

**Moderating Role of Fear of Missing Out in the Relationship
Between Narcissism and Aggression Among Social Media
Users**



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Islamabad-Pakistan
2018

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A Research Report submitted in partial fulfillment of the
**Degree of Masters of Science
In Psychology**

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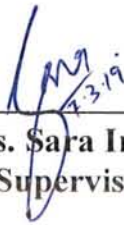


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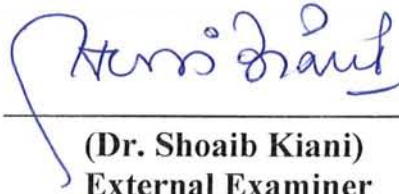
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Certificate

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Sara Imtiaz
Supervisor

Dedicated to my beloved parents

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Table of Contents

| | |
|------------------------------------|-----------|
| List of Tables | i |
| List of Figures | iii |
| List of Appendices | iv |
| Acknowledgment | v |
| Abstract | vi |
| Chapter 1 | |
| INTRODUCTION | 1 |
| Narcissism | 2 |
| Types of narcissism | 5 |
| Theories of narcissism | 7 |
| Fear of Missing out | 9 |
| Theories of missing out | 12 |
| Antecedents of Fear of Missing Out | 14 |
| Aggression | 14 |
| Types of Aggression | 16 |
| Theories of Aggression | 17 |
| Narcissism and Aggression | 18 |
| Demographic variables | 20 |
| Researches in Pakistan | 22 |
| Rationale | 22 |
| Chapter 2: METHOD | 24 |
| Research Design | 24 |
| Objectives | 24 |
| Hypotheses | 24 |
| Operational definitions | 25 |
| instruments | 26 |
| Part I: Tryout phase | 27 |
| Objectives | 27 |
| Sample | 27 |
| Procedure | 27 |

| | |
|------------------------------------|----|
| Chapter 3: RESULTS | 31 |
| Chapter 4: DISCUSSION | 56 |
| Conclusion | 61 |
| Limitations and Suggestions | 61 |
| Implications of The Study | 62 |
| References | 63 |
| Appendices | |

List of Tables

| Table no. | List of Tables | Page no. |
|-----------|--|----------|
| Table 1 | The demographics description of sample along with the frequency and percentage of main study ($N = 270$) | 28 |
| Table 2 | Alpha reliability coefficients and descriptive statistics for study variables ($N = 270$) | 32 |
| Table 3 | Correlation Matrix for Narcissism, Subscales of Narcissism FOMO, Aggression, Subscales of Aggression and Demographic Variables ($N = 270$) | 33 |
| Table 4 | Inter-scale correlation between Narcissism and its subscales, FOMO, Aggression and its subscales, FOMO, Social Media Engagement with demographic variables ($N = 270$) | 34 |
| Table 5 | Moderation Analyses Predicting Aggression from Narcissism and Fear of Missing Out Interaction ($N = 270$) | 36 |
| Table 6 | Moderation Analyses Predicting Anger from Authority and Fear of Missing Out Interaction ($N = 270$) | 37 |
| Table 7 | Moderation Analyses Predicting Physical Aggression from Authority and Fear of Missing Out Interaction ($N = 270$) | 39 |
| Table 8 | Moderation Analyses Predicting Hostility from Authority and Fear of Missing Out Interaction ($N = 270$) | 40 |
| Table 9 | Moderation Analyses Predicting Anger from Exhibitionism and Fear of Missing Out Interaction ($N = 270$) | 41 |
| Table 10 | Moderation Analyses for Predicting Physical Aggression from Exhibitionism and Fear of Missing Out Interaction ($N = 270$) | 42 |
| Table 11 | Moderation Analyses for Predicting Hostility from Exhibitionism and Fear of Missing Out Interaction ($N = 270$) | 43 |
| Table 12 | Moderation Analyses for Predicting Anger from Exhibitionism and Fear of Missing Out Interaction ($N = 270$) | 44 |

| | | |
|----------|---|----|
| Table 13 | Moderation Analyses for Predicting Physical Aggression from Exhibitionism and Fear of Missing Out Interaction (<i>N</i> = 270) | 44 |
| Table 14 | Moderation Analyses for Predicting Hostility from Exploitativeness and Fear of Missing Out Interaction (<i>N</i> = 270) | 45 |
| Table 15 | Gender based Group Differences on Study Variables among Social Media Users (<i>N</i> = 270) | 46 |
| Table 16 | Family System based Group Differences on Study Variables among Social Media Users (<i>N</i> = 270) | 47 |
| Table 17 | Area of Living based Group Differences on Study Variables among Social Media Users (<i>N</i> = 270) | 48 |
| Table 18 | Social Media Usage based Group Differences on Study Variables among Social Media Users (<i>N</i> = 270) | 49 |
| Table 19 | Facebook Users and Non-Users based Group Differences on Study Variables among Social Media Users (<i>N</i> = 270) | 50 |
| Table 20 | Instagram Usage based Group Differences on Study Variables among Social Media Users (<i>N</i> = 270) | 51 |
| Table 21 | Snapchat Usage based Group Differences on Study Variables among Social Media Users (<i>N</i> = 270) | 52 |
| Table 22 | Twitter Usage based Group Differences on Study Variables among Social Media Users (<i>N</i> = 270) | 52 |
| Table 23 | Viber Usage based Group Differences on Study Variables among Social Media Users (<i>N</i> = 270) | 53 |
| Table 24 | Imo Usage based Group Differences on Study Variables among Social Media Users (<i>N</i> = 270) | 54 |
| Table 25 | Skype Usage based Group Differences on Study Variables among Social Media Users (<i>N</i> = 270) | 55 |

| Figure No. | Figure Index | Page No. |
|-------------------|---|-----------------|
| Figure 1 | Moderating effect of Fear of Missing out between Narcissism and Aggression. | 36 |
| Figure 2 | Moderating effect of Fear of Missing out between Authority and Anger. | 38 |
| Figure 3 | Moderating effect of Fear of Missing out between Authority and Physical Aggression. | 39 |
| Figure 4 | Moderating effect of Fear of Missing Out between Exhibitionism and Anger. | 41 |
| Figure 5 | Moderating effect of Fear of Missing out between Authority and physical Aggression | 42 |

List of Appendices

| | |
|----------|------------------------------------|
| Appendix | Informed consent |
| Appendix | Demographic sheet |
| Appendix | Narcissistic personality Inventory |
| Appendix | Fear of missing out scale |
| Appendix | Aggression Questionnaire |

Acknowledgements

In the name of ALLAH, the most Merciful and the most Beneficent.

All the praise and thanks to Almighty ALLAH Who bestows His favors abundantly on us. I am thankful to ALLAH without Whom I could not have done this. He has been my hope and my strength throughout my life.

Then, I would like to express my sincere gratitude to my supervisor Ms. Sara Imtiaz for continuous support, motivation, and immense knowledge for thesis compilation. Her guidance helped me throughout the time of research and writing of this research report.

I am extremely grateful to my parents for providing me a very worthwhile support during difficult times. Without their moral support, I couldn't be able to complete my work.

I would like to thank my siblings Sibgha, Bushra, Aqsa, and Bilal for their help and support in data collection and my life in general.

Finally, I am highly thankful to Hina, Maham, and Rozia for supporting me emotionally throughout my research and studies.

Iqra Akmal Malik.

Abstract

The aim of conducting present study was to examine the moderating role of Fear of Missing Out in the relationship between Narcissism and aggression among social media users. Moreover, relationships of different demographics variables were also studied along with study variables. Narcissistic Personality Inventory NPI-13 (Miller, Hoffman, Reidy, Zeichner & Campbell, 2013), Fear of Missing Out Scale (Przybylski et al., 2013), and Aggression Questionnaire (Buss and Perry, 1992) were used to measure narcissism, fear of missing out and aggression respectively. The current study was consisted of two parts. The first part comprised of tryout phase that was aimed to demonstrate cultural appropriateness of the Scale. the sample of the try out phase consisted on 20 social media users. The second part was devoted to fulfilling study proposed objectives of the study The sample of the main study consisted of 270 social media users of different universities located in Rawalpindi and Islamabad. The convenient sampling technique was used for the selection of sample. Result of the correlation showed significant positive relationship between narcissism and aggression. Result of moderation showed fear of missing out as a moderator strengthened the relationship between narcissism and aggression. Gender differences showed that women are high on aggression and men are high on narcissism. With reference to social media usage, high users of social media scored higher on narcissism, fear of missing out, and aggression as compared to low social media users.

