a feasibility study for large scale implementation of PATHS in Hong Kong.

Goossens et al. (2012) used a quasi-experimental design to test the effectiveness of the PATHS prevention program in Netherlands. A sample of 1,294 children was group in intervention and control conditions. The results show implementation quality and no intervention effects on problem behavior or social and emotional skills, concluding that intervention can't be implemented effectively by national health system so more research is needed exploring specific conditions for quality program implementation.

Arda and Ocak (2012) conducted a small effectiveness study of preschool PATHS curriculum on social-emotional skills of children. The study utilized a pretest-posttest design. The findings indicated significant intervention effects training effects were large for increasing concentration and attention skills and social emotional competence. The intervention was also effective in reducing aggression. However, no significant effects were detected on any emotion knowledge skills. It was concluded that PATHS was an effective intervention strategy in improving children's social emotional competence and the study laid the foundation ground work for comprehensive program evaluation as a preventive intervention for Turkish children.

Cultural Adaptation Frameworks for Evidence Based Programs

With the advent of the field of evidenced based programs for prevention of childhood behavior disorders, the questions of broad dissemination of these programs and cultural adaptations become more and more relevant (Lau, 2006). Cultural adaptation has been defined as systematic modification of an evidence-based program to evaluate language, culture, and context in a way to make it compatible with the

target community's cultural patterns and values (Bernal, Jimenez-Chafey, & Rodrı´guez, 2009). The main purpose of this process is to develop a culturally appropriate modified version of a model evidence-based program. Interventions that are culturally blind may not be attractive for the local community, thus hampering successful program implementation (Castro, Barrera, & Martinez, 2004). Although these modifications are usually made in response to a perceived need, however, haphazard adaptation process would have dire impacts on program's established effectiveness (Castro et al., 2004; Kumpfer, Alvarado, Smith, & Ballamy, 2002; Stirman, Miller, Toder, & Calloway, 2013).

Responding to the need of systematic adaptation framework for evidence based interventions; researchers have tried to formulate certain guidelines or standards for this process. Different adaptation frameworks have been reviewed with specific focus on process of cultural adaptation. Bernal, Bonilla, and Bellido (1995) proposed the ecological validity model consisting of eight culturally sensitive elements. They concluded that language, persons, metaphors, concepts, content, context, goals and method are most important dimensions of adaptation. Expanding on their model, Rodriguez and Wieling (2004) proposed the Cultural Adaptation Process Model (CAP). This model emphasizes a broader process of adaptation that requires a greater involvement of the community to deal with the issue of acculturation. Furthermore, this model also concludes that the cultural adaptation process is not linear in nature; rather, lessons learnt during different phases of the project are incorporated in the final adaptation.

Backer (2001) formulated a 12 point guideline that facilitates cultural modifications while preserving the core components of the program. Out of the 12,

following 6 steps exclusively provide a framework of effective cultural adaptation: (1) understand the theoretical background of the program; (2) conduct a component analysis of the program; (3) determining the required modification in the program according to the needs of target population in order to ensure effective implementation; (4) consultation with program developers; (5) consultation with the community where program is going to be implemented; and (6) strategize a plan for implementation.

Castro et al. (2004) concluded that an effective adaptation framework utilizes both "top down" and "bottom up" approaches where top-down approach refers to involving scientific experts in adaptation design and bottom-up approach calls for community stakeholder's (teachers, families, etc.) involvement. They also described three dimensions of program adaptation; (1) cognitive information processing dimension, that mainly address the surface structure changes like language, age and developmental level. This dimension also addresses some degree of depth while addressing the cultural equivalence in translation along with conceptual equivalence; (2) affective motivational characteristics, related to gender, ethnic, religious and socioeconomic background. In addition to that, this aspect also deals with modifying program content that may develop cultural conflict or evokes reactance among the community; (3) environmental characteristics which includes the ecological aspects of the community.

Building further on their earlier work, Barrera and Castro (2006) proposed the heuristic framework for adaptation of interventions which comprised of four steps (1) information gathering: the main purpose of this step is to carefully review the content of the program thus identifying the disparities in the above mentioned dimensions

which require modification. Literature review and most importantly, qualitative analysis with experts experienced in working with the target group and having better understanding of cultural context can provide possible solutions to adaptation needs. A team approach is deemed most useful where input can be taken from all stakeholders: intervention developers, community members, administrators and researchers for effective program adaptation; (2) preliminary adaptation design: the second step is to integrate the gathered information from stage one into a draft of adapted intervention. Kumpfer, Pinyuchon, Melo, and Whiteside (2008) emphasized that preserving the core components of the program is main challenge of this stage. Translating the intervention strategies into the local language of the community is the main of focus while preparing a draft manual of adapted intervention. Berrera, Castro, Strycker, and Toobert (2013) suggested that review of translated material by an advisory group is important to identify possible shortcomings; (3) preliminary adaptation test: in this phase, pilot testing of the adapted version of the intervention is done. Frequent feedback from the implementers is valuable. Osuna, Barrera, Strycker, and Toobert (2011) suggested that weekly meetings with the implementation staff would provide researchers with a valuable input on the process and reactions of target participants to intervention strategies. During this stage, the outcome measures to be used in effectiveness trial can also be piloted; (4) adaptation refinement: in this phase, the feedback from the earlier stages is incorporated into the final version adapted version of intervention. Another stage was suggested in this process which is called *cultural adaptation trial* which is designed to establish effectiveness of the adapted intervention (Berrera, Castro, Strycker, and Toobert, 2013). This trial would give an empirical evidence of appropriateness of modified content.

Socio-Cultural Context of Pakistan: Child Mental Health Scenario and Use of School-based Interventions for Children

Pakistan is a South East Asian country with an estimated population of 177.10 million in 2012 (Pakistan Bureau of Statistics, 2012) which makes it world's 6th most populous country. 14.80% of the population is from 0-4 years of age. National language is Urdu with main four regional languages. The estimated adult literacy rate is 55% (UNICEF, 2011). 29.9% of total population (36 million) attending an educational institute comprises of preprimary/preschool children. Predominantly, there are two types of school systems in Pakistan; government sector and private schools which are mainly controlled by non governmental organizations, business enterprises and educationists.

The area of prevention science and developmental psychopathology is very new in the context of academic research and clinical practice of the country (Rehman et al., 2006). Some initial efforts have been made in introducing the concept of evidence based practices in recent past with clinical population. An initial phase of such services has been developed at Agha Khan University in Karachi (Syed, Hussein, & Yosafzai, 2006). A parent training program for ADHD children has been culturally adapted for use in Pakistan and the program is found to be effective in reducing attention deficit hyperactivity disorder and oppositional defiant disorder (Malik, 2011).

Over the last decade, Pakistan has emerged on the world map as one of the prominent places in many references. Growing social instability, terrorism, and general intolerance has created risk environment for mental health of children. The

country was unfamiliar to terrorism before the 9/11 attacks in US. Due to changed security situation and global war on terror, there were serious impacts on Pakistan's domestic security. Terrorism has adverse impacts on the social, economic, political and physical infrastructure of Pakistani society (Saigol, 2010). In addition to that, sectarian violence, ethnic divides and political instability added to the complex crises of internal security (Daraz, Naz, Khan, Khan, & Khan, 2012). The violent acts of terrorism badly damage the mental growth of the human beings and put them in to constant stressful situation. Terrorism, economic instability and socio-political unrest have devastating effects on the mental health of people of Pakistan. Pakistan contributes 11.9% to overall neuropsychiatric disorders globally (WHO, 2011).

Across the globe, different studies have been conducted on short and long term impacts of terrorism and unrest on preschool children and found that direct and indirect exposure to terrorism considerably increases the risk of development of emotional and behavioral problems in preschool children (Pine, Costello, & Masten, 2005). Terrorism leaves harmful and far reaching effects on the minds of the children when they see dead bodies and horrible scenes on the media (Masten & Narayan, 2012). Emotional and behavioral problems of young children are growing concern for parents and caregivers in Pakistan. There is no published research on the direct impacts of terrorism on mental health of children in Pakistan. However, various researches on prevalence of emotional and behavioral disorders show an increasing trend. Javed, Kundi, and Khan (1992) found out that prevalence rate for emotional and behavioral problems in children in Pakistan were 9.3%. Where as a more recent study suggests an increase in the prevalence rate up to 34% and the most common reason for referral to child mental health services was aggressive behavior (Syed,

Hussain, & Mahmud, 2007). Another research on community and private school children in Karachi, Pakistan found that 42.3% of the total sample was rated as abnormal on the conduct problem subscale of Strengths and Difficulties Questionnaire (Hussein, 2008).

Given this socio-cultural context of the country, the need for evidence-based prevention efforts becomes more relevant. Malik (2011) suggests that even for parents training programs, preventive strategies should be the focus of future researchers in order to include children with less severe symptoms. She further asserts that parent training is a challenging area in intervention research due to the stigma issue. School based preventive interventions have never been a focus of research. Although, there are isolated efforts of using school based life skills programs by non profit organizations working on emotional health of children and adults. The programs focus on social-emotional skills, gender sensitization, tolerance and child sexual abuse (Rozan, 2013), yet these programs lack evidence base and strong theoretical rationale.

Rationale of the Present Study

In order to understand why it is important to implement evidence based practices in Pakistan, there is a need to look at the causal factors of mental health issues in a broader sense. Furthermore, it is vital to comprehend the demographic features of the country and changing social framework of the society which points to the need of effective measures for the healthy personality development of young children.

As highlighted in the review, evidence-based school prevention programs are yet to be introduced in under developed countries like Pakistan especially at two different levels. First level is to create interest of new generation of researchers in the country in the emerging field of prevention science and evidence based interventions in the context of developmental psychopathology perspective. Second, it is essential to highlight the use of preventive interventions in the educational system of Pakistan where the importance of social-emotional skills and positive competencies for healthy development at early childhood is well acknowledged by curriculum developers.

The growing trend of mental health problems especially in young children provides another strong rationale of using intervention strategies to reduce the severity and incidence of behavioral problems. As research evidence indicates that the roots of emotional and behavioral problems of children and adolescence lie in early years of development, prevention at preschool age becomes essential.

Given this context, the need of the time suggests that issue of mental health problems should be addressed by focusing on primary prevention in developing countries including Pakistan where multiple risk factors such as terrorism, economic

instability, insecurity, lack of opportunities for education, social change and general hopelessness increases the risk of developing psychological disorders (Patel & Kleinman, 2003). Saxena, Jané-Llopis, and Hosman (2008) conclude similar factors specifically war, poor social circumstances, neighborhood disorganization and violence as determinants of mental health issues and suggest evidenced based interventions as a remedy.

METHOD

Chapter II

METHOD

Phase I: Translation, Adaptation and Initial Tryout of Preschool PATHS Curriculum and Outcome Measure

Objectives.

1. To translate, adapt and initial tryout of Preschool PATHS Curriculum
2. To translate, adapt and pilot testing of outcome measures to be used in final effectiveness trial

Part I: Cultural Adaptation of Preschool PATHS Curriculum. The scientific literature has focused on different adaptation frameworks for evidence based practices. The prime emphasis of these frameworks is to preserve the core program components and to ensure program fidelity while keeping the contextual factors of the culture and population for which the adaptation is being done.

Consequently, the cultural adaptation of Preschool PATHS curriculum was done in the light of guidelines provided by Castro et al. (2004) and heuristic framework of program adaptation (Barrera & Castro, 2006). Castro et al.'s conceptualization provides the dimensions of adaptation while the heuristic framework guides the over all adaptation process. The cultural adaptation was done through following steps

Step I. Information gathering. The main purpose of this step was to carefully review the content of the program thus identifying the disparities in three dimensions proposed by Castro et al. (2004) which require modification. As the first step, a team was developed exclusively for this purpose. These stakeholders and their contributions are as follows.

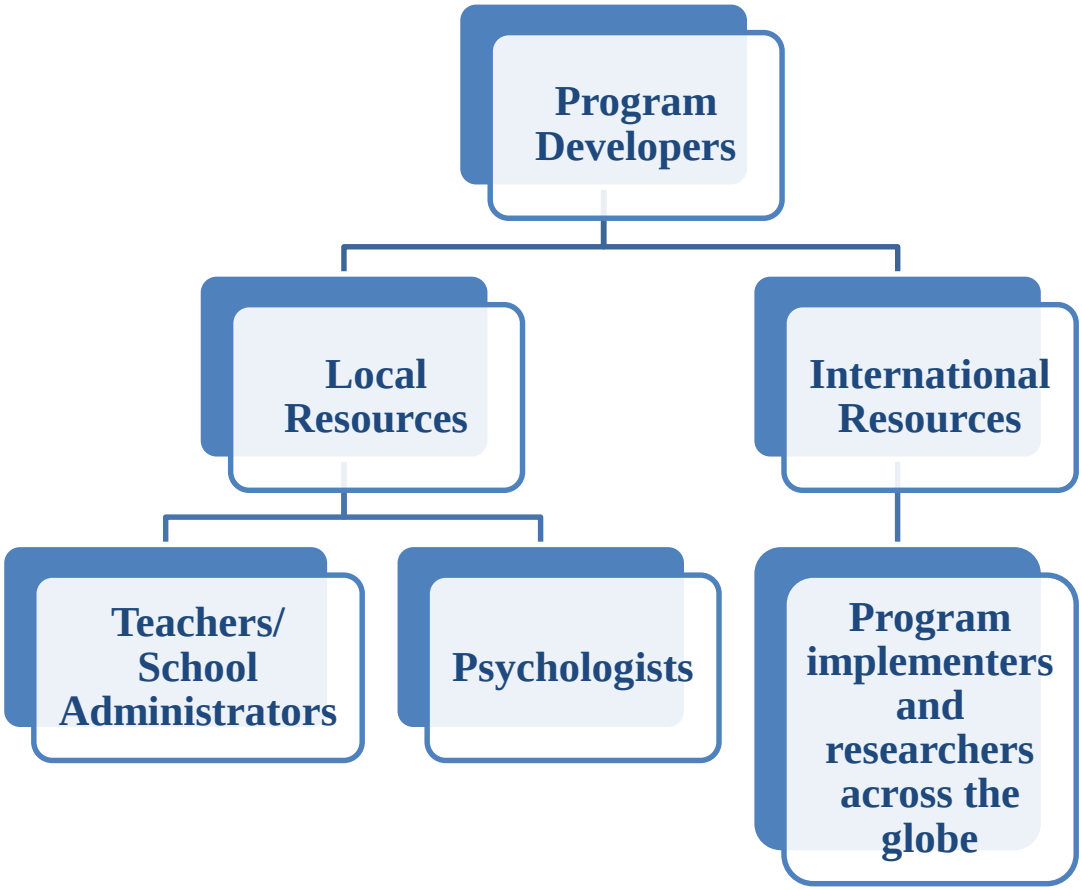

Figure 2. Levels and sources of consultation for adaptation process.