INTRODUCTION

Introduction

Now the world has been converted into a global village because of social media, as it is the biggest known platform for the execution of worldwide connections. Social media provides people a platform where they can communicate with other people by sharing their personal messages, information, videos, ideas, etc. Social networking forums are becoming very famous among the youth. These forums are being utilized for multiple purposes. For instance, they help to fulfill educational purpose for students. Students get opportunity to be in touch with their educational group by social media and it is also a good source of social support (Seabrook, Kern & Rickard, 2016).

With multiple advantages, social media also has some disadvantages. It has some negative influences on psychological wellbeing of social media users. People not only share their ideas on social networking sites but also want to know what others are doing in their lives. They have the desire to see activities of others especially their age fellows which can lead to anger among them. Fear of missing out is a significant disadvantage associated with social media engagement and is quite new concept. It is the desire to stay connected with others through social media tools i.e., Facebook, Twitter, WhatsApp etc. to get to know about what others are doing. People usually involve in social media throughout the day using computers, cellphones and tablets that serve to be the cause of social media usage that can lead to over usage and ultimately to addiction.

Social Networking Sites (SNSs) such as Facebook, Twitter, Snapchat, and WhatsApp have become an important part of the lives of hundreds of millions of users worldwide. Journalists and researchers have argued that the narcissistic tendencies are reflected by social networking behavior and users' narcissism is connected to popularity of Social Networking Sites (Buffardi & Campbell, 2008). However, the link between narcissism and the use of social networking sites is a matter of debate. Whereas some empirical studies found that there is a positive relationship between social networking behavior and narcissism or negative relationship, other studies found mixed results for the relationship of narcissism and social networking behavior (Panek, Nardis, &

Konratz as cited in Gnambs & Appel, 2018). Narcissists have unstable self-esteem (Rhodewalt, Madrian, & Cheney, 1998; Zeigler-Hill, Myers, & Clark, 2010) and narcissists face threats to their embellished self-concepts, they are more likely to react aggressively (Bushman & Baumeister, 1998). The current study is specifically designed to highlight the importance of one's feelings of missing out an event one is not part of. In context of social media usage such feelings emerge quite often when one gets to see what others are doing.

Narcissism

The concept of narcissism emerges from Greek mythology. It is based upon the story of a young man, Narcissus, when he saw his own reflection in the water for the very first time, he fell in love with it, which eventually led to his demise because of his vanity (Lubit, 2002; Wallace & Baumeister, 2002).

Jones (1913/1951) was pioneer to interpret narcissism, who named the narcissism as God complex. At that time different terms were used for god complex. it was stated that those who admire themselves and fanaticize of omnipotence (quality of having ultimate or very great power), omniscience (state of knowing everything) and are very over confident individuals having narcissism. Furthermore, it has been stated that these people love to be called as unique individuals and are in need of praise from others (Konarth, 2007).

Reich (1960) for character analysis used the term phallic-narcissitic. It was stated that individuals without having any extraordinary achievement in their life felt proud themselves and had the superiority complex, those individuals were considered to be the narcissitic individuals. In their relationships these individuals have sadistic approach and they find it difficult to develop intimacy in the relationships. According to Reich, narcissitic individual becomes aggressive, if their ego is challenged and this disorder is more common in men as compared to women, since narcissitic male individuals get out of control if their self-importance is challenged.

Reich (1960) labeled narcissists as people who have overstated the cost of object love and whose libido is largely focused on themselves. It is stated that early childhood traumas are the cause of narcissism and due to child retreat inward to a harmless self-protective imaginary world, ego defense mechanisms are not developed. Reich also stated that narcissist are unable to normalize their self-esteem. Narcissitic individuals

involve in small activities in start that lead them to feel themselves important. They state seeing themselves as a perfect individual or total failure and they make an inflated view of themselves. To build their own ego narcissistic individuals use others as a tool therefore their opinions about other people also change instantly (as cited in Konarth, 2007). A study suggested that Narcissism is a separation between a conscious feeling of superiority and an unconscious sense of insufficiency (Kernberg, 1975).

The essential features of a personality disorder are impairments in personality (self and interpersonal) functioning and the presence of pathological personality traits. According to the fifth edition of the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM-5) following criteria must be met to diagnose Narcissistic Personality Disorder.

- Impairments in self-functioning i.e., identity or self-direction,
- Impairments in interpersonal functioning i.e., Empathy and Intimacy.
- Pathological personality traits in the following domain: 1. Antagonism, characterized by: a. Grandiosity: Feelings of entitlement, either overt or covert self-centeredness; firmly holding to the belief that one is better than others; condescending toward others. b. Attention seeking: Excessive attempts to attract and be the focus of the attention of others; admiration seeking.
- The impairments in personality functioning and the individual's personality trait expression are relatively stable across time and consistent across situations.
- The impairments in personality functioning and the individual's personality trait expression are not better understood as normative for the individual's developmental stage or socio-cultural environment.
- The impairments in personality functioning and the individual's personality trait expression are not solely due to the direct physiological effects of a substance e.g., a drug of abuse, medication or a general medical condition e.g., severe head trauma (American Psychiatric Association, 2000).

Looking for a useful measure of narcissism a factor analysis identified seven factors: Superiority, Vanity, Exhibitionism, Exploitativeness, Entitlement, and

Authority, Self-Sufficiency (Pincus & Lulowitsky, 2010). Desirable mental health variables are associated with 'adaptive' narcissistic factors including Authority and Self-Sufficiency factors, whereas less desirable mental health variables are associated with 'maladaptive' factors including Exploitativeness and Entitlement factors (Emmons, 1987). The maladaptive factors of measure of narcissism have been indicated to be associated with hostility and anger (Rhodewalt, Madrian, & Cheney, 1998).

With reference to relationships three common types of patterns have been observed. First, narcissists view other individuals as inadequate and inferior, and see themselves as superior beings. They tend to encourage dominance, submissiveness, or compliance in relationships. Second, for seeking or gaining security or wellbeing in a case of stressful or complicated event they do not move towards others. They become self-supporting and self-sufficient and seem tensed. In unpleasant situations they do not show appropriate emotions for instance, need for consolation or direction. Third, when someone praises a narcissist individual, a sense of cohesiveness develops between both the persons i.e., the narcissistic individual and the admirer. In relationships narcissists need recognition and mutual idealization to ensure that self-enhancement is expected in the relationship and is essential for boosting one's self-concept (Dimaggio, Fiore, Salvatore, & Carcione, 2007). Each of these theoretical explanations make an important contribution to the understanding of narcissistic personality.

Characteristics of Narcissist Personality

There are some characteristics of individuals having narcissistic personality. Narcissism is an identity attribute (Campbell, Finkel & Foster, 2002). It is described as a practice identifying with expending their significance and energy particularly in savage and forceful way, absence of stress for social closeness (Baumeister & Bushman, 2001; Campbell & Foster, 2002; Morf & Rhodewalt, 2001). The narcissists present themselves as pomposity, predominance, and self-righteousness. Consideration and thankfulness of others must keep such misrepresented self-perspectives of narcissists where narcissistic self-regard gets reinforced. However, their interpersonal connections are not emphatically impacted because they want to be appreciated instead of simply being like or acknowledged (Golumb, 1992).

Furthermore, Carlson, Vazire, and Oltmanns (2011) found about the narcissistic personality that the individuals who score high on narcissism tend to rate themselves as

smarter, physically appealing, clever, and amiable than others. Interestingly, for having more elevated amounts of negative parts they likewise appraised themselves for example being forceful, inclined, situated, indiscreet, and pompous. There is also a tendency to misrepresent their capacities. Accordingly, sometimes narcissists know that they have narcissistic tendencies. The specialists additionally recommended that it is conceivable that confounding the importance of narcissism, narcissists keep up their mental self-image. At a point when told that they are arrogant as opposed to supposing that they are 'somebody who is sure without legitimacy' contemplating internally, they may take it as a compliment. Individual having any of these characteristics may tend to develop narcissism. In the light of the literature, types/forms of the narcissism are described below.

Types of Narcissism

It can be seen from the earlier description that there are different characteristics of narcissistic personality. However, there are different types of Narcissism as well. Evidence for support of these types of narcissism, can be found in the previous studies. Many studies (Dickinson & Pincus, 2003; Miller & Campbell, 2008; Vaknin, 2003) have explained that there are two types of narcissism. i.e., Grandiose narcissism and Vulnerable narcissism. In both these two types of narcissism, self-absorption, and sensitivity to slights constitute dominant characteristics (Luchner, Houston, Walker & Houston, 2011; Vaknin, 2003). These two distinct forms of narcissism are well documented (Miller et al., 2011) and have been elaborated below.

Grandiose narcissism. Grandiose narcissism is also called overt narcissism. It involves a sense of self-importance, uniqueness, grandiosity, dominance, and individuals with a pronounced grandiose narcissism perceive themselves as remarkably gifted and successful. Also, such individuals engage in active self-presentation i.e., their accomplishments are brag about by them (Paulhus, 1998). These individuals need others in order to demonstrate their qualities, of being superior and high achievements (Wallace & Baumeister, 2002). Since the early days, concerns have been raised that in promoting narcissistic tendencies social media forums like Facebook are playing a vital role by encouraging users to present themselves in most positive ways and engaging in it much frequently (Buffardi & Campbell, 2008). Externalizing behavior such as self-

importance, grandiosity, egotism excessive, aggressiveness, and high self-esteem, explain overt narcissism of individual (Ronningstam, 2005).

Vulnerable narcissism. Vulnerable narcissism is also called covert narcissism. Narcissistic individuals when praised by other individuals get a boost for their self-esteem (Dickinson & Pincus, 2003). Internalizing behaviors such as over sensitivity, low self-esteem, and vulnerability are part of vulnerable narcissism (Luchner et.al, 2011). Vulnerable narcissists are much more emotionally sensitive. In relationships, they find themselves between the feelings of inferiority and superiority. Vulnerable narcissists often worry about how their partners perceive them. They do not accept their mistakes. They blame others and fail to accept it if narcissistic person make a mistake and they do it on a regular basis.

Less understanding of ones' own self-definition for example self-system has been explained as one of the cause of narcissism. This suggests that into the negative aspects of their reputation or personality narcissist individual have less awareness or understanding i.e., how people see themselves as entitled, disagreeable, or arrogant. A study showed that narcissists see themselves in positive way and they try to keep up their positive self-view (Morf & Rhodewalt, 2001). This has led researchers to conclude that narcissists "...have less insight into their own condition" (Emmons, 1987, p. 297) and "...probably misunderstand how they are perceived" (Morf & Rhodewalt, as cited in Carlson, Vazire, & Oltmanns, 2011, p.116).

Narcissistic Awareness View

An equally significant aspect of the previously described information about the awareness of narcissistic individuals about themselves and others is Narcissistic Awareness view. According to this view, there is difference between the way people see the narcissists and the way narcissistic individuals see themselves. And narcissistic individuals know this difference. Evidence for this view comes from studies which show that narcissistic individuals are thoughtful and careful regarding negative feedback about themselves and they censure and criticize such feedback (Rose, 2007; Zeigler-Hill, Myers, & Clark, 2010). That is, others do not always view them positively and narcissistic individuals seem aware of this tendency. Recent empirical research suggested that narcissists can acknowledge the manner in which other people see their performance that is not same as narcissistic individuals see themselves (Robins & Beer,

as cited in Carlson, Vazire, & Oltmanns, 2011). Furthermore, according to another point of view it has also been indicated that Narcissistic individuals have very positive self-views about themselves (Paulhus, 1998; Vazire & Funder, 2006).

With reference to the awareness of narcissistic individuals about themselves, Morf and Rhodewalt's (2001) Dynamic Self-regulatory Processing Model explains that the positive self-view narcissistic individuals have about themselves, enables them to keep their positive self-view. For example, they might use self-presentational strategies to gain positive feedback, or they may perceive feedback in positive manner. If positive self-insights of narcissistic individuals are strengthened by their meta-views, then narcissists should assume that they are viewed just as positively by others as they see themselves (Carlson, Vazire, & Oltmanns, 2011).

Theories of Narcissism

Following are the theories that explain the concept of narcissism.

Psychoanalytic view of narcissism. Freud gave narcissism a place in the regular course of human sexual development as part of his libido theory. Assuming that the individual has a fixed quantity of libido at his disposal, his central tenet was that libidinal cathexis of the subject, which is object love and libidinal cathexis of the self, is narcissism. Freud's suggested two stages of narcissism, i.e., Primary narcissism and secondary narcissism. These two stages are explained below.

Primary narcissism. In primary narcissism, all libido was invested in the self-representation. As ego boundaries were constructed, libidinal cathexis of the object arose, some libido staying attached to the self as residual primary narcissism.

Secondary narcissism. In secondary narcissism, occurring after libidinal constancy was reached, libido was withdrawn and reinvested in self, augmenting residual narcissism. Secondary narcissism occurred in the pathological conditions, the 'narcissistic neuroses', in which there was a withdrawal of love from the object on to the self. Freud here was referring to patients who would today probably be labeled as borderline psychotic or schizophrenic.

Furthermore, Freud (1914) put forward two main paths towards the choice of an object: the narcissistic path, whereby one loved according to the image of oneself, what one was, what one would like to be or someone who once was part of oneself; or

the anaclitic (attachm'ent) path, whereby one loved the woman who had fed one or the man who had protected one. Freud therefore saw narcissism as an immature self-centered trait, indulged in only at the expense of object love. Relinquishing one's narcissism was seen as an important maturational step (Russell, 1985).

Kohut's Theory of Narcissism. According to this theory narcissism is defined by its nature not by the 'target' of libido (i.e., self vs. object). In the context of healthy narcissism Kohut (as cited in Russell, 1985) proposed that maternal empathy is essential for healthy narcissism and cause of pathological narcissism was designated to the massive shortcomings in the mothering. Furthermore, two forms of pathological narcissism have also been described i.e., grandiose self, and omnipotent object (the idealized parent image). Grandiose self involves normal primitive self and omnipotent object involves admiration of self-object as ascribed by the perfection. Narcissistic personality disorder can occur during any time of late oral stage to latency stage. Aggression is seen primarily in reactive term and secondary to narcissism.

Kernberg Theory of Narcissism. Narcissism is defined by the Kernberg (as cited in Russell, 1985) as 'the libidinal investment of the self'. There is interdependent relationship between object love and self-love. Two types of narcissism were proposed by Kernberg i.e., pathological narcissism and healthy narcissism. Pathological narcissism includes bad object relations because of bad inner object relations and its exists and develop at the expense of object love whereas healthy narcissism includes an increased investment in the object world, an abundant object love because of good inner object relations. The late oral stage of development is the cause of Narcissitic Personality Disorder. In instinctual terms aggression is seen fundamental to Kornberg's formulations.

Horney's Theory of Narcissism. Narcissism was explained by Horney (1981) as a sense of safety and gratification is given by narcissism which serves as the defense mechanism or guard instrument. Horney proposed that, society, culture and environment has influence on the personality. According to Horney, security, affection and protection is the need of individual so that he can be fed and nourished emotionally, and anxiety is the result of youngster's dependency on elders for his survival because of which he uses defense mechanism (as cited in Adil, 2003).

Attribution Theory. With reference to Attribution Theory of narcissism a research study found that for positive events narcissists made significantly more stable and internal attributions (Hartouni, 1992). One of the most strong and extensive findings in Attribution Theory is that narcissistic individuals have the ability to take credit of the positive event and refuse unsuccessful situation. This phenomenon is called attributional egotism, self-serving bias and benefactions (Geen, 2001). It is believed that this process is the cause of strengthened and protected of self-esteem. One might expect such narcissistic individuals have egotistical attributions in common, which can make their self-esteem vulnerable and that they may be motivated to enhance their self-esteem. Self-presentational concerns might be reflected by the causal attribution of narcissistic individuals such as they want to get endorsement from others or to seem unobtrusive (Holtzman & Stube, 2010).

Fear of Missing Out (FOMO)

The Fear of Missing Out (FOMO) is defined by Thompson (2016) as it is referred to as anxious feeling or can be all consuming feeling that someone might miss something what his/her friends are doing, in the know about, or in possession of more or something better than oneself. Essentially, the fact that people care deeply about what others do (Abel, Buff & Burr, 2016). Germaine-Bewley (2016) also defined FoMO as an individual's anxiety, worry, and uneasy feelings that the persons believe that their friends are having rewarding and good experiences and they are enjoying more than them. After looking at the activities of others on social media FOMO gets increased. People who feel fear of missing out have a continuous desire to see the activities of others, to have knowledge about what other people are doing in their lives.

It can be seen from the literature that fear of missing out includes a desire of having something what others have, such as a recently released piece of innovation like an iPhone, that someone else might have (Przybylski, Murayama, DeHaan, & Gladwell, 2013). For example, following situations can be the cause of feeling of fear of missing out: when a person see one's friends hanging out side and one could not go with them. When a person use social media to keep an eye on the activities of one's peers or when a person believes that other people are having more rewarding experiences than him/her. This overall emotion can effect the individuals feelings. A research study indicated that Fear of missing out is found high among college students because they

can easily influenced by their peers (Zunic, 2017). Another research study suggested that social networking sites such as Facebook, Instagram, Twitter, and Snapchat are laying the important role in the development of FOMO behavior (Hetz, Dawson, & Cullen, 2015).