Program Developers. The feedback from program developers was quite important in devising a scheme and levels of consultation for adaptation process. Their role was also crucial in reviewing the suggested changes from different sources in order to make it sure that these changes wouldn't interfere with the core program

components. Two types of changes were identified namely deep structure and surface structure changes. Deep structure changes refer to such changes that are in conflict with core conceptual framework of the program. Surface structure changes are those changes that are considered to be minor changes in adapting material according to the culture and these changes don't interfere with the basic conceptual framework (Resnicow, Soler, Braithwaite, Ahluwalia, & Butler, 2000).

Program Implementers and Researchers across the Globe. Discussions with program developers also helped in identifying the next levels of consultation and one of them was the program implementers and researchers across the globe. These researchers were contacted personally through email and questions were asked about how adaptation process was carried out and what were the deep or surface structure changes made during that process?

Local Recourses: Psychologists and Teachers. Third and the most important level of consultation were schoolteachers and psychologists from Pakistan. We selected psychologists/academicians who had understanding of fields of child development and research methods and who also had expertise in both Urdu and English languages. Another group of local kindergarten teachers and educationists who had years of work experience with young children was formed. These groups were named "PATHS Interest Group". They were asked to evaluate and give feedback regarding following issues:

1. Core concepts of PATHS curriculum and their cultural appropriateness.
2. Urdu expressions for emotion words.

3. Situations and scenarios presented in PATHS lessons.

Step II: Preliminary adaptation design. In this step, information gathered through different sources was compiled in adaptation design. Following are the main modifications made in the adapted version of the program.

1. Cognitive Information Processing Dimension: Language was the main modification suggested in that dimension. The program content was translated in Urdu. As the program content is about emotions and feelings so translating the emotion and feeling words was a deep structure change while adapting the curriculum. Following amendments were made.

    i. As the curriculum discusses human emotions in detail so in western culture, there is a range of intensity words for certain feelings like mad, grouchy, grumpy and angry. In Urdu language, intensity words for different emotions are not used commonly (especially considering the vocabulary of preschool children). While adapting these concepts, the words and lessons describing intensity of emotions were omitted. For example, ‘angry’ is translated as ‘ghusa’ but there is no appropriate word in general vocabulary for feeling ‘mad’ which basically describes the degree of the emotion. So one extensive lesson on feeling angry was included in the adapted version.

    ii. Although there is a word for the feeling of being ‘generous’, yet in Urdu language it is usually taken as a word depicting a behavior. Also the translation of generous is difficult for preschoolers to understand and pronounce because it is not commonly used. So the lesson on feeling generous was combined with the sharing and caring lesson with an

emphasis on the positive effects of sharing with or helping the people who are not our friends.

iii. It was observed that the introduction part prior to each lesson, which are for knowledge and learning of teachers about theoretical concepts of psychology, have used technical terminologies (e.g. ‘neuropsychological’) and it is very hard to translate these expressions into Urdu. So these sections were not translated.

iv. Names for the animal puppets were replaced by names used for pet animals in Urdu.

2. Affective motivational characteristics: In this dimension, mostly content was modified with reference to gender, ethnic, sociocultural and religious perspective. Following changes were made in final adapted version.

i. The models in photographs depicting various emotions were replaced by local models.

ii. Some changes regarding the materials used in the curriculum were also made. For instance, feeling faces were replaced with a full body figure with hair instead of original bald ones.

iii. It was concluded that children are generally familiar with animal puppets used in the curriculum except Hedgehog, which is not a common animal in Pakistani culture. As no other alternative animal was found to replace hedgehog, it was decided that it would be introduced as a new animal for children assuming that children of this age learn about so many new things around them. So information material was provided to teachers on Hedgehog so that children learn more about this animal.

iv. The phrase ‘PATHS Kid of the day’ was changed to ‘Class Monitor’ or ‘Class Helper’ that is commonly used phrase in Pakistani schools.

v. The lesson on ‘Compliments’ is an important part of the program which is basically included to teach children better social skills to interact with their peers. Giving complements is generally considered positive politeness in American culture where as in eastern cultures, it is perceived as negative politeness (Matsuura, H., 2004). In American culture, compliments may range from appreciating someone’s dress or they way look to their attitudes and behaviors. While in Pakistani culture, this concept is not liked. Considering the concept as one of the core components of the program, the concept of compliments was adapted to saying nice things to others where focus is more on the behaviors and acts of individuals. Religious teachings were also used to validate the concept of saying nice things to others.

3. Environmental characteristics: These are related to implementation of the program. The program implementation strategies were modified as under.

i. The usual training of PATHS curriculum for the teachers is of two days. Considering the fact that such a kind of program was launched for the first time in Pakistan, the training was extended to five days and topics such as child development and basic understanding on behavior problem of children were also included in the training besides extensive sessions on social emotional competence, learning and program contents. Role plays and practice sessions were also included on how to conduct the sessions.

ii. Usually in Pakistani schools, children don’t have opportunities for cooking

activities. Therefore, all the extension activities related to cooking were omitted. Each prevention teacher devised their own extension activities like drawing, coloring, pasting, and story telling based on concepts of the program.

Step III. Preliminary adaptation test. This step was the pilot testing of the adapted version of preschool PATHS curriculum to test whether the changes made in the adapted version are actually suitable for Pakistani culture.

Sample. The sample for pilot testing of adapted program consisted of 13 preschool children of 4 years (*M=4.32, SD=.11*). The sample was selected using purposive sampling technique from a local school in Islamabad. Among these 13 children, 7 were girls and 6 were boys.

Instrument. The preschool PATHS curriculum originally developed by Domitrovich, Greenberg, Cortes, and Kusche (2005) and adapted in previous steps of present study consisted of 35 lessons on understanding feelings, self control, positive classroom atmosphere, and problem solving with peers. 25 lessons were selected out of 35 final lessons based on core program components. These lessons were on the topics of compliments, understanding of basic and advanced feelings, self control, classroom rules, and developing positive relationships with peers.

Procedure. These lessons were implemented 3 times a week for 25-30 minutes each day with the students. Two teachers were involved in program implementations

that were given one-day orientation on program core concepts and implementation guidelines. A weekend planning session was conducted at the start and during pilot testing. The main purpose of this session was to (1) get feedback on sessions conducted with students, (2) discuss difficulties in implementation, (3) review the cultural appropriateness of the modifications in the lessons and students response on it, (4) review and plan upcoming sessions with the teachers. The pilot test of adapted version of intervention was completed in 9 weeks.

Results. Feedback from 2 implementation staff and 3 other teachers who teach and interact with that group revealed some positive changes in children's overall behaviors especially following rules, self control, using emotion vocabulary and sharing with friends. An important feedback related to program implementation was to reduce the frequency of the program to two times a week instead of three. They also highlighted that advanced feelings lessons need more time to implement and use of children's own situations to make them understand the concept. The place where program is implemented is also of importance. Another factor highlighted in successful implementation was full support from school administration.

Step IV: Adaptation refinement. As the final step, all the changes suggested earlier and in pilot testing were incorporated in the adapted version of the program and implantation design for effectiveness trial.

Some reflections on adaptation process. Cultural adaptation of evidence based programs is necessary step when a wider dissemination of the intervention is

required. Preserving the core components and implementation design ensures effectiveness of adapted version of the program. In the present effort, a systematic adaptation process of school based intervention is described where both content and delivery process was focused. Involving different stakeholders in the adaptation process was a key element in bringing out a successful adaptation model. Especially the role of community members (school teachers and administrators) can be viewed as a gold standard in this respect (Rodrı´guez, Baumann, & Schwartz, 2011).

Language, though usually considered a surface structure change (Castro et al., 2004), yet becomes very crucial when cultural equivalence of concepts is the main focus. Emotion words not only describe feeling states but also depict behaviors in Urdu language. So translating feeling words required some deep changes while adapting the manual such as merging lessons together. Some concepts were highlighted by using the cultural and religious teachings. The decision of including Hedgehog in the adapted intervention which may not be culturally familiar to children in urban settings of Pakistan was done considering the developmental readiness of preschool children to learn and retain new information. Implementation design was also examined while adapting program content. Some changes were suggested in program delivery method keeping in view specific training needs of teachers in Pakistan. The frequency of program delivery was also reduced to 2 days after pilot testing.

Similar experiences have been shared by researchers working on PATHS adaptation in different parts of the world. Usually, language is the main focus of adaptation in non-English speaking countries as core concepts in PATHS are universal (D. Antognazza, personal communication, June 5, 2009; A. Sagaon,

personal communication, September 22, 2009; Kam et al., 2011). Emotion words need to be changed according to culture. Sometimes, phrases are used to explain feeling words and sometimes merging the lessons on intensity of same emotion. Changing the photographs and pictures with local models and situation is another way to adapt program according to a particular culture (J. Policarpo, personal communication, June 19, 2009).

Part: II- Translation and adaptation of outcome measures and pilot testing. This part of the study was completed in two steps which are as follows

Translation of outcome measures. The following measures were used to gauge the impact of the final effectiveness trial (The details of these measures are given in phase II of method chapter).

Child Behavior Checklist (1.5-5)-CTRF. 99 item scale assessing emotional and behavioral problems of preschool children as rated by teachers.

Social Competence-Teacher Version. 25 item scale assessing social competence as rated by teachers.

These two measures were translated through following steps suggested by Brislin (1980)

Step I: Evaluation of relevance of scale items for Pakistani children. The first step before going to the translation phase was to evaluate the items and pictures

used in the scales of the study. A group of 7 experts comprising of 4 preschool teachers and 3 educationists who have more than 20 years experience of working with young children in school settings were contacted. They were asked to review and evaluate the relevance of the items to preschool children in Pakistan. The items were found relevant to the behaviors of children usually observed in Pakistani schools.

Step II: Forward translation of items. In this step, a group of 6 bilinguals were approached. Out of these, 2 were school teachers having Master degree in English and Education and command on Urdu and English language, 3 were PhD scholars working in the field of developmental psychopathology and social psychology and one was an educationist who had experience of working with young children and also was proficient in both languages. They were asked to translate the items keeping in view the conceptual equivalence. The translations were then reviewed by the researcher to exclude any repetitions.

Step III: Committee approach. A three member committee was engaged to review and evaluate the most appropriate translation of the scales. The members were researchers and faculty members in the discipline of Psychology and having adequate experience in item construction and translation.

Step IV: Back translation of items/pictures. In this step, 3 bilingual experts were asked to back translate the Urdu version of the two scales selected through committee approach. The minimum education of these bilinguals was Masters and they were not familiar with the original version of the checklist.

Step V: Final items selection. A committee of three members evaluated the three back translations and compared the original version and back translation. The items which conveyed the closest meaning as it was in the original checklist and were deemed most appropriate were retained. The committee recommended this final version for further use in research.

Adaptation of Kusche Emotion Inventory-Recognition Subtest

This picture test consists of 30 stimuli pages assessing children's ability to recognize different emotions. For adaptation of this picture test, the pictures were reviewed by the panel of 7 experts who were also involved with the translation process of other outcome measures. First step was to see if the test pictures are relevant to our culture and whether children would be able to understand the emotional expressions depicted in the pictures. The panel, after careful review suggested minor changes in the pictures like change of dressing of female characters according to our culture and changing curly hairs showing African American children. Overall, the panel found the inventory appropriate to use with Pakistani children.

Pilot-test of outcome measures. During this phase, pilot testing of these measures was also done through following process.

Sample. The sample for the pilot testing of instruments consisted of 44 preschool children between the ages of 4-5 years (M=4.29, SD=.13). Out of total, 21

(47.7%) were boys while 23 (52.3%) were girls. The sample was taken from different schools of Islamabad using nonprobability purposive sampling. 7 children were excluded from the sample as two were over the age of 5 years while remaining five recently joined the school so teachers have little knowledge of their behaviors.

Procedure. School administrators were contacted for data collection from children and teachers. After careful scrutiny, children who fulfill the selection criteria were selected for instrument administration. One measure was direct child assessment which took 20-25 minutes on average while other two measures were filled by class teachers which took 30-35 minutes on average.

Results. This phase of the project aimed at evaluating the appropriateness of the outcome measure which will be used in effectiveness trial of adapted preschool PATHS curriculum for Pakistani children. The results are as follow

Table 1

Descriptives of the outcome measures (N=44)

Variable					Range		
	No. of Items	M	SD	α	Potential	Actual	Skew
KEI							
Receptive Subtest	30	49.59	8.14	.86	0-60	23-59	-1.82
SCS-T							

Total Scale	25	40.89	11.13	.91	0-100	22-62	0.23
Prosocial/Communc.	8	14.20	3.98	.83	0-32	5-21	-0.36
Emotion Regulation	10	15.52	4.67	.80	0-40	9-25	0.37
Academic Skills	7	11.16	3.69	.79	0-28	4-20	0.36
Combined	18	29.73	8.18	.89	0-72	14-46	0.13
CBCL($1^{1/2}$-5)-CTRF							
Total Scale	99	32.02	10.48	.82	0-198	11-64	.73
Internalizing	32	11.05	3.65	.71	0-64	4-24	.97
Externalizing	34	11.50	7.79	.91	0-68	3-37	1.46

Note. KEI= Kusche Emotion Inventory, SCS-T= Social Competence Scale-Teacher, CBCL($1^{1/2}$-5)-CTRF= Child Behavior Checklist ($1^{1/2}$-5)-Caregiver/Teacher Report Form

Table 1 shows alpha co-efficient and skew of all translated and adapted scales of KEI-R, SCS teacher-rated and CBCL-CTRF. The table shows strong internal consistency for all scales. It further suggested the relevance and appropriateness of these scales for Pakistani population. The strong internal consistency also implied that the scales can be used as outcome measures in final effectiveness trial of preschool PATHS curriculum.