Moreover, in the light of the literature a study on Intelligent Communications showed Feelings of Missing Out nearly is experienced by 70% of adults (Thompson, 2012). Vaughn (2012) proposed that any communication channel can serve to give rise to FOMO behavior. Throughout history any channel that allow individuals to get information of their friends, family, or even strangers' lives were able to generate these feelings. Such communication channel includes letters, pictures, newspaper, emails and annual holiday newsletters. People have more access to social media now due to the innovation and advancement in technology which made them able to get information and knowledge about their friends, family, peers and celebrities etc. more easily than before. Moreover, now people have become more addictive to the use of technology than ever. Now a days people are more aware about upcoming events or parties and instead of getting delayed news from the newspaper they get the news or knowledge about event or parties instantly. Smartphone, tablet, laptop, etc. are the sources of instantaneous information. As people get the information about the activities and life of others whenever they want, they also compare their lives with other people which serves as the main cause of dissatisfaction with life (Vaughn, 2012).

It is however important to note that past studies have shown that feelings of inadequacy, anxiety, and irritability are the components of FOMO. These studies have shown that involvement in the social media makes FoMO related feeling stronger (Thompson 2016; Vaughn, 2012). It is also proposed that experience of FOMO may be influenced by self-esteem (Abel, Buff, & Burr, 2016).

Evidence for support of this irritability can be found in previous research studies that when a person is engaged in social media networking sites and feels fearful, anxious, and worried their impatience and anxiety may increase for the time being. Anxiety research has identified two types of anxiety. These two types are trait anxiety and state anxiety. Trait anxiety is there for long period of time which includes individual's overall temperament to feel anxiousness whereas state anxiety is short term anxiety like seconds, minutes, and hours (Wilt, Oehlberg, & Revelle, 2011). Fear of

missing out is stimulated by the posts that are seen on social networking sites (dossey,2014). It is suggested that FOMO is loosely connected to state anxiety. Because after seeing the activities of other people on social media, individual becomes temporarily anxious. Each of these theoretical positions makes an important contribution to the understanding of FOMO.

Regale (2015) identified that when one misses an event he/she may feel jealousy related worry which is associated with fear of missing out and fear of being left out. Hato (as cited in Wikiversity, 2016) remarked undesirable sentiments might be shown by the people who feel fear of missing out when missing contact with others while comprehending what they are doing. Fear of missing out is a type nervousness or social anxiety which is defined as when a person misses a chance for social gathering or misses any good experience, then he/she feels anxiety or nervousness. A study showed that 13% of the population is detected with a condition called social anxiety (Thompson, 2016). Lack of self-confidence, social aversion, and self-assurance are being induced by anxiety disorder in this way FOMO is harmful for the person who is facing it.). Tension and dread can be produced by the sensation of fear of missing out. Thoughts drive this (Thompson, 2016).

With reference to social media and FOMO, supportive evidence can be found in the literature that the circumstances in which one experiences FOMO have become associated with social media usage. Social media serves as a platform for individuals to gain secondhand experiences of what they were not part of in person. Through social media forums such as Snap Chat, Facebook, and Instagram, the experiences where individuals are shown quick glances to what they are missing allows them to imagine the contextual situations surrounding the image. There is a lack of context in social media but there is also a great exposure to the highlights of an individual's life. The other side of the experience of exposure to social media makes for the individuals to strive to appear through social media posts as though they are not missing out. The need to disassociate with the emotional state of FoMO derives from the socially perceived negativity associated with emotionality. There exists the fear of missing out as well as the fear of being perceived as missing out. Individuals strive to create a mediated version of the ideal self that expresses socially desirable traits, often prompting a cycle of FoMO for other individuals as well (McDermott, 2017).

FOMO is typically referred in a negative light, especially in relation to social media and smart phone usage. In the popular press and modern culture the FOMO is a well-established phenomenon (Hodkinson, 2016)

It is seen that Fear of missing out is a modern social expression used with reference to an individual's emotional experience generally associated with social media. According to this framework, there is greater propensity among youngsters to show fear of missing out as 24% of adolescents are always engaged in social media. The kind of feelings like fear of missing out is more prevalent among youth because their peers may achieve something they need and they may think this achievement is getting diminished from them. Individuals who suffer from fear of missing out consider that their peers are evaluating, observing, and hailing everything and they have enjoyed more than them. So, they try to meet the expectation of their group and adjust themselves to fulfil the expectations of their group, also they try to compare their lives with peer and celebrities. After looking at the posts of friends and celebrities they compare their lifestyle with them. So, they may get disappointed with their lives. The intervention in person's own world is created by the continuous feeling of missing out. A recent study showed that students consume eight to ten hours per day by using social networking forums and still feel worry and anxious because they believe that that they are missing major activity (Thompson, 2016).

Theories on Fear of Missing Out

Following are different theories explaining the notion of Fear of Missing Out (FOMO).

Self-Determination Theory. Human drives and temperaments are included in the Self-Determination Model (Deci & Ryan, 2002). It inspects the inspirations behind the selections that individual make despite of any outward impact and intervention. Therefore, internally determined and driven behavior is searched by the self-determination (Deci & Rayan, 2002).

Furthermore, three basic mental needs are indicated by this Self-Determination Theory (Deci & Rayan, 2002). These are relatedness, competence, and autonomy are included in it. Encouragement of prosperity and wellbeing in people should be provided by those needs.. According to Deci and Vensteenkiste (as cited in Wikiversity, 2016) there are three basic components of theory, firstly people grasp their internal strengths

by being intrinsically active (i.e., motivations and sentiments). Secondly people ensure mental inclination on the way to evolution, progress, and cohesive functioning and lastly ideal functioning/optimum improvement and actions are innate in people but do not occur spontaneously.

Empirically grounded thought, valuable view of outlining and a macro view of human enthusiasm of fear of missing out is provided by Self-Determination Theory (Deci & Ryan, 1985 as cited in Przybylski et al., 2013). Drawing on the Self-Determination Theory, a study indicated the mediating role of fear of missing out between the relationship of psychological needs and social media engagement. Their study showed that several personality factors e.g. narcissism and social media engagement can be explained by FOMO Deci & Ryan, 2008; Przybylski et al., 2013).

Social Cognitive Theory. It is presented by the Bandura (as cited in Wikiversity, 2016). The core concepts of this theory can be explained by schematization of triadic reciprocal causation. This schemas displays means via which imitation of witnessed activities impact cooperation of the associated three determinants: firstly personal, which focus on whether the person has high or little self-confidence toward the behavior. Secondly behavior, which emphasizes on the reaction person obtains ones the actions is executed for the instance number of likes on their Facebook status or on Instagram photos they receive. Lastly, environment that underlies features of the situations or background that impact the person capacity to magnificently perform a behavior for example having access to one's smart phone and the internet all the times (Bandura as cited in Wikiversity, 2016). Likewise, causes of the fear of missing out are described below.

Antecedents of Fear of Missing Out

Some theoretical explanations make an important contribution in understanding the causes of fear of missing out such as studies by Rifkin, Cindy, and Kahn (2015) which explain that seeing social media images of a missed social group occasion produces fear of missing out, which is the cause of reduction in pleasure of current event and increases the likelihood of enjoyment of the missed event. According to this framework, Fear of missing out can occur even when the event was considered more entertaining and experienced by a friend, and it was worsened by social belonging ambiguity. A research study indicated people who use social media experience more

fear of missing out, participant's Facebook consumption in academic settings was seen in this study and it was indicated that fear of missing out outcomes were linked to greater Facebook practice and were further expected to use Facebook during academic activities (Bewley, 2016). Social media engagement is positively related to Fear of missing out. Researches proposed that people who feel fear of missing out will have low Emotional stability and also there exists a negative association between them. Therefore, it is also suggested that the more one is involved in social media, less emotionally stability one is (Germaine-Bewley, 2016).

Aggression

Aggression is said to be any behavior in the individual with some intentions to cause harm to the other individual. These intentions can be immediate. In addition, the perpetrator must believe that the target will be harmed by the behavior and that the target is motivated to avoid the behavior (Baron & Richardson, 1994; Berkowitz, 1993; Anderson & Bushman, 2002; Geen, 2001).