Phase II: PATHS Effectiveness Trial

Objectives.

1. To assess the impact of PATHS curriculum on social emotional competence of preschool children in intervention and control group.

2. To evaluate the impact of PATHS curriculum on behavior problems of preschool children in intervention and control group
3. To assess gender differences on impact of intervention.

Hypotheses.

1. Children of the intervention group will exhibit better social and emotional skills at posttest as compared to control group
2. Teachers will report less behavioral problems in intervention group at posttest as compared to control group

Operational definitions of variables.

Social-emotional competence. Social-emotional competence is defined as the child's ability and skills to recognize and understand emotions of self and others in a social situation and to respond effectively with peers and adults around them (Denham et al., 2003). For this study, the concept is measured through emotion knowledge test and social competence scale where higher (above mean) scores reflect high levels of social competence.

Behavioral problems of children. Maladaptive behavior patterns which include both emotional and behavioral issues in children are broadly categorized as externalizing problems and internalizing problems (Achenbach, 1991). For the current study, both raw scores and T scores were used in the analysis. Higher mean scores reflect higher levels of behavioral problems. T scores below 59 were considered as

normal while above 60 were considered as borderline behavioral problems. T scores above 63 were considered as problems in the clinical range.

Research design.

A non-equivalent waitlist control group design was used for this study. This design is identical to the Pretest-Posttest Control Group design, with the exception of randomization. Comparison groups are naturally-occurring groups which are comparable on certain variables of interest of the researcher. The intervention and control groups were compared on age and frequency of behavior problems in the classroom as rated by class teacher. The intervention group was taught adapted version Preschool PATHS curriculum for Pakistani Children in the classrooms while the control group did not receive any intervention. However, the control groups received teachers training, counseling services and lessons on self control with children as requested by the school administration after completion of intervention project.

Sample.

Sample was drawn from seven preschool (four intervention and 3 control) classes and consisted of 101 (boys=49, girls=52) preschool children. There were 54 children in intervention classrooms and 47 children in control classrooms. These classes were identified from two school systems (two branches each) in Rawalpindi and Islamabad cities in Pakistan. The sample was selected using purposive sampling

technique. The selected schools were further categorized as intervention and control sites. The intervention group consisted of 54 while the control group consisted of 47 children. At post-test, the sample was reduced to 90 children (boys=44, girls=46),.47 in intervention group and 43 in control group. Reasons of the attrition were migration of kids to other schools or families moving to other cities. For details regarding sample characteristics, see Table 1.

Sampling Procedure. At the initial step, the Federal Directorate of Education, Pakistan and different private sector schools were contacted. Presentations were made about the importance and process of the project. As the concept of school based interventions was new in the country, only 4 private sector school systems agreed to participate in the project if selected through screening process based on frequency of behavior problems in preschool classrooms as rated by teachers. The sampling procedure can be explained by following flowchart.

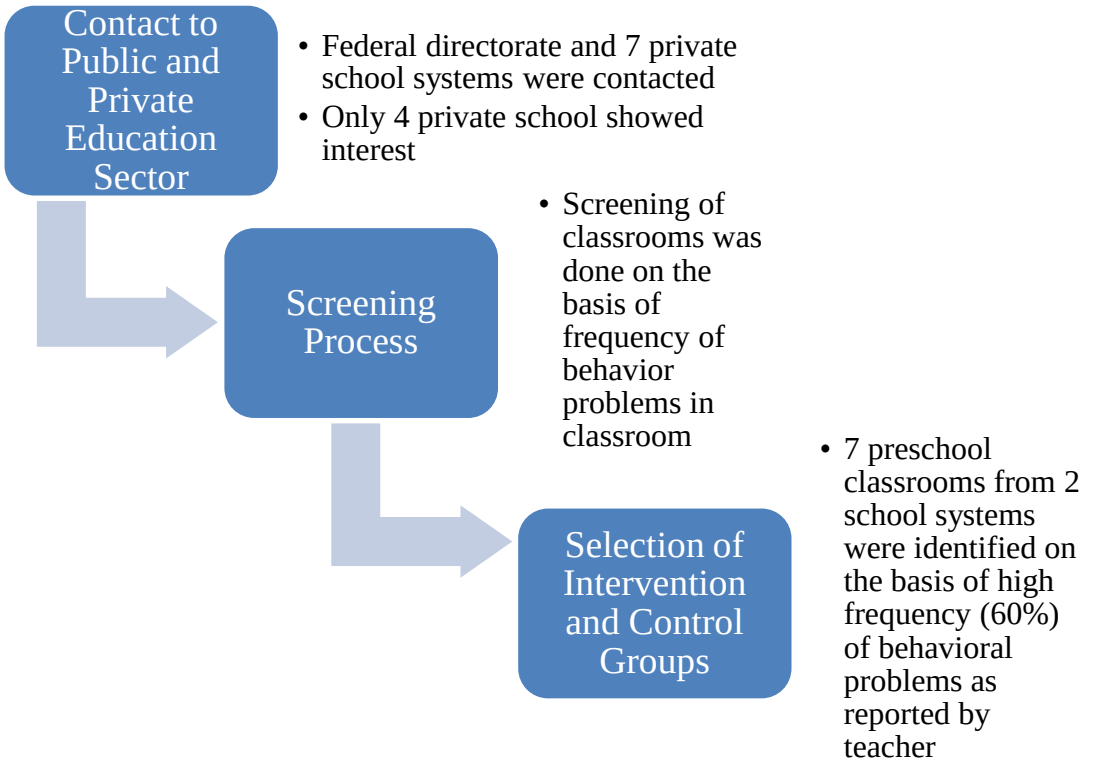

Figure 3. Sampling Procedure

Criteria of selection and inclusion. The frequency of behavior problems in the classroom was taken as one of the inclusion criteria in effectiveness trial. This frequency was not based on any empirical screening measure of behavioral problems but the perception of teachers as they observe behaviors of children. That step was intended to somewhat compare the two selected groups on the basis of behavioral problems. Formal empirical assessment was done during pretesting on the outcome measure of behavioral problems.

Another criteria was the age of children. Although, preschool group ranges from 3-6 years, the present study included only those preschool groups with children who are of four years or above in age but less then five years at pretest.

Table 2

Sample Description (N=101)

Variables	Control Group Percentage/Mean(SD)	Intervention Group (Percentage/Mean(SD)
Child's age	4.18(.104)	4.16(.099)
Child's gender		
Male	23(48.9%)	26(48.1%)
Female	24(51.1%)	28(51.9%)
Fathers' Education in Years	14.34(1.64)	14.93(1.41)
Mothers' Education in Years	13.61(2.10)	13.19(2.88)
Family monthly income	Rs.51333.33(19833.26)	Rs.43936.17(15249.24)

Intervention

Preschool PATHS for Pakistani Children. The adapted version of preschool PATHS curriculum originally developed by Domitrovich et al. (2005) was used in this study. The adapted curriculum consisted of 35 lessons which are grouped together in 9 units. The details of these are as follows

Unit 1: Fostering positive classroom climate. Unit 1 deals with the core SEL approach of developing a positive and facilitating learning environment. It consists of four lessons which are designed to make the learning activity more fun especially

focusing on the group cohesion concept which also entails the sense of responsibility in children. This unit also emphasizes the mutual cooperation between peers.

Unit 2: Basic Feelings I. Unit 2 lays the foundation of the core social-emotional skills by introducing the concept of feelings to children. It emphasizes that feelings are normal natural human responses to situations and also provide detailed content on identifying two basic feelings that is happy, and sad. The unit also deals with developing prosocial concepts in children through highlighting importance of friendship. These topics are covered in four lessons. At the end, emotion sharing session is designed to provide children with an opportunity to discuss their emotional experiences focusing on the happy and sad feelings.

Unit 3: Basic Feelings II. Unit 3 consists of three feeling lessons based on the two difficult feelings that are angry and afraid and one emotion sharing session.

Unit 4: Self control. Unit 4 introduces the concept and techniques of self control. The main objective of this unit is to develop a system of managing disruptive behaviors, self control and signaling your distress to others. The lessons in this unit all deal with the above mentioned goals. ‘Doing Turtle’ is a related to the concept that whenever a turtle feels discomfort or danger in the environment, it goes into its shell. Likewise we intend to teach children that whenever they feel they are having some uncomfortable feeling, the first thing they do is to stop them. Think about the problem and say it. The unit consists of 6 lessons which also include the lesson on calm and relaxed feeling followed by emotion sharing session.

Unit 5: Sharing, caring and friendship. This unit facilitates positive peer relations, emotional identification, and compassion for others. These skills are useful for children in developing successful social relationships. The unit consists of 4 lessons on sharing and caring behaviors, making friends and review of feelings learned earlier.

Unit 6: Basic problem-solving. This unit deals with yet another core SEL skills which is problem solving. The unit is designed to enhance children's skills to deal effectively with problem situations, manage their behaviors, and think about positive ways of solving social problems with peers. The unit also intends to improve children's ability to think through problem situations to understand their logical consequences. The unit consists of 3 lessons.

Unit 7: Intermediate feelings. This unit introduces some more feelings to children in order to develop their emotion vocabulary. There are 6 lessons in this unit discussing different intermediate feelings like excited, proud, frustrated etc. The unit also focuses on non judgmental description of uncomfortable feelings so that children learn to accept all types of feelings. This unit also provides an opportunity to students to use role-playing techniques.

Unit 8: Advanced feelings. This unit describes some advance feelings which children feel at this stage but don't have a conscious awareness of them. This unit talks about feelings of love, worry, disappointment, jealousy, and guilt. The same

technique is used here that is to identify these emotions and the situations I which we feel these emotions. These 5 lessons are followed by the emotion sharing session and the wrap-up session.

Measures.

Demographic Information. An eight item form was developed to gather information about various demographic features of the sample based on literature and expert opinion. This form elicited information like child's age, gender, monthly family income, father's education and mother's education.

Behavioral Issues in Class. A brief questionnaire was developed to evaluate the frequency of behavioral issues in the class. Teachers were asked to identify behavioral issues of children in the class from a list of 10 problems. They were also asked to describe the percentage of children exhibiting these problems in the class.

Emotion Knowledge. The Kusche Emotion Inventory (Kusche, 1984) was developed to evaluate preschool children's ability to recognize different emotions. The Recognition of Emotion Concepts subtest was adapted and revised by Spletz, DeKlyen, Calderon, Greenberg, and Fisher (1999). For present study, this revised version was adapted for Pakistani children. The Recognition of Emotions subtests consisted of 30 stimuli (Cronbach's $\alpha = .64$) pages each having four cartoon figures depicting different emotions. Out of these four carton figures, one depicted the target emotions while the three were distracters. Children were asked to identify the correct

emotion. For each trial, a score of 2 was given for the correct response and 0 for incorrect response. If children identified the valance of the target emotion correctly (For example, happy for excited expression), they got a score of 1. The highest score is 60 for this measure. For the original measure, Kusche (1984) reported a test-retest reliability of .85. For the adapted version, the Cronbach's alpha coefficient was reported as .73 (Rhodes, Greenberg, & Domitrovich, 2009).

***Social Competence*.** A translated version of Social Competence Scale-Teacher Ratings (Conduct Problems Prevention Research Group, 1990) was used to assess the social competence of children. The scale consists of 25 items (Cronbach's $\alpha = .72$) and three subscales namely prosocial/communication skills, emotion regulation skills, and academic skills. The responses were scored on a five point Likert scale; Not at all (0), A little (1), Moderately well (2), Well (3), and Very well (4). In addition to the subscale scores and total score, a combined score of prosocial/communication and emotion regulation subscales was also calculated. The Cronbach's alpha coefficient of the original measure was reported as 0.98 (Corrigan, 2003).

Behavioral Problems of Children. An Urdu translation of preschool version of Child Behavior Checklist, CBCL (11/2-5)-TRF was used to assess the emotional and behavioral problems of preschool children as reported by teachers. The scale was developed by Achenbach and Rescorla (2000). The checklist consisted of 99 items (Cronbach's $\alpha = .92$) assessing different emotional and behavioral problems of preschool children while there is one open ended item. There are six empirically based syndrome scales which are designated as Emotionally Reactive,

Anxious/Depressed, Somatic Complaints, Withdrawn, Attention Problems, and Aggressive Behavior. These syndrome scales broadly form two subcategories of behavioral problems namely internalizing and externalizing. In addition to that, it also provides five DSM based scales namely Affective Problems, Anxiety Problems, Pervasive Developmental Problems, Attention-Deficit/Hyperactivity Problems, and Oppositional Defiant Problems. Scoring was done on a 3 point scale, where 0 = not true, 1 = sometimes true, and 2 = often true or very true. The Cronbach's alpha coefficient of the original measure was .88 for total problem scale and .89 and .77 for externalizing and internalizing subscales respectively (Achenbach & Rescorla, 2000).

Procedure.

The intervention project started in spring 2011. As the first step, pretest child assessments were conducted at the beginning of school year in Mar-April, 2011 in both intervention and control classrooms. For this purpose, multi method assessment strategy was used. One measure was direct child assessment where children were evaluated on the measure of emotion knowledge in quiet locations within schools. The social competence and behavior problem ratings were taken from class teachers. The school administration sent the demographic information form to parents of both intervention and control group with a cover letter from school explaining the project and ensuring confidentiality of information. A 5 day teachers training was conducted for 8 teachers from intervention school at the end of summer break in August 2011. This training was designed to elaborate the theoretical background and implementation techniques of PATHS curriculum. Training was delivered by the

researcher in Urdu language. As schools were identified as intervention and control sites so PATHS curriculum was delivered in 4 preschool classes in intervention school. While 3 classrooms served as control group. PATHS lessons were conducted from September 2011-February 2012 with the intervention classrooms. The curriculum consisted of 35 lessons delivered twice a week by the project teachers. Each lesson was of 30-35 minutes duration. Weekly planning sessions were also conducted with implementation teachers to prepare lessons for the upcoming week and to discuss practical issues during implementation of lessons. Posttest assessments of both intervention and control group was done in August 2012 after summer break. The same assessment battery was used for posttest except demographic information sheet which was only collected at pretest. Feedback from implementation teachers was also taken on their experiences with curriculum implementation and changes in children's behaviors during the process.

Study Design and Analyses Plan

This study is an effectiveness trial using a Quasi-experimental waitlist non-equivalent control group design, where intervention group was taught PATHS curriculum during the trial while the control group was used for comparison purpose but later services were also provided to them according to their requirements.

The first phase of the research was translation and adaptation of the program and the outcome measures of the study. The details of translation of outcome measures are given in Chapter II. Brislin (1980)'s guidelines have been used for that

purpose. Further, the psychometric properties of the scales were established through internal consistency indices.

Pretesting of the measures was done in spring 2011. As the sampling strategy was non probability, therefore initially the two groups were compared to assess possible baseline differences between the groups on demographic variables and outcome measures. This step was also done to determine possible covariates of the study which could be modeled in interpreting any changes in scores of outcome measures at the posttest.

To evaluate the impact of intervention, pre-post data was analyzed for any change in scores on outcome measures through Analysis of Covariance (ANCOVA). To deal with the issue of attrition of sample (in current study, 11 individuals from intervention and control group were lost at the post assessment), intention to treat using last observation carried forward (LOCF) technique was used. So the impact analysis was done with the total sample present at the baseline. In order to see if the LOCF technique has any impact on results, the analysis was rerun with only the completer's data. Between subject gender effects were also assessed with in the intervention group using repeated measures ANOVA.

RESULTS

Chapter III

RESULTS

This chapter describes the results of the pre and post data collected from intervention and control group. The analyses were done in following four steps.

Step I: Preliminary Analysis

The first step included preliminary analysis of the data which was done to explore the descriptive statistics and internal consistency of the study measures.

Table 3

Descriptive Statistics and Alpha Coefficients of the Outcome Measures (N=101)

Variable	No. of Items	*M*	*SD*	α	Range		Skew
					Potential	Actual	
KEI							
Receptive Subtest	30	32.83	6.46	.64	0-60	21-58	0.97
SCS-T							
Total Scale	25	37.52	6.21	.72	0-100	19-45	-.09
Prosocial/Commun.	8	12.92	2.54	.57	0-32	4-15	-0.89
Emotion Regulation	10	15.35	3.67	.68	0-40	8-21	0.18

Continued…

Variable	No. of Items	*M*	*SD*	α	Range		Skew
					Potential	Actual	
Academic Skills	7	9.26	2.47	.51	0-28	2-16	-0.30
Combined	18	25.57	4.20	.59	0-72	13-33	-0.66
CBCL-CTRF							
Total Scale	99	31.09	15.2	.92	0-198	5-55	-.09
Internalizing	32	9.73	4.23	.68	0-64	1-17	-.31
Externalizing	34	11.91	7.59	.90	0-68	1-29	.50

*Note.*KEI= Kusche Emotion Inventory, SCS-T= Social Competence Scale- Teacher, CBCL($1^{1/2}$-5)-CTRF= Child Behavior Checklist ($1^{1/2}$-5)-Caregiver/Teacher Report Form

Table 3 shows the alpha co-efficient and skewness of all translated and adapted scales of KEI-R, SCS teacher rated and CBCL. The table shows medium to strong internal consistency for all scales. It further suggests the relevance of translated scales for Pakistani population.

Step II: Preschool behavior problem profile of total and subscales

As behavior problems of children was a main variable of concern for this study, so this section was meant to understand the overall picture of problem behaviors of preschool children participating in this study.

Table 4

Frequency of Behavioral Problems on T Score Categories of CBCL ($1^{1/2}$-5)-CTRF (N=101)

Categories	Normal	Borderline	Clinical
Total Problem Score	54(53.5%)	47(46.5%)	-
Externalizing	74(73.3%)	26(25.7%)	1(1%)
Internalizing	66(65.3%)	34(33.7%)	1(1%)

Table 4 shows the number and frequencies of categories of behavioral problems on T scores comparison with the normative sample. Based on teacher's rating on CBCL, 46.5% of all preschool children were categorized as having borderline behavioral problems while 53.5% were rated in the normal category of behavioral problems. On externalizing subscale, 25.7% of all children were categorized as having borderline externalizing problems while 1% was rated in the clinical range. 33.7% of all children were rated as having borderline internalizing problems while 1% was reported in the clinical range. Children in the clinical range were dropped out of the study vey initially during implementation phase.

Table 5

Gender wise Frequency of Behavioral Problems on T Score Categories of CBCL ($1^{1/2}$-5)-CTRF (N=101)

Categories	Normal		Borderline		Clinical	
	Boys	Girls	Boys	Girls	Boys	Girls
Total Problem Score	21 (20.8%)	33 (32.7%)	28 (27.7%)	19 (18.8%)	-	-
Externalizing	29 (28.7%)	45 (44.6%)	19 (18.8%)	7 (6.9%)	1 (1%)	-
Internalizing	36 (35.6%)	30 (29.7%)	12 (11.9%)	22 (21.8%)	1 (1%)	-

Table 5 shows gender wise frequency distribution of sample on T score categories of CBCL. The values reflect that boys exhibit more behavior problems on total and externalizing behaviors as compared to girls as rated by teachers. However, girls show more internalizing problems as compared to boys.

Table 6

Comparison of Gender on Total and Subscales of Child Behavior Checklist

	Boys (n = 49)	Girls (n = 52)		95% Cl		Cohen's
CBCL($1^{1/2}$-5)-CTRF	*M*(*SD*)	*M*(*SD*)	*t*(99)	LL	UL	*d*
Total Score	35.2(15.29)	27.31(14.37)	2.69**	2.09	13.81	0.54
Externalizing	14.53(8.09)	9.44(6.21)	3.55***	2.24	7.92	0.71
Internalizing	10.14(4.03)	9.50(4.57)	0.74	-1.06	2.34	-

Note. CBCL($1^{1/2}$-5)-CTRF= Child Behavior Checklist ($1^{1/2}$-5)-Caregiver/Teacher Report Form

CI = Confidence Interval; LL = Lower Limit; UL = Upper Limit; **p< .01, ***p<.001

Comparison of gender on over all and subscales of problem behaviors revealed significant differences on total problem scores and on externalizing behaviors with boys scoring high on total problem scale and externalizing problems subscale then girls. Although, boys have slightly higher mean on internalizing subscale then girls, yet the difference is non significant.

Step III: Baseline comparisons between intervention and control group on demographic variables and measures of the study

This section involves the baseline comparisons of intervention and control groups on variables of interest. The main purpose of this part of analyses was to have a broader and comprehensive picture of the control and intervention groups and also to identify certain covariates for further analysis.

Table 7

Baseline comparison between control and intervention group on continues demographic variables (N=101)

Variables	Control Group	Intervention Group		95% Cl		Cohen
	M(*SD*)	*M*(*SD*)	*t*(99)	*LL*	*UL*	's *d*
Child's age	4.18(.10)	4.16(.099)	-.867	-.05	.02	
Fathers' Education in years	14.34(1.64)	14.93(1.41)	1.92	-.01	1.18	
Mothers' Education in years	13.61(2.10)	13.19(2.88)	.84	.56	1.40	
Family monthly income	51333.33(19833.2)	43936.17(15249.2)	2.07*	331.54	14462.2	0.41

*p< .05

Table 7 shows baseline comparisons between control and intervention group on different continues demographic variables. The intervention and control groups are significantly different on family monthly income. *t* values show no significant differences between control and intervention group on child's age, gender and parents education level.

Table 8

Baseline comparison between control and intervention group on discreet demographic variables (N=101)

Variable	Control Group (*n* = 47)	Intervention Group (n = 54)	χ^2	*p*
Child's gender				
Male	23(48.9%)	26(48.1%)	.006	
Female	24(51.1%)	28(51.9%)		
*Strength in Class				
12 Children	0(0%)	12 (22.2%)	32.04	.01
13-16 Children	29(61.7%)	42(77.8%)		
18 Children	18(38.3%)	0(0%)		

**Number of pupils in the class, df=99*

Table 8 shows baseline comparisons between control and intervention group on different continues demographic variables. The intervention and control groups are significantly different on family monthly income. values show no significant differences between control and intervention group on child's age, gender and parents education level.

Table 9

Baseline comparison between control and intervention group on outcome measures (N=101)

Variables	Control Group (n = 47)		Intervention Group (n = 54)		
	M	*SD*	*M*	*SD*	*t*- value
KEI-R					
Total Score	31.89	5.21	33.65	7.39	1.36
Emotion Accuracy (Percent Correct)	28.72	9.86	35.06	17.68	2.17*
SCS-T					
Total Score	33.17	6.15	33.61	6.04	0.36
Prosocial	10.81	2.76	11.26	2.86	0.80
Emotion Regulation	13.00	2.71	13.26	2.65	0.48
Academic Skills	9.36	2.71	9.09	2.61	-.50
Combined	23.81	4.60	24.52	4.57	0.77
CBCL-CTRF					
Total Problem Score	29.64	16.09	32.50	14.56	0.93
Internalizing	9.34	4.36	10.22	4.25	1.02
Externalizing	11.72	8.62	12.07	6.62	0.23

Note.KEI= Kusche Emotion Inventory, SCS-T= Social Competence Scale- Teacher, CBCL($1^{1/2}$-5)-CTRF= Child Behavior Checklist ($1^{1/2}$-5)-Caregiver/Teacher Report Form , *$p < 0.05$

Table 9 shows baseline differences between control and intervention group on outcome measures. t-tests showed significantly higher means for the intervention group on accuracy score of emotion knowledge. For total score on emotion knowledge, social competence and behavior problems, there were no significant differences between intervention and control group.

Step IV: Effectiveness of PATHS Curriculum

This section comprises of analyses of pre-post data from intervention and control group on study measures to evaluate the effectiveness of PATHS curriculum. It also deals with gender differences on impact of intervention. As we have observed attrition effect in the sample, therefore main analyses were intention to treat analysis using LOCF technique. Keeping in view the limitation of LOCF technique that it sometimes overestimates or underestimates the effect sizes, the analysis was rerun on data without imputations.

Table 10

Analysis of Covariance for out come measures at pre and post assessment (N=101)

Variables	Intervention Group (n = 54)		Control Group (n = 47)			
	Pretest $M(SD)$	Posttest $M(SD)$	Pretest $M(SD)$	Posttest $M(SD)$	F	Cohen's d
KEI-R						
Total Score	33.65(7.33)	36.67(6.83)	31.89(5.21)	33.49(4.35)	5.49*	.55
Accuracy Score	35.06(17.68)	36.42(17.33)	28.72(9.86)	31.56(9.03)	0.328	
SCS-T						
Total Score	33.61(6.04)	36.17(5.12)	33.17(6.15)	33.28(5.11)	8.28**	.56
Prosocial	11.26(2.86)	11.39(1.94)	10.81(2.76)	10.96 (2.53)	0.479	
Emotion Reg	13.26(2.65)	15.41(2.77)	13.00(2.71)	13.17(2.80)	15.98***	.80
Academic	9.09(2.61)	9.35(2.51)	9.36(2.71)	9.15(2.44)	0.690	
Combined	24.52(4.57)	26.83(3.94)	23.81(4.60)	24.13(4.70)	10.78**	.67
CBCL-CTRF						
Total Score	32.50(14.56)	25.63(10.71)	29.64(16.09)	30.11(15.54)	65.49***	-.33
Externalizing	12.07(6.64)	8.26(3.93)	11.72(8.62)	12.30(9.47)	45.85***	-.55
Internalizing	10.22(4.25)	8.72(3.46)	9.34(4.36)	9.43(4.02)	26.15***	-.18

*Note.*KEI= Kusche Emotion Inventory, SCS-T= Social Competence Scale- Teacher, CBCL($1^{1/2}$-5)-CTRF= Child Behavior Checklist ($1^{1/2}$-5)-Caregiver/Teacher Report Form, *$p<.05$, **$p<.01$, ***p=.000

For the main effect of time, ANCOVA analysis was used where pretest scores on outcome measures were controlled and difference on means were calculated on post test score so evaluate the effectiveness of the intervention. Difference in means after adjusting the pretest measures, F values for posttest scores are observed to be statistically significant between intervention and control group for emotion knowledge, social competence, and behavioral problems. However, non-significant differences were observed for emotion accuracy scores and two subscales of social competence i.e. prosocial/communication and academic skills. Interaction between time and condition was significant for social competence, *F (1, 99 = 40.69, p=.000)* and behavioral problems, *F (1, 99 =* 3.70*, p=.05).* While the time*condition interaction was non-significant for emotion knowledge, *F (1, 99 = 1.44, p=.23).*

As observed in the preliminary analyses, the two groups also differed significantly on family monthly income and strength in the classroom. Thus all the analyses were rerun with these demographic variables as covariates along with the baseline measures. After controlling for classroom strength, results were no longer significant for emotion knowledge reported on KEI-R, *F (1, 99 = .54, p = .47)* while significance level increased for the same variable, *F (1, 99 = 7.74, p = .006)* after controlling monthly family income.

To calculate effect size, post-treatment mean of the control group was subtracted from the post-treatment mean of the treatment group, and the difference was divided by the pooled standard deviation of the groups at post assessment (Cohen, 1992).

Table 11

Analysis of Covariance for out come measures at pre and post assessment without imputations (N=90)

Variables	Intervention Group (n = 47)		Control Group (n = 43)			
	Pretest *M*(*SD*)	Posttest *M*(*SD*)	Pretest *M*(*SD*)	Posttest *M*(*SD*)	ANCOVA *F*	Cohen's *d*
KEI-R						
Total Score	33.45(7.58)	36.91(7.01)	31.81(5.31)	33.56(4.39)	5.76**	.57
Accuracy Score	34.96(18.29)	36.52(17.90)	28.76(10.70)	31.86(9.20)	0.294	
SCS-T						
Total Score	33.89(5.99)	36.83(4.61)	33.07(6.37)	33.19(5.27)	11.77***	.73
Prosocial	11.40(2.74)	11.60(1.62)	10.70(2.85)	10.86 (2.61)	1.66	
Emotion Reg	13.34(2.63)	15.81(2.54)	13.09(2.74)	13.28(2.84)	19.48***	.93
Academic	9.15(2.67)	9.43(2.44)	9.28(2.75)	9.05(2.44)	0.986	
Combined	24.74(4.43)	27.40(3.35)	23.79(4.75)	24.14(4.20)	15.44**	.85
CBCL-CTRF						
Total Score	33.89(5.99)	25.47(9.73)	33.07(6.07)	30.58(15.84)	84.74***	-.38
Externalizing	12.26(6.72)	7.87(3.35)	12.09(8.90)	12.72(9.77)	54.75***	-.66
Internalizing	10.57(4.18)	8.85(3.36)	9.33(4.43)	9.42(4.06)	27.34***	-.19

Note.KEI= Kusche Emotion Inventory, SCS-T= Social Competence Scale- Teacher, CBCL($1^{1/2}$-5)-CTRF= Child Behavior Checklist ($1^{1/2}$-5)-Caregiver/Teacher Report Form, *p<.05, **p<.01, ***p=.000

Table 11 shows the results of data without imputations from pre-post test of study measures. F value here also is based on post test mean differences while controlling the pretest scores. As discussed in literature, using LOCF technique here to handle the issue of attrition of sample at post has some effects on results. The

results of data without imputation show that the significance level on two variables specifically and effect sizes generally are increased.