Furthermore, according to Howells and Hollin (1989), aggression does not involve physical injury it is about getting benefit over people or the purpose is to harm them (Lambe, Hamilton-Giachritsis, Garner, & Walker, 2016). As indicated by Scott (as cited in Geen, 2001) that fighting is included in aggression if there is initiation of attack. According to Eibesfeldt (as cited in Buss & Durkee, 1957) when command of one person over the other is led by the conduct pattern it is characterized as aggression. Bandura et al. (as cited in Geen 2001) in general seems to agree with the definition of Aggression given by Buss and Perry (1992) that aggression is "poisonous stimuli that is conveyed by a reaction to another creature" (p.1).

In the light of literature, aggression has been characterized by as "a behavior that is aimed at hurting or harming other individual" (Dodge; 1991, p.180). Crick et al., (1999) proposed that "a conduct which is planned to verbally assault or physically harm someone else is included in the aggression" (p.110). It additionally depicts aggression as "an overt behavior involving intent to conflict noxious stimulation or to behave destructively toward another organism" (p.18). Aggression was also described as "physical or verbal conduct proposed to hurt somebody (Godlaski & Giancola, 2009; p. 400). Like focused on Aggression and its description as a sort of conduct that

incorporates an unfriendly goal and its constantly purposiveness was focused by Feshbach et al. (as cited in Crick et al., 1999).

Moreover, a study showed that more hostile attitude can be caused by higher level of irritability in any individual, one might act impulsively or rudely at the slightest frustration or at the smallest disagreement (Caprara et al., 1985). Furthermore, it is suggested that aggression is a mean to an end. It is used to attain justice by punishing those whom they feel have punished them, unjustly. According to this framework, Gilligan also argued that a personally meaningful insult results in an overwhelming sense of shame. The aggressive person is unable to cope with this shame due to a lack of self-esteem or a healthy sense of pride. Therefore, high self-esteem or pride is seen as a defense against humiliation or shame, without which aggression becomes a way of restoring one's sense of esteem or pride (Lambe, Hamilton-Giachritsis, Garner, & Walker, 2016).

Each of these theoretical explanations make an important contribution to the understanding of aggression, like Walker and Bright (2009) viewed aggression as an attempt to protect against further injury (humiliation) and the perceived lowering of self-worth and pride. It proposed that due to early experiences, individuals develop core beliefs about being vulnerable and weak. To defend against and hide these beliefs from others, conditional assumptions develop which manifest as a veneer of confidence and arrogance (as cited in Lambe, Hamilton-Giachritsis, Garner, & Walker, 2016).

Types of Aggression

There are following types of aggression. In fact, Buss (1971) introduced a typology of human aggressive behaviors and broke them into several categories, such as active and passive, direct and indirect, and physical and verbal. It is stated that 'punching' a victim is an active, direct, and physical act of aggression whereas spreading 'malicious gossip' about a victim is an active, indirect, and verbal act of aggression (Buss & Perry, 1992). Types of aggression are explained below.

Direct aggression. Direct aggression involves face-to-face confrontation between the aggressor and the target. It is defined as any behavior aimed at the goal of harming another living being (Buss & Perry, 1992).

Indirect aggression. Indirect aggression is defined as any behavior aimed at the goal of harming another living being that is delivered circuitously through another person or object, even if it must nevertheless be intended to harm someone (Buss & Perry, 1992).

Physical aggression. Physical aggression includes direct aggression. It is defined as a behavior which includes physical force as a mean of hurting others, which includes punching, kicking, hitting, and squeezing (Crick & Grotpeter, 1995). According to Schanz (2017), there are two types of physical aggression i.e., physical active aggression and physical passive aggression.

Physical active aggression. Physical active aggression (PAA) can be defined as an individual's "harmful behavior that is intended to cause either minor or severe physical injury or harm another person to cause physical pain and suffering."(p.989) According to Schanz (2014) PAA can be measured by the frequency and intensity of physically violent acts that causes physical injury or harm to another person. The best examples of PAA may include simple assault or aggravated assault, rape, or murder.

Physical passive aggression. It is an individual's harmful behavior that is intended to cause either minor or severe physical injury or harm to him/herself so as to cause physical pain and suffering. Physical passive aggression (PPA) can be assessed by items that measure the frequency or intensity of self-destructive behaviors such as substance abuse, self-mutilation, or anorexia.

Verbal aggression. Verbal aggression is defined as the act of using aggressive language on a target. It can be distinguished from verbal aggressiveness which is a person's attitude toward using aggressive language (Levine, Beatty, & Limon, 2004).

Some of other types of aggression are explained below.

Relational aggression. Behavior which includes harm or damage of peer relationships and planned practices to hurt others through deliberate control is known as relationally aggressive behavior (Crick et al. 1999). Crick utilized the expression of relational aggression to characterize sort of forceful of aggressive acts.

Proactive aggression. Proactive aggression is defined as anticipation of some reward which is enacted by purposeful aggressive behavior. Proactive aggression

includes the achievement of object. It is known as harmful behavior and is additionally alluded to as 'instrumental aggression' (Dodge, 1991).

Theories of Aggression

Different theories explaining the concept of aggression have been elaborated below.

Cognitive Neoassociation Theory. Berkowitz (1989, 1990, 1993) has explained that unpleasant situations such as, uncomfortable temperatures, provocations, loud noises, frustrations, and unpleasant odors have negative effect to such an extent that they may build up aggressive tendencies. Many different thoughts, physiological responses, expressive motor reactions, and memories are unconsciously stimulated by such experiences, related to both fight and flight responses. The basic feelings of anger are aroused by fight association, whereas the basic feelings of fear are aroused by flight association. According to Cognitive Neoassociation Theory, memories about aggressive thoughts, behavioral tendencies, and emotions are linked together. Furthermore, Cognitive Neoassociation Theory shows that cues present during an unpleasant events become related with the situation and with the cognitive and emotional responses triggered by the event (Collins & Loftus 1975).

Excitation Transfer Theory. Physiological arousal can be explained by Excitation Transfer Theory (Zillmann 1983). If for a short period of time, two arousing situations are separated, second event might be wrongly attributed due to the arousal in first event. If the anger is associated with second situation, then the person will become angrier due to more of arousal in the second situation. The concept of Excitation Transfer Theory also proposed that if the anger is consciously attributed to the person's heightened arousal then anger may be extended over long periods of time. Thus the person remains ready to aggress for as long as the self-generated label of anger persists, even after the arousal has dissipated (Cummins, 2017).

Social Interaction Theory. Explaining about the causal influence, this theory explains Aggressive behaviors (or coercive actions) as social influence behavior (Tedeschi & Felson 1994), i.e., aggressive behavior can be used by an actor to make some change in the target's behavior. An aggressor uses aggressive behavior to obtain something of value for example money, goods information, safety, sex, services, to exact retributive (revenge) justice for perceived wrongs, or to bring about desired social

and self-identities (e.g., toughness, competence). According to this theory, the aggressor is a decision-maker where expected rewards are directed to the actors choice, costs, and probabilities of obtaining different outcomes.

Social Interaction Theory proposed that higher level (or ultimate) goals motivate the aggressive behavior. Even hostile aggression might have some logical goal behind it, such as punishing the provocateur to decrease the likelihood of future provocations. This theory clues the idea that threats to high self-esteem like, narcissism, are the causes of aggressive behavior (Baumeister et al. 1996, Bushman & Baumeister 1998).

Narcissism and Aggression

Each of the earlier explained theoretical explanation of narcissism and aggression makes an important and clear contribution to our understanding with reference to the relationship between them. Literature also provides support for this link. According to threatened Egotism Theory, the individuals who have high self-esteem, aggression occurs in them as compared to those individuals who have low self-esteem. But not all the individuals show aggressive behavior who have high self-esteem. It is applicable to individuals with fragile and unstable self-esteem, such as people with narcissism (Bushman et al., 2009; Bushman and Baumeister, 1998).

A study (Barry et al., 2007) exploring the relationship between narcissism and delinquency in a sample of at risk adolescents found that maladaptive narcissism has positive relationship with overt aggression, delinquency, and relational aggression. Another study examining the associations of narcissistic features with aggression and internalizing symptoms in adolescents indicated the prediction of self-reported proactive aggression as having a positive relationship with narcissistic exploitativeness while prediction of internalizing symptoms are positively related with narcissistic exhibitionism (Washburn et al., 2004).

Furthermore, Researches among adults in the laboratory settings found the relationship between narcissism and aggression (Barry, Chaplin, & Grafeman, 2006; Reidy et al., 2008). Bushman et al. (2009) examined the relationship of both self-esteem and narcissism with violence. It was found that high self-esteem alone has no independent effects but in the presence of an insult, high narcissism and high self-esteem indicated relationship with aggression. In understanding the relationship

between self-esteem, violence, and aggression narcissism plays a central role. Researches also explained that narcissism is significantly predicted by displaced aggression following an ego threat (Martinez et al., 2008; Twenge & Campbell, 2003); one study found no such relationship (Bushman et al., 2009). It is difficult to determine the reason for this inconsistency. Each of these studies used the same measure of aggression (noise blast) and a similar experimental design. In terms of methodology, Bushman had a larger sample size and the highest quality rating of the studies, perhaps making the finding more reliable.

It was assumed by Freud (1932) that self-preoccupied people are aggressive towards others to explain the relationship between narcissism and aggression. Potential relationship between aggression and narcissism was found by clinical observations of psychoanalysts. They suggested that narcissistic self-absorption is the cause of vicious cycle of shame, hostility, and immediate aggression (as cited in Barry.et.al., 2007). Barry et al. (2007) also argue that although adaptive narcissism was related to delinquency, overt aggression, and relational aggression, the relationships were nonsignificant when controlling for maladaptive narcissism. According to Kohut, Rejection and shame is caused by the vulnerable senses of self (Narcissistic rage) that fuels aggression, bitterness, and cruelty (as cited in Twenge & Campbell, 2003). Moreover, narcissistic rage is inconsistent or misdirected that is why it is immature and dysfunctional. Feelings of rejection and patterns of rage are exhibited by the narcissistic individuals that opens childhood wounds or events that contradict with one's sense of uniqueness and rareness (Kernberg, 1975). Presence of disregard, rage, or rebelliousness with in inter-personal affairs are reacted by those individuals (APA as cited in Anwar, 2016).

In the light of literature, with reference to the relationship between narcissism and aggression it is suggested that hostility and intense aggression are leaded by personality (Öngen, 2010). Baumeister, Smart, and Boden (1996) concluded that basic cause of aggression is baseless favorable views of self that are grandiose and exaggerated. In addition, aggression is predicted by etiological factor like narcissism (Barry et al., 2007). In the same context, Card, Stucky, Sawalani & Little (2008) found that positive correlation between narcissism, aggression, and hostility. Carrol (1989) related narcissism to intense emotional liability and strong reactions. These include aggression and rage that might increase aggressive tendencies. Furthermore, Rhodewalt



and Morf (2001) found a significant correlation between narcissism and hostility. They suggested that when people fail to find appropriate feedback of their success they show excessive aggression toward others.

Demographic Variables and Study Variables

Current study focused on gender and age as important demographic variables that were studied in context of other study variables i.e., narcissism, and FOMO and aggression. Evidence for the support of gender can be found in studies that show gender differences in narcissism and aggressive behavior. A study (Imran, 2015) found that gender differences exist in narcissism and aggression with women having high tendencies of being narcissistic and aggressive as compared to men. Furthermore, a study suggested that, in general, boys are more aggressive than girls. Boys and girls are verbally about equally aggressive, while boys are more physically and girls more indirectly aggressive (Björkqvist, 2018). According the meta-analysis (Card et al. 2008), it has been indicated that indirect aggression is high among women. Since girls clearly show more indirect aggression than boys, it appears correct to suggest indirect aggression to be more typical for women. With reference to FOMO, one research study suggests that fear of missing out is found to be higher among men as compared to women (Vaughn, 2012).

With reference to age, it has been seen to play role in narcissistic tendencies, FOMO, and aggressive behavior. Such as a research study shows that narcissism increased significantly in adolescents as compared to young adults (Carlson & Gjerde 2009). Many researches which show that in adults there is relationship between high levels of narcissism and aggressive behavior. Survey studies have found associations between high scores on narcissism (Richman & Flaherty, 1990) and the experience and expression of anger, hostility (Morf & Rhodewalt 2001), and dominance (Emmons, 1987) among young adults. Morf and Rhodewalt (2001) found those young adults responded more angrily who scored higher on the narcissism and received failure feedback than did young adults with lower scores. In an experimental study, Bushman and Baumeister et al., (1996) found young adults with high scores on the narcissism reacted with significantly more displaced aggression to a negative evaluator win comparison to participants with low scores on the narcissism.

Narcissistic traits in adolescents are examined by few studies. Externalizing symptoms and other forms of fragile self-esteem examined by the research suggested that overestimation of self-perception and competencies are the cause of aggressiveness in children and adolescents (Salmivalli, Kaukiainen, Kaistaniemi & Laerspetz, 1999). Salmivalli et al. (1999) found high defensive egotism as measured by a need for attention, positive self-evaluation, and difficulty with criticism, was associated with bullying and support for bullying among adolescent boys. Salmivalli (2001) hypothesized proactive aggression was related with narcissistic features, but not reactive aggression. The association of narcissism with conduct problems in adolescents was examined and it was found that an interaction between self-esteem and narcissism. Specifically, greater conduct problems when combine with self-esteem were examined in the individuals who scored high on narcissism (Barry et al. 2007). Additionally, higher scores in narcissism and low self-esteem had significantly greater conduct problems in young adolescents while high self-esteem and high narcissism leads to fewer conduct problems in young adolescents. Researches show that Conduct problems are positively related with narcissism and there is negative relationship between self-esteem and narcissism in adults with reference to age social media engagement is high among younger individuals. And likelihood of Fear of Missing out is also higher among youngsters. On FOMO research study proposed that individual's educational level is not associated with Fear of missing out (Germaine-Bewley, 2016).

Researches in Pakistan

Within a Pakistani context, constructs of narcissism, FOMO, and aggression have been studied in different kinds of study samples. The relationship of narcissism, self-esteem and aggression were examined to study the mental health issues in young adults. Findings showed that narcissism was positively associated with self-esteem and aggression (Anwar, 2016). Similarly, another study with police officers examined to explore the level of narcissism, perfectionism, and aggression according to gender. It was shown that the female police officers show high narcissistic tendencies and are more aggressive whereas male police officers are more perfectionists (Rehman, 2016). Imran (2015) aimed to explore the relationship between narcissism and aggression among the men and women university students which showed that there is positive correlation between narcissism and its dimension with aggression and its dimensions.

With reference to Pakistani culture, Ahsan (2015) explored the resource control strategies, aggression, and prosocial behavior among young adults. This study suggested that pro-social control strategies were positively correlated to relational aggression and negatively related to physical aggression. Prosocial behavior was negatively correlated with physical aggression. Furthermore, Kiani (2017) explored psychological need satisfaction, fear of missing out, and social media engagement among young adults which showed that psychological need satisfaction has negative association with fear of missing out and social media engagement. Furthermore, it was also indicated that there is a positive relationship between fear of missing out and social media engagement.

Rationale of Study

There is significant increase in the researches on personality traits (Imran, 2015). Narcissism is a personality trait and as a personality trait it is different from the pathological narcissism. Narcissistic individuals want to be liked or they may involve in the attention seeking behavior. Aggression is referred to as the externalizing behavior which occurs due to the intentions to harm other individuals. Past researches show that there is significant positive relationship between narcissism and aggression (Anderson & Bushman, 2002; Dodge, 1991). Aggressive tendencies are found to be higher in narcissistic individuals. Narcissistic individuals show more aggression when they are being insulted. Narcissism is associated with anger, violent behavior, and self-esteem (Ronningstam, 2005).

Aggression has negative influence on education as well as on society. So, it has been affecting the students in many different levels. For example, students make group on different basis such as educational, regional, language differences etc. this can create the jealousy and sense of comparison between groups, so group dynamics also play role in generating aggression tendencies. Due to the advancement in technology, students are using social media more for educational purpose as well as for entertainment. Research is indicating that social networking sites are playing important role in boosting the narcissistic and aggressive tendencies among youth (Gnambs & Appel, 2018). This sense of comparison may be the cause of aggressive tendencies and jealousy. So, it is essential to measure aggression among social media users to control the leading aggressive tendencies and to improve the climate of social networking sites.

Moreover, it has been indicated that students use of social media eight to ten hours per day. Excessive use of social media causes many problems. Among such problems anxiety about the missed activity is common among social media users which is referred to as fear of missing out (Bewley, 2016) It has been found that narcissistic tendencies are higher among those individuals who feel fear of missing out (Błachnio & Przepiórka, 2018).

It is said that internet and social media addiction has become a common problem and has emerged as a psychological disorder in today's society. When thought of as a worldwide problem, social media addiction is nevertheless most commonly accepted term and most known in countries where computer access is general. The disorder has been associated with both neurological and psychological characteristics like depression, anxiety, and poor impulse control. It is said that we become so addicted to the usage of the Internet that we disregard the given terms of condition and thus ignore all security threat Shaw & Black (as cited in Kempa, 2015). Strong associations between narcissism and aggression are therefore being set out to be studied in context of social media usage where negative tendencies like FOMO is thought to affect this basic relationship. This is so since FOMO are negative feelings on viewing activities others are part of. In context of self-focused trait like narcissism aggressive tendencies are thought to be more pronounced. Doing so will yield potentially sound knowledge that will add to FOMO literature.