Table 12

Between Subject Gender Effects on Pre-Posttest Scores for Intervention Status (N=54)

Variables	Pre-test		Post-test			
	Boys (*n* = 26)	Girls (*n* = 28)	Boys (*n* = 26)	Girls (*n* = 28)	*Time* Gender*	Cohen ’s *d*
	M(*SD*)	*M*(*SD*)	*M*(*SD*)	*M*(*SD*)	*F*	
KEI-R						
Total Score	34.69(7.77)	32.68(6.89)	38.27(8.22)	35.18(4.92)	0.488	
Accuracy Score	36.92(18.94)	33.33(16.58)	40.12(19.56)	32.96(14.49)	0.890	
SCS-T						
Total Score	32.85(5.95)	34.32(6.14)	35.62(4.74)	36.68(5.49)	0.177	
Prosoc/Com	11.08(2.68)	11.43(3.07)	11.42(1.74)	11.43 (2.26)	0.433	
Emotion Reg.	12.73(2.08)	13.75(3.05)	14.73(2.10)	16.04(3.19)	.171	
Academic	9.04(2.93)	9.14(2.33)	9.46(2.70)	9.21(2.18)	0.593	
Combined	23.81(4.12)	25.18(4.94)	26.15(3.05)	27.46(4.58)	.005	
CBCL-CTRF						
Total Score	39.31(13.32)	26.18(12.88)	29.73(10.31)	21.82(9.77)	9.92**	.78
Externalizing	15.15(6.88)	9.21(5.02)	9.73(4.35)	6.89(2.97)	7.35**	.76
Internalizing	11.35(3.54)	9.18(4.65)	9.58(2.85)	7.93(3.82)	1.72	

Note.KEI= Kusche Emotion Inventory, SCS-T= Social Competence Scale- Teacher, CBCL($1^{1/2}$-5)-CTRF= Child Behavior Checklist ($1^{1/2}$-5)-Caregiver/Teacher Report Form , ***p<.01*

Table 12 shows the between subject effects on intervention status with reference to gender. The results reflect that the time* gender interaction is significant on total score on behavioral problems and externalizing problems. Difference of

means from pre to post assessment is significantly different for boys and girls in behavioral problems total score and externalizing problems. The difference of means suggest that as a result of intervention, behavioral problems in boys decreased significantly then girls at post test.

DISCUSSION

Chapter IV

DISCUSSION

Present study was conceptualized and conducted in the context of introducing the evidence based universal prevention programs in the research arena of developing countries like Pakistan. The available data on disturbing mental health scenario (WHO, 2011) in the country especially high prevalence rate of behavioral problems in young children (Hussein, 2008) suggests a dire need for remedial efforts at early stages of development. Since preventive interventions have proven effective in reducing the prevalence of childhood behavior disorder in different societies across the globe, the present research intended to shift the focus of researchers and service providers from treatment to prevention of developmental psychopathology. In this context, the present research provides preliminary evidence of adapted version of Preschool PATHS curriculum in indigenous context of Pakistan.

The Promoting Alternative Thinking Strategies (*PATHS*) preschool version, developed by Domitrovich et al. (2005), was selected for present investigation. In order to meet the primary objectives of the study, the curriculum was translated and adapted according to indigenous context of Pakistan. The curriculum was selected for two reasons. First, Center for the Study and Prevention of Violence (2004) has categorized PATHS as model violence prevention program based on evidence of preventive effects with strong research design, sustained impact and replication at multiple sites. Secondly, PATHS has proven effectiveness in different non-English speaking cultures (Arda & Ocak, 2012; Kam et al., 2011). Lastly, PATHS has been widely used for adaptation in almost 10 countries with diverse cultures.

The adaptation process has been discussed in detail in chapter II. This section would focus on the qualitative aspect of program implementation which was a unique experience. Prevention research is very different in its nature from the survey research technique commonly used in academic studies so the challenges were also different and difficult to handle. The research design was longitudinal and it required to actually getting into the system of schools to ensure fidelity of implementation. For that, full support of school administration was of utmost importance. This was also identified as one of the key factors in successful program implementation during initial tryout of adapted version of the curriculum. This level of commitment and support was only offered by private sector schools. Another factor which was important to consider for proper program implementation was strength of students in the classroom. For these two important reasons, sample was restricted to private sector schools only.

As the curriculum was supposed to be implemented by the teachers so preparing them for that process was very important. Five day extensive pre implementation training was designed with two main objectives; (1) to introduce the theoretical perspective of preventive interventions; (2) to equip teachers with practical skills of program implementation. Usually a two day training session is conducted but considering the fact that the curriculum was implemented for the first time in Pakistan, teachers needed in-depth understanding of concepts and techniques of curriculum content. Different techniques like session planning, facilitation skills, role plays, and recoded sessions were used to learn how different aspects of program were implemented in real classroom setting. The main challenge during this training was to switch roles between a teacher and a facilitator as PATHS sessions are not supposed

to be a one way process of learning. Teachers also learned how to use generalization techniques to reinforce the message of a particular session.

Keeping in view the lack of experience of teachers with non-formal education strategies, the researcher had to assist the teachers in program implementation. The curriculum was implemented in four preschool groups at the start of the day. For kids, the most interesting aspect of the curriculum was the puppets. Although children got along with the content of lessons easily, however, initially it was difficult for them to share their own views and thoughts on topics. For instance, in the beginning children were not able to give complements to their classmates but eventually they learnt it really well and started focusing on each other's behaviors while giving complements. Making rules was a very fruitful activity as children learnt why it is important to set some conditions to promote healthy learning environment. One of the implementation teachers commented about her class:

> "The unit focusing on positive classroom environment had a tremendous impact on children's behavior as we saw a gradual change in them. It feels that they have started taking responsibility of maintaining discipline in the classroom."

This also seemed to have a positive impact on their behaviors in homes as one of the mothers reported:

> "My kid learnt a lot through PATHS lessons as earlier he had difficulty following rules at home like going to bed early and brushing teeth at night but now he had learnt that making rules is good for him so gradually I noticed a positive change in his behavior"

The feelings lessons were also new for children as this was the first time they started talking about their feelings in such depth. The most interesting activity during feelings sessions was the use of feeling faces. Children gradually learnt how to identify their correct feeling state and show it through feeling card. At one particular time, the display of feelings initiated a feeling talk between friends which led them to resolve the issue that was making one of them angry. Emotion sharing sessions also provided children with an opportunity to talk about their emotional experiences especially the difficult feelings like angry, jealous, and frustrated.

The most interesting activity of the whole curriculum was 'Turtles Technique' both for children and teachers. Children learnt the activity quickly and used it whenever needed. One of the other school teacher who was not involved with PATHS lessons commented:

> "That technique became the sign of PATHS group. It was interesting to see children doing three steps of calming down during break time, in the play ground and at swings."

The challenge, however, was to differentiate between the appropriate and inappropriate times to use this technique. Teachers had to be extra vigilant in reinforcing this behavior as one implementation teacher reported that children started using this technique get more weekly stars.

As observed and reported by teachers, one of the major problems of children in intervention group was difficulty in sharing things and making friends. Usually parents of this particular group didn't appreciate their children to share things with other children especially lunch. To deal with this issue, teachers with the consent of

parents, designated one day as ‘sharing day’ when children can practically learn the prosocial skills.

Different generalization techniques were devised by implementation teachers to reinforce the content of the curriculum. One interesting thing is that implementation teachers incorporated the feeling concepts in the academic curriculum. They used different learning activities to generalize the emotion concepts. Children were given cutting, pasting and coloring activities with templates of emotions pictures given the manual.

This section of discussion is focused on quantitative analysis of the impact of intervention study. As regard to psychometric properties of the outcome measures of the study, the alpha coefficient values of the translated measures showed low to strong internal consistency for the three measures and their respective subscales. For KEI-R, SCS-T and its subscales, the alpha value ranged from 0.51 to 0.72, which shows acceptable internal consistency of measures. Similar alpha values have been reported by various studies for preschool social-emotional competence scales (Arda & Ocak, 2012; Winsler & Wallace, 2002). These alpha values can also be justified on small sample size as literature indicates that small sample size may also yield low alpha values (Charter, 2003). Strong internal consistency indices were observed for CBCL-CTRF total scale and externalizing subscale ranging from 0.90 to 0.92. While acceptable alpha value of 0.68 was reported for internalizing subscale. This can be explained by the fact that internalizing disorders are subjective feelings of internal distress; they are often not reliably identified by external observers. Such features also make these disorders difficult to detect in preschool children (Tandon, Cardeli, & Luby, 2009).

Although not directly phrased as an objective of the study, the profile of behavior problems of the sample was assessed by calculating frequency of behavior problems in total sample at pretest based on t score categories. The literature on prevalence of behavioral problems in Pakistani children is scarce. The available evidence, although employing population based samples, yet focused on middle and old childhood and certain geographic regions of the country. The nationwide profile of behavioral problems of children is yet to be established. Preschool behavioral problems have never been focused in researches in Pakistan. We found that frequency of borderline behavioral problems on child behavior checklist in preschool community sample was quite high (46.5%). The earlier studies with children of 5-11 years of age showed a prevalence of 34.4% in the abnormal (clinical) range on strengths and difficulties questionnaire (Hussein, 2008). Some international studies also reflected a relatively high percentage of emotional and behavioral problems in clinical range in preschool children (Eapen et al., 2004; Thabet et al., 2000; Wu et al., 2012).

The frequency of externalizing problems was found to be 25.7% of the total sample that is somewhat consistent with the existing literature on prevalence of disruptive behaviors in preschool children in different eastern cultures (Hebrani et al., 2007; Samarakkody et al., 2012). Child's gender was found to be significantly related to high levels of behavioral problems where boys scored high on overall problems and externalizing subscale as compared to girls. This finding is in line with the existing literature on childhood behavior problems (Chen, 2010; Graves, Blake, & Kim, 2012; Hussein, 2008; Luk, Leung, & Bacon-Shone, 1991).

The baseline difference in distribution of demographic characteristics between the intervention and control group was assessed using independent sample t-test and chi-square analysis where applicable. The main purpose of this step was to identify the factors that might confound the results of impact of intervention on outcome measures. Three levels of demographic variables were assessed; (1) child characteristics that included age and gender of children; (2) family characteristics that included parents education level and family monthly income; (3) school characteristics that included number of students in the classroom. Both the intervention and control groups were somewhat similar with statistically non significant differences on most of the demographic variables. The reason can be the groups were initially compared on some factors like age and type of schools. However, the two groups differed significantly on family monthly income and number of students in the classroom. The two groups were also compared on baseline assessment on outcome measures. This step was done to assess whether there is significant difference between the intervention and control groups on outcome measures at baseline. The two groups differed significantly only on the accuracy scores of emotion knowledge as assessed by KEI-R.

Findings of the impact analysis (intention to treat) of intervention showed effectiveness of PATHS on children's social-emotional competence and behavior problems. It was hypothesized that children in the intervention group would have better social and emotional skills and lesser behavioral problems as compared to children in control group according to teacher report. Results of pre-post data for two groups using Analysis of Covariance (ANCOVA) revealed significant differences between two groups on total score of recognition of emotions subtest and measure of

social competence. Children of intervention group also showed significant decrease in behavior problems at posttest as reported by class teacher as compared to children in control group where an increasing trend was observed. These findings are consistent with the available evidence on effectiveness of PATHS for improving social-emotional competence and reducing behavioral problems (Conduct Problems Prevention Research Group, 2010; Crean & Johnson, 2013; Domitrovich et al., 2007; Goossens et al., 2012; Greenberg et al., 1995; Greenberg & Kusche, 1998; Kam, Greenberg, & Kusche, 2004; Kam et al., 2011).

However, intervention did not have significant impact on children's ability to correctly recognize emotions as measured by accuracy scores of KEI-R. Although intervention group has higher mean accuracy scores then the control group, yet the difference was statistically not significant. Similar findings are reported on one year implementation of preschool PATHS curriculum (Arda & Ocak, 2012). Non-significant findings were also observed for prosocial/communication and academic skills subscale of social competence scale which is contrary to the available evidence (Bierman et al., 2008).

Besides the pre-post differences for outcome measures for intervention and control group, the variables that were differently distributed between the two groups at the baseline were included as covariates in the analysis. This step allows separating the main effect of intervention from that of time and the initial differences on demographic variables. The intervention effects remained significant for teacher reported social competence and behavior problems of students even after controlling for factors like family monthly income and strength of students in the classroom. This suggests that the curriculum proves to be an effective intervention for enhancing

social competence and preventing behavior problems in children. However results were no longer significant for emotion knowledge after controlling for classroom strength. This can be an interesting indigenous finding as classroom strength also emerged as an important factor as reported by implementation teachers in the qualitative analysis.

For an intervention research, it becomes very important to evaluate the strength of impact. Cohen's approach was used to calculate the effect sizes (Cohen, 1992). The magnitude of effects of curriculum implementation between intervention and control group were moderate ranging from 0.55-0.56 for recognition of emotions, social competence and externalizing subscale of CBCL-CTRF while small effect size ranging from -.18 to -.33 was reported for total problem score and internalizing subscale. Large effect size of 0.80 is observed for emotion regulation subscale of social competence scale.