METHOD

Method

Research Design

Current research was aimed to study the moderating role of Fear of missing out between the relationship of Narcissism and aggression among social media users. Scales used in the present study were Narcissistic Personality Inventory (NPI-13; Miller, Hoffman, Reidy, Zeichner, & Campbell, 2013), Fear of Missing Out Scale (Przybylski et al. (2013), Aggression questionnaire (Buss & Perry, 1992). Present study was executed in to two parts. The first part comprised of tryout phase that was aimed to demonstrate cultural appropriateness of the Scale. The second part was devoted to fulfilling study proposed objectives of the study.

Objectives

Following are the research objectives for current study.

1. To study the relationship between narcissism, aggression, and fear of missing out among social media users.
2. To study the moderating role of fear of missing out for the relationship between narcissism and aggression among social media users.
3. To explore the differences on narcissism, aggression, and fear of missing out with reference to various demographic variables (gender, age, education, income, social media engagement, parent's education, area of living, and family system).

Hypotheses

Following are the research hypotheses for current study.

1. Narcissism will be positively related to the FOMO and aggression among social media users.
2. Fear of missing out will strengthen the relationship between narcissism and aggression.
3. Narcissism will be higher among female social media users than male social media users.

4. Male social media users will score higher on aggression as compared to female social media users.
5. Narcissism, aggression, and FOMO will be high among adolescent social media users than young adult social media users.

Operational Definitions

The variables of current study have been operationally defined as below.

Narcissism. Narcissism is defined as a pattern of traits and behaviors that represent an obsession with the self to the exclusion of all others, and the egotistic pursuit of gratification, dominance, and ambition (Vaknin, 2003).

For the present study narcissism was operationalized through scores obtained on Narcissistic Personality Inventory (NPI-13; Miller, Hoffman, Reidy, Zeichner, & Campbell, 2013). High score on the scale of NPI-13 indicates more of narcissism and low score indicates less narcissism.

Fear of Missing out. Anxiety or a kind of inescapable worry because of missing worthwhile event(s) in which others enjoyed (Przybylski et al., 2013).

For the present study fear of missing out was operationalized through scores obtained on Fear of Missing Out Scale (Przybylski et al., 2013). High score on the scale indicates more fear of missing out and low score indicates less fear of missing out.

Aggression. Any form of behavior directed toward the goal of harming or injuring another living being who is motivated to avoid such treatment (Crick & Grotpeter, 1995). According to Buss and Perry (1992) the personality trait of aggression consists of four sub traits, physical and verbal are motor components of behavior, which involves harming others.

Physical Aggression. It describes physical harm, it expressed by raising a tightened fist, breaking a pen's tip, throwing a book or hitting on a wall (Brown & Tedeschi as cited Ahsan, 2015).

Verbal Aggression. Verbal aggression is described as insults or warning of physical actions. The verbal aggressions include shouting, arguing, cursing and sarcasm (Brown and Tedeschi; as cited in as cited Ahsan, 2015).

Anger. Anger aggression is described as a feeling of being threatened or mistreated. Anger occurs in many forms such as losing a match, feeling of not being selected, feeling of jealous, guilt and embarrassment (Brown and Tedeschi; as cited in as cited Ahsan, 2015).

Hostility. Hostile aggression refers to actions that are motivated by anger and the main aim is to cause harm or injury to opponents (Brown and Tedeschi; as cited in as cited Ahsan, 2015).

For the present study Aggression was operationalized through scores obtained on Aggression Questionnaire (Buss & Perry, 1992). High scores on the scale indicates high level of aggression and low scores indicate low level of aggression.

Instruments

In the present study following instruments were used to measure study variables.

Narcissistic Personality Inventory NPI-13. In the present study Narcissistic Personality Inventory (NPI-13) was used that has been developed by Miller et al. (2013). It is a 13-item scale with three subscales namely, Authority (item no. 3, 6, 9, &12), Exhibitionism (item no. 2, 5, 8, 11, &13), and Exploitativeness (item no. 1, 4, 7, & 10). The scale has five-point Likert rating 1 for (not at all characteristics of me) to 5 for (very much characteristics of me). Total scores are taken by adding all the scores of items. Scores on the total scale have a possible range of 1 to 13. Item no 1, 3, 4, 6, 7, 10, 12, and 13 are scored in the reverse order. The reliability coefficient for this scale is .78, and for subscales the internal consistency coefficients are as follows: authority, $\alpha = .83$; exhibitionism, $\alpha = .73$; exploitativeness, $\alpha = .50$ as given by the author (Campbell, 2013).

Fear of Missing Out Scale. In the present study Fear of Missing Out Scale was used that was developed by Przybylski et al. (2013). It is a 10-item scale. The scale has five-point Likert rating 1 for (not at all true) to 5 for (extremely true). Total scores are taken by adding all the scores of items. Scores on the total scale have a possible range of 1 to 10. The reliability coefficient for this scale is .90 as given by the author (Przybylski et al., 2013).

Aggression Questionnaire. In the present study Aggression Questionnaire was used that was developed by Buss and Perry (1992). It is a 29-item scale with four subscales namely, physical aggression (item no 1, 2, 3, 4, 5, 6, 7, 8, & 9) verbal aggression (item no. 10, 11, 12, 13, & 14), anger (item no. 15, 16, 17, 18, 19, 20, & 21), and hostility (item no. 22, 23, 24, 25, 26, 27, 28, & 29).). The scale has five-point Likert rating 1 for (not at all characteristics of me) to 5 for (very much characteristics of me). Item no 9 and 16 are scored in the reverse order. Total scores are taken by adding all the scores of items. Scores on the total scale have a possible range of 1 to 29. The reliability coefficient for this scale is .89 and for subscales the internal consistency coefficients are as follows: Physical Aggression, $\alpha = .85$; Verbal Aggression, $\alpha = .72$; Anger, $\alpha = .83$ and Hostility, $\alpha = .77$ as given by the author (Buss & Perry, 1992).

Part I: Try Out Phase

This stage was a trial run that was done in preparation for the main study. It was conducted to check the appropriateness of the instruments whether they are comprehensible by the target group or not.

Objective. Try out phase was designed to determine the extent of comprehension of the items of Narcissistic Personality Inventory and Aggression Questionnaire.

Sample. Try out phase was carried out on the sample of 20 participants. Data was collected by convenience sampling technique. The sample age ranged between 18 to 25 years ($M = 10.5$ $SD = 5.9$). Sample was taken from Quaid-i-Azam University and NUML University. Then for expert opinion, experts of field were contacted. The team of experts comprised of three PhD scholars of National Institute of Psychology, Quaid-i-Azam University, Islamabad.

Procedure. The try-out phase of study comprised of different steps. Participants were contacted, and their consents were taken. The participants were given NPI-13 and Aggression questionnaire and were asked to highlight any difficult items in the scale which were not comprehensible to them. Thus, those items identified that were difficult to understand by the participants. NPI-13 items were 1, 2, 6, and 9 and Aggression Questionnaire items were 1, 3, 5, 9, 10, 12, 14 15, 17, 23, 24, and 28. For those highlighted items, expert opinion was required. The experts were individually approached at their educational institute. They rated each item separately on the cultural

appropriateness and comprehension of each item of NP-II-13 and Aggression Questionnaire. The words, phrases or sentences selected as difficult to understand were either rephrased or were provided with the easier synonyms in the parenthesis. Best alternatives were selected from the experts suggestions. Therefore, a linguistically and culturally suitable version of the scale was generated from this phase. Adapted versions of the scales were then used in the main study.

Part II (Main study)

Sample. The sample of the present study consisted of the university students. Total sample consisted of 270 students who were using social media. Sample consisted of 143 men and 127 women. The age ranged from 18-26 years ($M = 20.74$ and $SD = 2.02$). Sample was collected from Quaid-i-Azam University, NUML University, PMAS Arid Agriculture University, and International Islamic University Islamabad. Demographic information was acquired with reference to gender, age education, income, social media engagement, parent’s education, area of living, and family system. The detailed demographic profile is provided below.