The above reported values of effect size can better be explained by comparing them with those reported in prior studies as suggested in the literature (Thompson, 2002). Domitrovich et al. (2007) reported effect size of 0.36 on recognition of emotions and 0.48 for social competence on a sample of 246 preschool children. Bierman et al. (2008) reported small effect size (d= 0.24) for impact of intervention on preschool children's social competence as reported by teachers. Another study reported an effect size of 0.34 for impact of intervention on social competence of elementary school children (Conduct Problems Prevention Research Group, 2010). Malti et al. (2011) reported moderate effect size for impact of PATHS intervention ranging from 0.42-0.46 for aggressive behavior and ADHD as reported by teachers for a sample of first graders in Switzerland. The strength of impact sustained for the

second year follow-up on teacher reported attention deficit hyperactivity behavior (Malti et al., 2012). However, a more recent evaluation found small effect size of -.15 for conduct problems in a sample of third to fifth grade children (Crean & Johnson, 2013).

The issue of missing data due to differential attrition both in intervention and control group at the posttest was handled by using last observation carry forward technique (LOCF). Although the number of participants lost were only 11 from the total sample, yet it is important to consider the limitation of using the LOCF technique in analysis of intervention. As suggested in the literature, imputing data through LOCF technique can sometimes over or under estimates the impact of treatment or intervention in clinical trials (Armijo-Olivo, Warren, & Magee, 2009). So it is important to compare the analysis of completers with intent to treat analysis to evaluate any variation in results. For that purpose, data of completers (without imputations) was analyzed. The effects of intervention remained significant for the outcome measures. However, significance level on emotion knowledge total score specifically and effect sizes generally were increased.

Gender emerged as an important demographic variable in preschool behavioral problems. Between subjects effect on intervention status with reference to gender were calculated in order to see if impact of intervention on outcome measures varies between boys and girls. The findings revealed that significant time effect was present only on CBCL-CTRF total and externalizing subscale score suggesting that as a result of intervention, behavioral problems in boys decreased significantly then girls at post assessment (Webster-Stratton, 1996).

Limitations and Suggestions for Future Researchers

The findings of the current study can be viewed in the context of certain limitations. First, the design of the study is non equivalent control group design which is not true experimental design and lacks randomization. Although intervention and control groups were compared on certain factors of interest essential for the study yet the issue of sampling bias is there. As a result, the generalizability of the findings is limited. It is very important for future researchers to plan intervention studies with improved research design specifically employing randomized control trials.

Second, it was a small scale study with only 101 students. Although, there are examples in the literature of intervention studies using small sample size even then it is suggested that future studies should use large sample which would enhance the authenticity of the results of effectiveness trial. Another important limitation is the restricted geographical spread due to logistic issues. This factor is also linked with sample size. Not only have these two factors challenged the authenticity and generalizability of results in terms of quantitative analysis but here it should also be considered that effectiveness trial of a specific intervention program is not only about numbers but it is also related to qualitative aspect of program implementation. As the project was not funded, the cost-benefit analysis was not possible. Future studies can utilize logistic support in program implementation in the form of engaging a funding agency to invest resources so that a large scale study can be planned across different geographical regions of the country with a thorough cost-benefit analysis in terms of PATHS implementation cost per beneficiary.

Another limitation of the present research was lack of follow-up assessments on impact of intervention on children. It is crucial to evaluate the long term impacts of the intervention in an effectiveness trial because the strength of intervention lies in the sustainability of the impact. Also, the issue of sustainability becomes much relevant in action researches, which are conceptualized with an aim to provide services to a specific segment of population. Implementation quality is another important factor taken into account while conducting intervention researches. This factor ensures the fidelity of intervention that is strongly suggested in international literature. Future research projects should focus on sustainability and implementation quality of the intervention.

Due to the limited scope of the study, only private sector schools were included in the study. This factor not only restricted the researcher to compare the difference of school ecologies (public vs. private sector) on impact of intervention. This could be a very interesting comparison in intervention researches in indigenous context. Selection of private sector schools also limited the scope of the study by restricting socioeconomic status of the sample. Majority of the population belonging to middle to lower socioeconomic strata who are attending public sector schools were excluded from the study due to some practical sampling issues. Future studies should consider these factors.

Summing up the limitations of present study, the future researchers should consider some basic factors while designing school based intervention research in indigenous context of Pakistan. This type of research project should be a collaborative effort involving academia, education department and non-governmental organizations working in the field of mental health. Funding is another important factor which

should be taken into account while designing such studies. It is also recommended that different universities should launch a large scale project to establish the basis of intervention research in Pakistan.

Implications of the Study

The future implication of the present research has three dimensions. First, it is one of the premier researches in Pakistan introducing the use of evidence based intervention of developmental psychopathology. The current study stands out by focusing on the concept of prevention of childhood disorders and developing positive competencies in children. For academia, this project would open new avenues of intellectual pursuit of understanding more about evidence-based practices and school based interventions. As suggested earlier, a fully funded intervention project in future would also provide future researchers with an opportunity to reflect on cost–benefit analysis of implementation of PATHS curriculum in Pakistan.

For schools, this project has provided a solution for one of the major concern of teachers and school administrator which is behavioral problems of children. The use of social-emotional learning curriculum in schools is not only useful for general behavior management of students but it would also create a better school environment which would enhance academic learning of students. The curriculum can also be used as an effective after school activity and in summer camps during vacations. This curriculum is also useful for implementation staff as the whole process would change their understanding of children's behaviors and competencies and how to effectively deal with these issues. The adapted version of the curriculum can also be used in clinical settings by child psychologists.

The National Curriculum for Early Childhood Education (2007) clearly outlines the area of social-emotional development as a key area of interest in early childhood education. Yet the core social-emotional skills are not reflected in the approved curriculum outline. The current study provides an evidence-based social-emotional curriculum which is adapted and tested in the indigenous context and can be included in the early childhood education policy at national and provincial level for implementation in both public and private sector schools.

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Appendix-A

Demographic Information Sheet

Child's Name: ……..

Child's Age: …… ……..

(Years) **(Months)**

Gender: Girl Boy

Father's Education (Please mention number of years):

……

Mother's Education (Please mention number of years):

……

Father's Occupation: ……..

Mother's Occupation: ……..

Family Monthly Income: ……

Appendix-B

FREQUENCY OF BEHAVIORAL PROBLEMS IN CLASSROOM

ٹیچر کا نام: ----------

کلاس: ----------

کلاس میں بچوں کی تعداد: ----------

کیا آپ اپنی کلاس کے بچوں میں کرداری مسائل دیکھتی ہیں۔

ہاں نہیں

اگر ہاں تو مندرجہ ذیل سے جو آپ اپنی کلاس کے بچوں کے بارے میں مناسب سمجھتی ہیں اور مسائل کی نشاندہی کریں۔

1۔ لڑائی جھگڑا

2۔ کام پر توجہ دینا

3۔ سیٹ پر نہ بیٹھنا

4۔ بات نہ ماننا

5۔ اداس دینا/افسردہ رہنا

6۔ الگ تھلگ رہنا

7۔ رونا

8۔ کلاس میں ہونے والی سرگرمیوں میں حصہ نہ لینا

9۔ سکول/ کلاس میں آنے پر رونا۔

10۔ چھوٹی چھوٹی باتوں پر پریشان ہونا

آپکے خیال میں آپکی کلاس میں کتنے فی صد بچے ان مسائل کے ساتھ ہیں۔

1۔ 0 ۔ 20

2۔ 20 ۔ 40

3۔ 40 ۔ 60

4۔ 60 ۔ 80

5۔ 80 ۔ 100

APPENDIX-E

CBCL - CAREGNER TEACHER REPORT FORM

FOR AGES 1 1/2 - 5

بچے کا پورا نام: ----------

جنس: لڑکا/لڑکی **عمر:** **قومیت:**

آج کی تاریخ: دن مہینہ سال **بچے کی تاریخ پیدائش:** دن مہینہ سال

بچے کے مختلف رویوں سے متعلق اپنی رائے اس فارم میں پُر کریں۔ضروری نہیں کہ دوسرے لوگ آپکی رائے سے اتفاق کریں۔ ہر بیان کے آگے اضافی جگہ موجود ہے۔ بچے سے متعلق اگر کچھ اور تفصیلات آپ لکھنا چاہتی ہیں۔تو ہر بیان کے آگے صحفہ نمبر 2 پر تحریر کریں۔ برائے مہربانی تمام بیانات کے جواب دیں۔

سکول و نام اور پتہ:۔

والدین کا پیشہ: (بے شک آجکل بے روزگار ہوں) برائے مہربانی پیشے کا نام لکھیں جیسے استاد، ڈاکٹر، پولیس آفیسر، بزنس مین وغیرہ

والد کا پیشہ:۔

والدہ کا پیشہ:۔

فارم پُر کرنے والے کا نام:۔

سکول میں آپکی حیثیت:۔

پرائمری سکول ٹیچر بچوں کی دیکھ بھال کرنے والی۔

اس جاب کے لیے آپکی ٹریننگ

پڑھانے کا تجربہ: **سال:**

سکول کی قسم:

(ڈے کیئر، نرسری سکول، پری سکول، سپیشل بچوں کو سکول، پرائمری سکول، پبلک سکول، پرائیویٹ سکول)

2۔ کلاس میں بچوں کی تعداد

3۔ بچہ سکول میں ایک ہفتے میں کتنے گھنٹے گزارتا ہے۔

4۔ آپ بچے کو کتنے عرصے سے جانتی ہیں۔

5۔ آپ بچے کو کتنی اچھی طرح جانتی ہیں۔

ا۔ بالکل نہیں۔۔۔۔۔۔۔۔۔۔۔۔ 2۔ کچھ حد تک ۔۔۔۔۔۔۔۔۔۔۔۔۔ 3۔ بہت اچھی طرح۔۔۔۔۔۔۔۔۔۔۔۔

6۔ کیا اس بچے کو کبھی کسی مسئلے کی وجہ سے سپیشل ایجوکیشن پروگرام یا سائیکالوجسٹ کے پاس بھیجا گیا ہے۔

ذیل میں بچوں کے رویوں کے حوالے سے کچھ بیانات دیئے گئے ہیں۔

ہر بیان بچے کے موجودہ یا پچھلے 2 مہینوں کے دوران رویوں کی عکاسی کرتا ہے اگر یہ بیان بچے کے رویے کے بارے میں بالکل درست ہے تو 2 پر دائرہ لگائیں اگر یہ بیان بچے کے رویے میں کسی حد تک درست ہے تو 1 پر دائرہ لگائیں اگر یہ بیان بچے کے رویے کے بارے میں بالکل درست نہیں تو 0 پر دائرہ لگائیں۔

برائے مہربانی تمام بیانات کے جواب دیں بے شک کچھ بیانات بچے کے رویے سے متعلق نہ ہوں۔

1۔	درد کی شکایت کرتا ہے/ کرتی ہے۔(بغیر کسی وجہ کے اس میں سر درد اور پیٹ درد شامل نہیں ہے)	2	1	0
2۔	اپنی عمر سے چھوٹے بچوں کی طرح حرکتیں کرتا/ کرتی ہے۔	2	1	0
3۔	کوئی بھی نیا کام کرتے ہوئے ڈرتا ہے/ڈرتی ہے۔	2	1	0
4۔	دوسروں سے نظریں ملا کر بات نہیں کرتا/ کرتی	2	1	0
5۔	زیادہ دیر کے لیے توجہ نہیں دیتا یا زیادہ دیر متوجہ نہیں رہ سکتا۔	2	1	0
6۔	ٹک کر نہیں بیٹھ سکتا/ ستی۔ بے چین اور پھرتیلا/ پھرتیلیہے۔	2	1	0
7۔	چیزوں کی بے ترتیبی برداشت نہیں کرسکتا/ کرسکتی۔	2	1	0
8۔	اپنی باری کا انتظار نہیں کرسکتا/ کرسکتی۔ ہر چیز فوراً درکار ہوتی ہے۔	2	1	0
9۔	کھانے والی چیزوں کے علاوہ اشیاء چباتا ہے/چباتی ہے۔	2	1	0
10۔	بڑوں کے ساتھ چپکا رہتا ہے/رہتیہے۔یا دوسروں پر بہت انحصار کرتا ہے/ کرتی ہے۔	2	1	0
11۔	ہر وقت دوسروں کی مدد لینا چاہتاے/چاہتی ہے۔	2	1	0
12۔	بے حس ہے۔	2	1	0
13۔	بہت روتا ہے/روتی ہے۔	2	1	0
14۔	جانوروں کے ساتھ ظلم کرتا/ کرتی ہے۔	2	1	0
15۔	نافرمابردار ہے/خودسر ہے۔	2	1	0
16۔	خواہشات کی فوری تکمیل چاہتا ہے/چاہتی ہے۔	2	1	0
17۔	اپنی چیزیں خود خراب کرتا/ کرتی ہے۔	2	1	0
18۔	دوسروں کی چیزیں/اشیاء خراب کرتا/ کرتی ہے۔	2	1	0
19۔	خیالوں میں کھویا رہتا/رہتی ہے۔	2	1	0
20۔	نافرمابردار ہے۔	2	1	0
21۔	روزمرہ معمولات میں تبدیلی سے بے چین ہوجاتا/جاتی ہے۔	2	1	0
22۔	دوسروں کے ساتھ ظلم کرتا ہے/ کرتی ہے/رعب جماتا ہے/جماتی ہے۔	2	1	0
23۔	لوگوں کی باتوں کا جواب نہیں دیتا/دیتی۔	2	1	0

24۔	ہدایات پر عمل کرنے میں مشکل پیش آتی ہے۔	2	1	0
25۔	دوسرے بچوں کے ساتھ مشکل سے گھلنا ملتا/ ملتی ہے۔	2	1	0
26۔	مذاق کرنا نہیں جانتا/جانتی۔ بڑوں کی طرح سنجیدہ رہتا ہے۔	2	1	0
27۔	غلط کام کرنے کے بعد شرمندگی محسوس نہیں کرتا/ کرتی۔	2	1	0
28۔	دوسرے بچوں کو تنگ کرتا/ کرتی ہے۔	2	1	0
29۔	آسانی سے جھنجلا جاتا ہے۔	2	1	0
30۔	جلدی حسد کرنے لگتا ہے/ لگتی ہے۔	2	1	0
31۔	کھانے والی چیزوں کے علاوہ چیزیں کھاتا/ کھاتی ہے			
	(اس میں ٹافیاں شامل نہیں ہیں) بیان کریں_____	2	1	0
32۔	سکول کے علاوہ کچھ جگہوں، واقعات اور جانوروں سے ڈرتا/ڈرتی ہے۔	2	1	0
33۔	احساسات آسانی سے مجروح ہو جاتے ہیں۔	2	1	0
34۔	بہت زیادہ چوٹیں لگواتا ہے/ لگواتی ہے۔	2	1	0
35۔	لڑائیوں میں بہت زیادہ شامل ہوتا/ہوتی ہے۔	2	1	0
36۔	ہر چیز میں دخل دیتا/دیتی ہے۔	2	1	0
37۔	والدین سے الگ ہونے پر بہت پریشان ہو جاتا/جاتی ہے۔	2	1	0
38۔	تباہ کن اور غیر یقینی رویے۔	2	1	0
39۔	سر درد کی شکایت (بغیر کسی طبی وجہ کے)	2	1	0
40۔	دوسروں کو مارتا ہے/مارتی ہے۔	2	1	0
41۔	اپنا سانس روکتا/روکتی ہے۔	2	1	0
42۔	بغیر مقصد کے دوسرے لوگوں اور جانوروں کو نقصان پہنچاتا/ پہنچاتی ہے۔	2	1	0
43۔	بغیر وجہ کے ناخوش رہتا ہے/رہتی ہے۔	2	1	0
44۔	غصیلا موڈ دیتا ہے۔	2	1	0
45۔	جی متلاتا ہے/طبعیت خراب رہتی ہے۔(بغیر کسی طبی وجہ کے)	2	1	0
46۔	بے چین حرکات کرتا ہے/ کرتی ہے۔ بیان کریں	2	1	0
47۔	بے چین اور پریشان رہتا/رہتی ہے/حساس ہے۔	2	1	0
48۔	دیئے گئے کام نہیں کر سکتا/ سکتی۔	2	1	0

49۔	سکول سے ڈرتا/ گھبراتا ہے۔	2	1	0
50۔	بہت تھکا ہوا رہتا/رہتی ہے۔	2	1	0
51۔	بے چین رہتا/رہتی ہے۔	2	1	0
52۔	دوسرے بچے اسے تنگ کرتے ہیں۔	2	1	0
53۔	دوسروں کو مارتا ہے۔	2	1	0
54۔	ناک میں انگلیاں ڈالتا/ڈالتی ہے/جلد اور دوسرے جسم کے اعضاء کو نوچتا ہے۔	2	1	0
55۔	اپنے جنسی اعضاء کے ساتھ کھیلتا/ کھیلتی ہے۔	2	1	0
56۔	بے ڈھنگا ہے۔	2	1	0
57۔	آنکھوں کے ساتھ مسائل رہتے ہیں (بغیر کسی طبی وجہ کے)	2	1	0
58۔	سزا کی وجہ سے رویوں پر کوئی اثر نہیں ہوتا۔	2	1	0
59۔	فوراً ایک کام چھوڑ کر دوسرا کام کرنے لگتا ہے۔	2	1	0
60۔	خارش اور دوسرے جلدی مسائل (بغیر کسی طبی وجہ کے)	2	1	0
61۔	کھانا کھانے سے انکار کرتا ہے/ کرتی ہے۔	2	1	0
62۔	کھیلنے سے انکار کرتا ہے/ کرتی ہے۔	2	1	0
63۔	سر اور جسم کو متواتر ہلاتا/ہلاتی ہے۔	2	1	0
64۔	توجہ نہیں دیتا/دیتی ہے۔آسانی سے توجہ ہٹا لیتا/لیتی ہے۔	2	1	0
65۔	جھوٹ بولتا/بولتی ہے۔دھوکہ دیتا/دیتی ہے۔	2	1	0
66۔	بہت زیادہ چیختا/چیختی ہے۔	2	1	0
67۔	دوسروں کے پیار والے رویوں کا کوئی جواب نہیں دیتا۔			
68۔	جلدی شرمندہ ہو جاتا/جاتی ہے۔	2	1	0
69۔	خود غرض ہے یا اپنی چیزیں دوسروں کے ساتھ نہیں بانٹتا/بانٹتی۔	2	1	0
70۔	لوگوں کے لیے بہت کم پیار اور ہمدردی کا اظہار کرتا/ کرتی ہے۔	2	1	0
71۔	اپنے اردگرد ہونے والی چیزوں میں بہت کم دلچسپی لیتا/لیتی ہے۔	2	1	0
72۔	چوٹ لگنے سے زیادہ ڈرتا/ڈرتی نہیں ہے۔	2	1	0
73۔	بہت شرمیلا/شرمیلی ہے۔	2	1	0
74۔	دوسرے بچے اسے زیادہ پسند نہیں کرتے۔	2	1	0

75۔	بہت زیادہ پھرتیلا/ پھرتیلی ہے۔	2	1	0
76۔	بولنے کے مسائل ہیں (بیان کریں)_____	2	1	0
77۔	خلا میں گھورتا/ گھورتی ہے۔ یا کسی سوچ میں دوبار ہتا ہے/رہتی ہے۔	2	1	0
78۔	پیٹ میں درد کی شکایت کرتا/ کرتی ہے۔ (بغیر کسی طبی وجہ کے)	2	1	0
79۔	اصولوں/ قوانین کی بہت زیادہ پابندی کرتا ہے/ کرتی ہے۔	2	1	0
80۔	عجیب وغریب رویے۔	2	1	0
81۔	ضدی ہے اور جلدی جھجلا جاتا/جاتی ہے۔	2	1	0
82۔	موڈ/احساسات میں اچانک تبدیلی آتی ہے۔	2	1	0
83۔	بہت روتا/روتی ہے/منہ بسورتا/بسورتی ہے۔	2	1	0
84۔	دوسروں کو بہت چڑاتا/چڑاتی ہے۔	2	1	0
85۔	روتا/روتی ہے نخرے دکھاتا/دکھاتی ہے۔	2	1	0
86۔	صفائی کا بہت زیادہ خیال رکھتا/رکھتی ہے۔	2	1	0
87۔	بہت زیادخوف زدہ اور پریشان رہتا/رہتی ہے۔	2	1	0
88۔	تعاون نہیں کرتا/ کرتی۔	2	1	0
89۔	سست ہے/بہت آہستہ چلتا/چلتی ہے اور توانائی کی کمی ہے۔	2	1	0
90۔	ناخوش، اداس اور پریشان رہتا/رہتی ہے۔	2	1	0
91۔	بہت زیادہ اونچی آواز سے بات کرتا/ کرتی ہے۔	2	1	0
92۔	نئے لوگوں اور نئے واقعات کی وجہ سے گھبرا جاتا/جاتی ہے۔	2	1	0
93۔	الٹی کی شکایت رہتی ہے۔	2	1	0
94۔	صاف ستھرا نظر نہیں آتا/ آتی۔	2	1	0
95۔	ادھر اُدھر پھرتا/پھرتی ہے۔	2	1	0
96۔	بہت زیادہ توجہ چاہتا/چاہتی ہے۔	2	1	0
97۔	شکایتی انداز میں روتا ہے/. روتی ہے۔	2	1	0
98۔	دوسروں سے الگ تھلگ رہتا/رہتی ہے۔	2	1	0
99۔	فکرمند رہتا/رہتی ہے۔	2	1	0

100۔ برائے مہربانی اگر بچے سے متعلق کچھ اور مسائل ہیں جو یہاں بیان نہیں کیے گئے تو انہیں تحریر کریں۔ 0 1 2

کیا بچے کو کوئی بیماری یا جسمانی کمزوری ہے۔(ذہنی یا جسمانی)

ہاں (بیان کریں_____

نہیں

اس بچے کی کونسی بات آپکو سب سے زیادہ پریشان کرتی ہے۔

_____

_____

اس بچے کی بہترین خصوصیات بیان کریں۔

_____

_____

Appendix-C

KUSCHE EMOTION INVENTORY

ہدایات: ہر صفحے میں دی گئی چاروں تصاویر میں سے کون سی تصویر درست احساس دکھا رہی ہے۔

نمبر	درست احساس	بچے کا جواب	حاصل کردہ نمبر (2-0)
1۔	پیار		
2۔	اُداس		
3۔	شرمندہ		
4۔	ڈرا ہوا/خوف زدہ		
5۔	پرجوش		
6۔	پریشان/سوچ میں پڑا ہوا		
7۔	شرمندہ		
8۔	غصہ میں		
9۔	حیران		
10۔	جھنجھلایا ہوا/چڑا ہوا		
11۔	فخر		
12۔	پریشان		
13۔	خوش		
14۔	تھکا ہوا		
15۔	مایوس		
16۔	اُداس		
17۔	پرجوش		
18۔	پریشان/سوچ میں پڑا ہوا		
19۔	تھکا ہوا/ہوئی		
20۔	ڈرا ہوا/ہوئی		
21۔	حیران		
22۔	فخر		

23۔ غصہ

24۔ شرمندہ

25۔ چڑا ہوا/ہوئی

26۔ پیار

27۔ مایوس

28۔ شرمندہ

29۔ پریشان

30۔ خوش

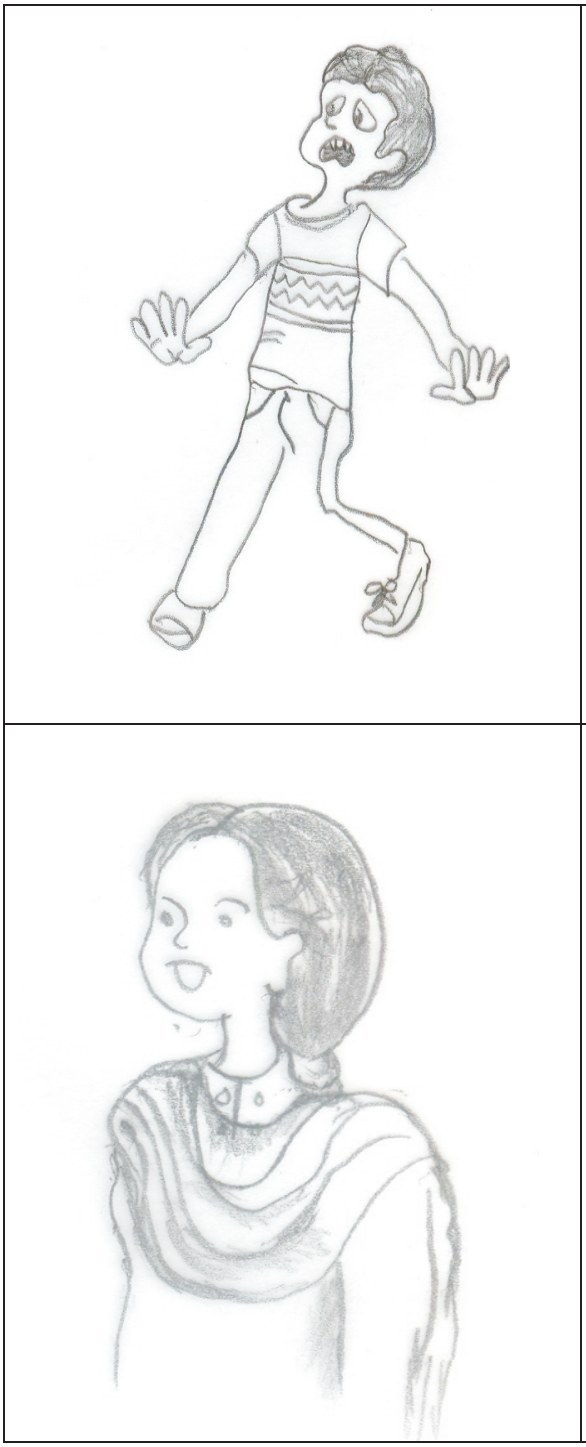
Appendix-D

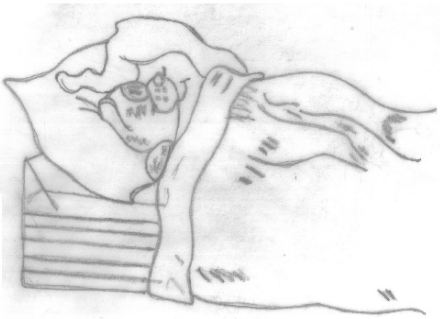
Social Competence-Teacher Version

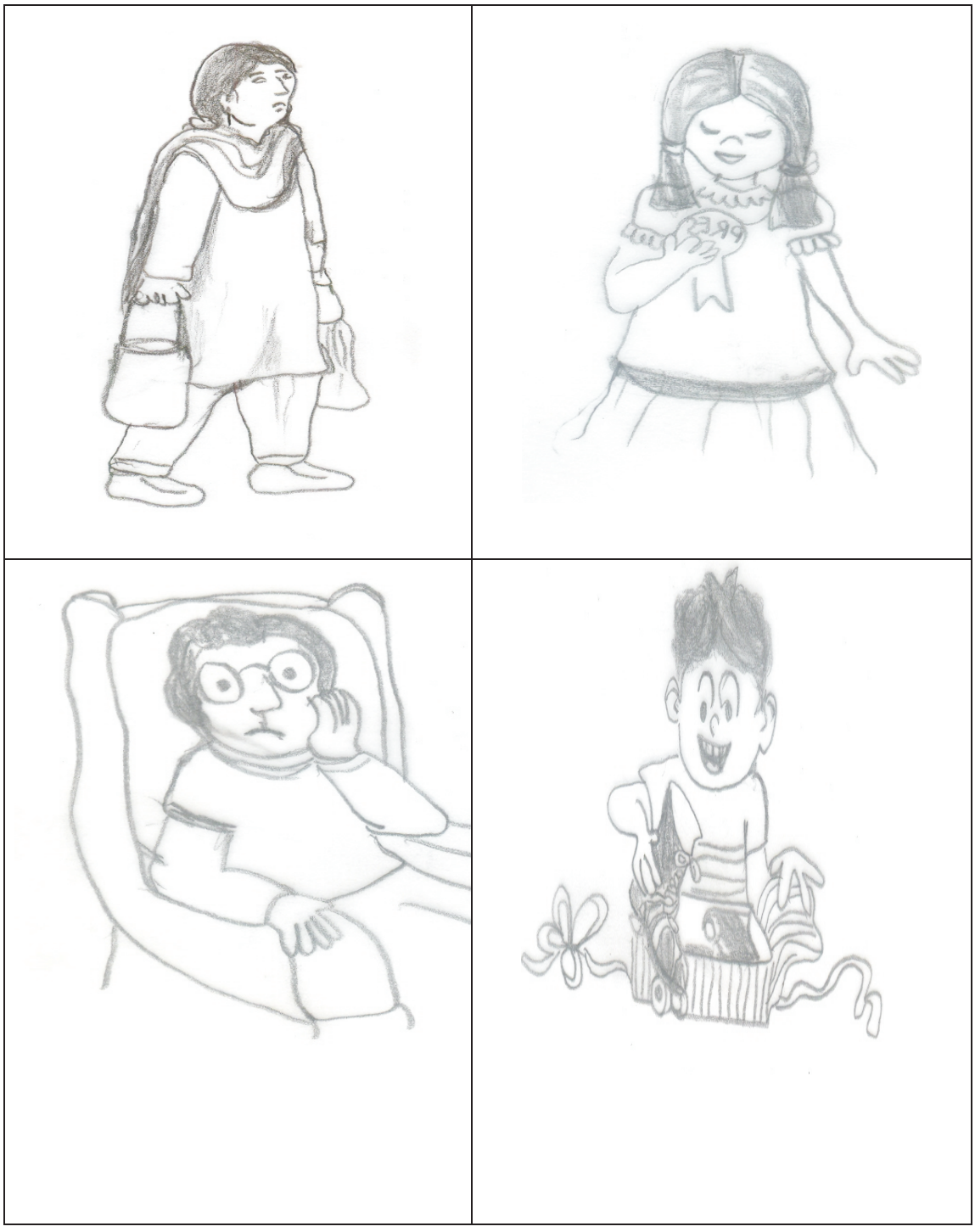
ہدایات:

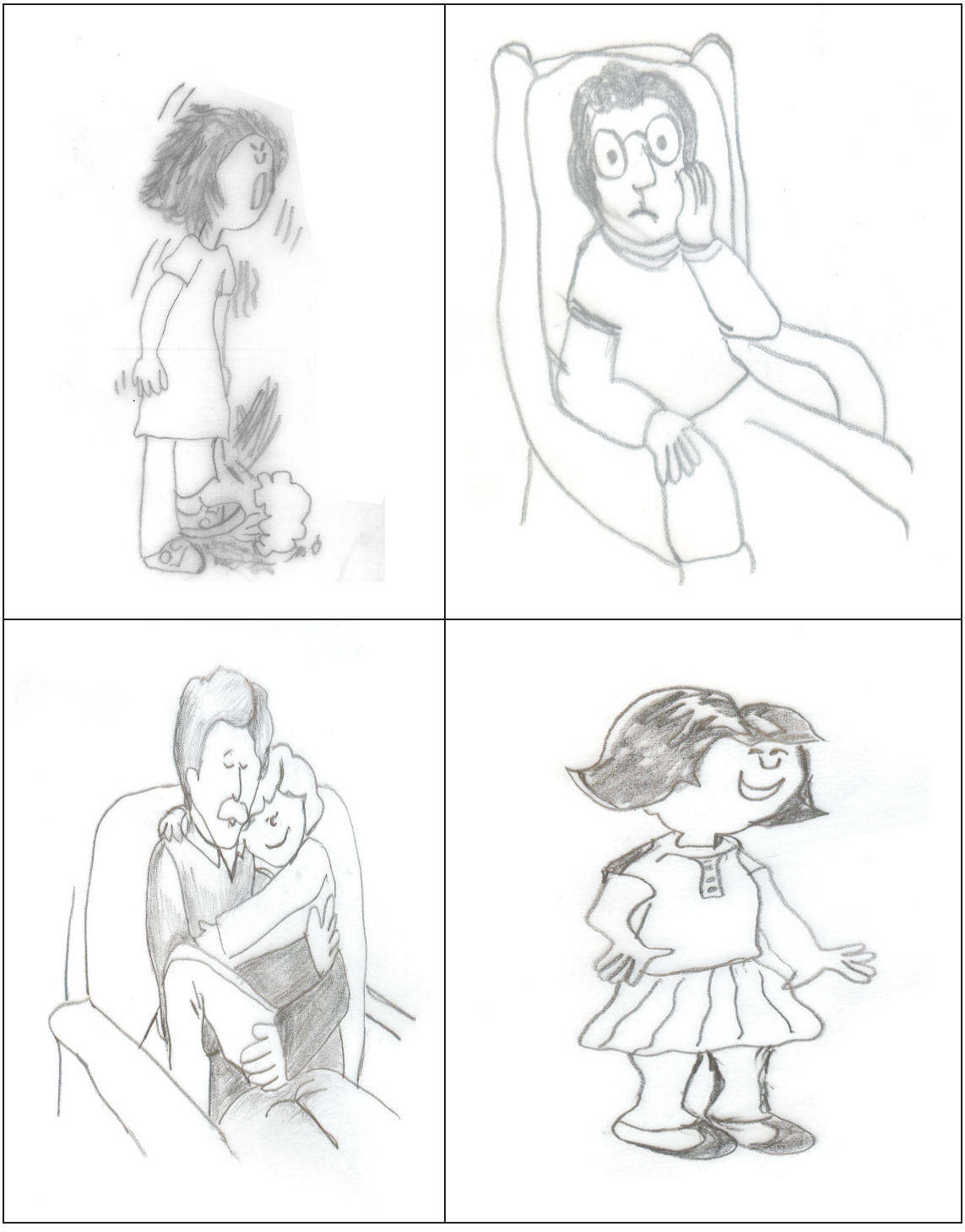
نیچےلسٹ میں موجود بیانات کواس بچے کے رویے کے مطابق ریٹ کریں۔

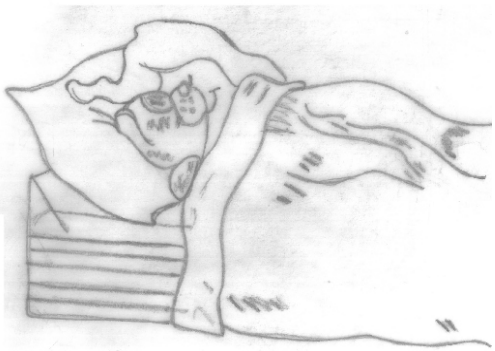
	بیانات	بالکل نہیں	بہت کم	مناسب حدتک	اکثر	بہت زیادہ
.1	توجہ میں خلل کے باوجود کام صحیح طور پر انجام دیتا ہے۔	0	1	2	3	4
.2	جو چیزیں/باتیں مرضی کے مطابق نہ ہوں انکو بھی مان لیتا ہے۔	0	1	2	3	4
.3	ناکامی کا سامنا اچھی طرح کر لیتا ہے۔	0	1	2	3	4
.4	کام خود سے شروع کرسکتا ہے۔	0	1	2	3	4
.5	بڑوں کی مدد کے بغیر بھی کھیل سکتا ہے/ کام کر لیتا ہے۔	0	1	2	3	4
6	جو پابندیاں جائز طور پر لگائی جائیں انہیں بھی مان لیتا ہے۔	0	1	2	3	4
.7	اپنی ضروریات اور احساسات کا اظہار مناسب طریقے سے کرتا ہے۔	0	1	2	3	4
.8	کچھ بھی کرنے سے پہلے سوچتا ہے۔	0	1	2	3	4
.9	ساتھیوں کے ساتھ ہونے والے مسلوں کو خود ہی حل کرتا ہے۔	0	1	2	3	4
.10	کام توجہ سے کرتا ہے۔	0	1	2	3	4
.11	جوش یا صدمے کی حالت میں خود کو قابو میں رکھ سکتا ہے۔	0	1	2	3	4
.12	ضرورت پڑنے پر قطار میں صبر کے ساتھ اپنی باری کا انتظار کرسکتا ہے۔	0	1	2	3	4
.13	دوسروں کے احساسات اور جذبات سمجھنے میں بہت اچھا ہے۔	0	1	2	3	4
.14	بخوبی سمجھتا ہے کہ اسکے طرزِ عمل کا کیا اثر ہوگا۔	0	1	2	3	4
.15	گروپ کے ساتھ مل کر بخوبی کام کرسکتا ہے۔	0	1	2	3	4
.16	کھیل اصولوں کے مطابق کھیلتا ہے۔	0	1	2	3	4
.17	توجہ دیتا ہے۔	0	1	2	3	4
.18	دوسروں سے اختلاف کی صورت میں اپنے جذبات پر قابو رکھتا ہے۔	0	1	2	3	4
.19	دوسروں کے ساتھ اپنی چیزیں بانٹ کر استعمال کرسکتا ہے۔	0	1	2	3	4
.20	کسی کے کہے بغیر ساتھیوں کی مدد کرتا ہے۔	0	1	2	3	4
.21	استاد کی ہدایات پر عمل کرتا ہے۔	0	1	2	3	4
.22	دوسروں کے کام آتا ہے۔	0	1	2	3	4
.23	دوسروں کی بات کو سمجھتا ہے۔	0	1	2	3	4
.24	رعب ڈالے بغیر اپنی رائے اور مشورے پر عمل کرواسکتا ہے۔	0	1	2	3	4
.25	دوسروں کے ساتھ دوستانہ انداز میں پیش آتا ہے۔	0	1	2	3	4

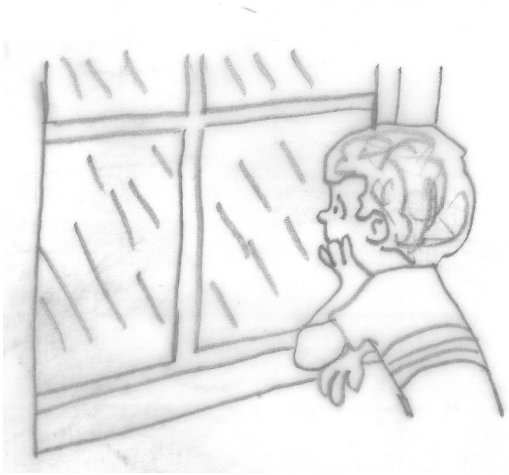


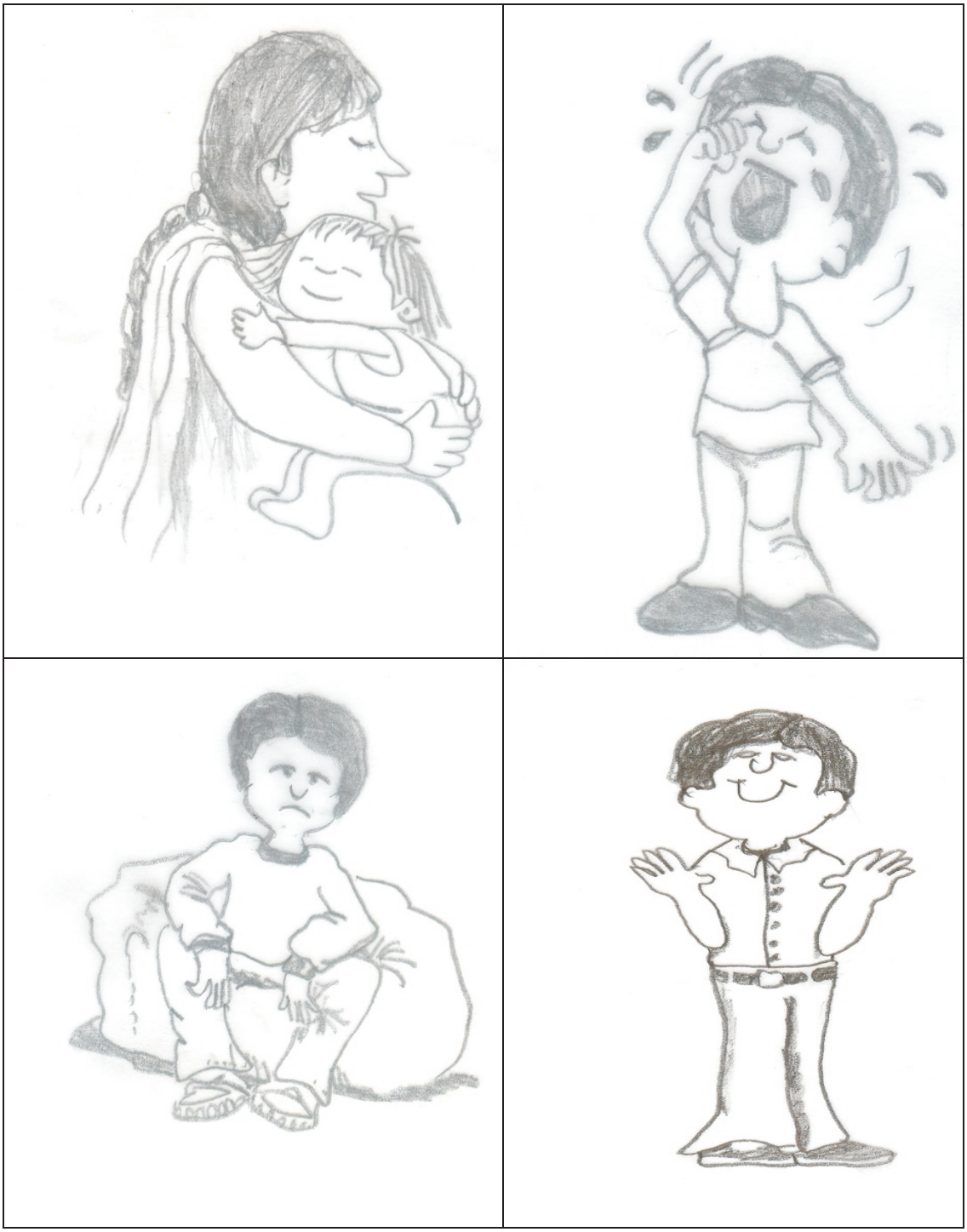


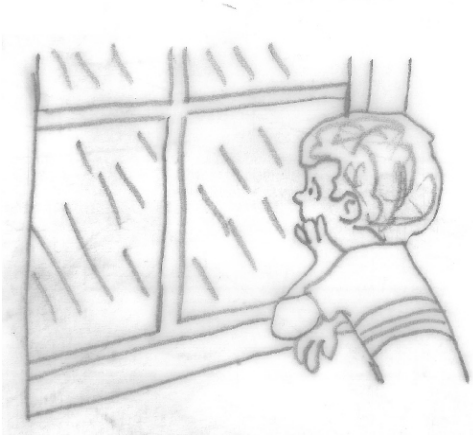










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Title: PhD Scholar

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