Table 1

The Demographics Description of Sample Along with the Frequency and Percentage of Main Study (N = 270)

| Demographics | <i>f</i> | % |
|----------------------|----------|-------|
| Gender | | |
| Male | 143 | 53 |
| Female | 127 | 47 |
| Age | | |
| Adolescents (18-19) | 77 | 28.52 |
| Young adults (20-26) | 193 | 71.48 |
| Years of education | | |
| 13-14 years | 140 | 51.9 |
| 15-16 years | 103 | 38.1 |
| 17-18 years | 27 | 10 |
| Monthly income | | |
| Less than 40,000 | 48 | 17.78 |

| | | |
|----------------------------|-----|-------|
| 40,000-80,000 | 130 | 48.15 |
| 80,001-1 lac | 56 | 20.74 |
| Above 1 lac | 36 | 13.33 |
| Family System | | |
| Nuclear | 173 | 64.1 |
| Joint | 97 | 35.9 |
| Fathers Education | | |
| Under matric | 10 | 3.7 |
| Matric | 39 | 14.44 |
| Intermediate | 60 | 22.22 |
| Graduate | 58 | 21.48 |
| Post graduate | 103 | 38.15 |
| Mothers education | | |
| Under matric | 53 | 19.63 |
| Matric | 69 | 25.56 |
| Intermediate | 37 | 13.70 |
| Graduate | 57 | 21.11 |
| Post graduate | 54 | 20 |
| Area of living | | |
| Urban | 225 | 83.3 |
| Rural | 45 | 16.7 |
| Time spent on social media | | |
| 1-4 hours | 73 | 27.03 |
| 5-8 hours | 75 | 27.78 |
| 9-12 hours | 90 | 33.33 |
| 13-16 hours | 32 | 11.85 |

Table 1 displays the frequency and percentages of sample along with gender, age, years of education, monthly income of the family, family system, parental education, area of living and, time spent on social media.

Procedure

For the present study students of different universities were approached. First, permission from authority was taken. Students from BS, Masters, and M.Phil. were approached. Informed consents were distributed to those students who volunteered to participate. Participants were explained the purpose of study and their consent to participate was obtained. Participants were told that they have full right to withdraw from participating in the research. They were assured for confidentiality and anonymity. They were also provided with verbal instructions. Total 300 questionnaires were distributed out of which 270 were received and used for analysis. Gratitude were paid to authorities and participants for their cooperation after receiving the questionnaires. After the data was collected further statistical analysis were done to fulfill study objectives.

RESULTS

Results

The aim of the study was to assess the moderating role of fear of missing out in the relationship between narcissism and aggression among social media users. For this purpose, analysis of the data was done by using SPSS-21 by utilizing appropriate statistical procedures. Alpha reliability coefficient was used to determine the internal consistency of Narcissistic Personality Inventory (NPI-13) scale, Fear of Missing Out Scale, and Aggression Questionnaire Scale used in present study. To determine the relationship between variables of the study, *Pearson* Product Moment Correlation was used. Moderation analysis was done by using Process Macro (Hayees, 2011) to determine the moderating role of fear of missing out for the relationship between narcissism and aggression. To find the differences on study variables among social media users along different demographic variables such as gender, family system, area of living, and engagement in social networking sites, independent sample *t*-test was used.

Table 2

Alpha Reliability Coefficients and Descriptive Statistics for Study Variables (N = 270)

| Variables | No. of items | α | M | SD | Ranges | | Skew | Kurt |
|-----------|--------------|----------|-------|-------|-----------|--------|------|-------|
| | | | | | Potential | Actual | | |
| NAR | 13 | .73 | 42.90 | 7.16 | 13-65 | 20-59 | -.19 | -.48 |
| AUT | 3 | .54 | 10.69 | 2.17 | 3-20 | 4-15 | -.81 | 1.01 |
| EXBH | 5 | .76 | 16.99 | 4.34 | 5-25 | 5-24 | -.35 | -.78 |
| EXPL | 3 | .45 | 10.01 | 2.21 | 3-20 | 4-15 | -.29 | -.18 |
| FOMO | 10 | .88 | 34.74 | 8.54 | 10-50 | 12-47 | -.46 | -.36 |
| AGG | 29 | .93 | 92.21 | 20.8 | 29-145 | 42-136 | -.02 | -.88 |
| Ang | 7 | .82 | 22.32 | 6.41 | 7-35 | 9-34 | -.19 | -.80 |
| Phy | 9 | .81 | 27.83 | 6.97 | 9-45 | 11-41 | -.00 | -1.21 |
| Hos | 8 | .80 | 25.94 | 6.29 | 8-40 | 10-40 | -.27 | -.84 |
| Ver | 4 | .70 | 12.79 | 3.43 | 4-25 | 4-20 | -.31 | -.87 |
| SME | 5 | .86 | 24.62 | 10.89 | 0-40 | 2-35 | -.55 | -1.18 |

Note. NAR = Narcissism; AUT = Authority; EXBH = Exhibitionism; EXPL = Exploitativeness; FOMO = Fear of Missing Out; AGG = Aggression; Ang = Anger; Phy = Physical Aggression; Hos = Hostility; Ver = Verbal Aggression; SME = Social Media Engagement; Skew = Skewness; Kurt = Kurtosis.

Table 2 illustrates descriptive statistics, alpha-coefficients, mean, standard deviation, range, skewness, and kurtosis for all the scales and their subscales. The reliability analysis indicates that the alpha coefficient of the Narcissistic Personality Inventory NPI-13 is .73 and its subscales ranged between .76 to .45. For the present study, the reliability coefficient for authority was .30 and for exploitativeness the reliability coefficient was also .30. By deleting item no. 3 of authority and item no. 7 of exploitativeness, reliability was changed into .54 and .45 respectively. The reliability coefficient of FOMO scale is .88. The reliability coefficients for Aggression Questionnaire are .93 and for its subscales ranged between .70 to .82. The reliability coefficient for Social Media Engagement scale is .86. Also, it can be observed that all the scales and subscales have skewness and kurtosis within the range of -2 to +2.

Table 3

Correlation Matrix for Narcissism, Subscales of Narcissism FOMO, Aggression, Subscales of Aggression and Demographic Variables (N = 270)

| Scales | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----|
| 1 NAR | - | | | | | | | | | |
| 2 AUT | .754** | - | | | | | | | | |
| 3 EXHB | .861** | .566** | - | | | | | | | |
| 4 EXPL | .666** | .415** | .381** | - | | | | | | |
| 5 FOMO | .595** | .415** | .617** | .308** | - | | | | | |
| 6 AGG | .607** | .397** | .487** | .454** | .546** | - | | | | |
| 7 Ang | .497** | .381** | .372** | .359** | .496** | .914** | - | | | |
| 8 Phy | .604** | .344** | .522** | .396** | .516** | .899** | .746** | - | | |
| 9 Host | .580** | .351** | .465** | .478** | .561** | .895** | .750** | .722** | - | |
| 10 Ver | .376** | .265** | .253** | .342** | .231** | .813** | .736** | .662** | .649** | - |

Note. NAR = Narcissism; AUT = Authority; EXBH = Exhibitionism; EXPL = Exploitativeness; FOMO = Fear of Missing Out; AGG = Aggression; Ang = Anger; Phy = Physical Aggression; Hos = Hostility; Ver = Verbal Aggression.

* $p < .05$. ** $p < .01$

Table 3 displays the correlation matrix for Narcissism, its subscales, FOMO, Aggression, and its subscales. The subscales of Narcissistic Personality Inventory and Aggression Questionnaire have significant positive correlation with the respective total score showing construct validity of both scales. Results also show that Narcissism and its subscales are significant positively correlated ($p < .01$) with FOMO. It also shows that there is significant positive correlation between Narcissism and Aggression. Narcissism also has significant positive correlation with the subscales of Aggression Questionnaire.

Table 4

Inter-scale Correlation Between Narcissism and its Subscales, FOMO, Aggression and its Subscales, FOMO, Social Media Engagement with Demographic Variables (N = 270)

| Scales | Age | Edu | Medu | Fedu | Time | Income |
|--------|---------|---------|--------|--------|---------|--------|
| NAR | .015 | .054 | .234** | .218** | .281** | .406** |
| AUT | .005 | .028 | .145* | .193** | .225** | .377** |
| EXHB | .113 | .197** | .179** | .233** | .313** | .399** |
| EXPL | -.166** | -.209** | .123* | .045 | .107 | .139* |
| FOMO | -.074 | -.034 | .214** | .265** | .362** | .444** |
| AGG | .211** | .099 | .303** | .238** | .063 | .402** |
| Ang | .212** | .114 | .197** | .227** | -.024 | .370** |
| Phy | .181** | .107 | .311** | .227** | .154* | .365** |
| Hos | .097 | .006 | .315** | .223** | .143 | .393** |
| Ver | .303** | .114 | .195** | .120* | -.177** | .277** |

Note. NAR = Narcissism; AUT = Authority; EXBH = Exhibitionism; EXPL = Exploitativeness; FOMO = Fear of Missing Out; AGG = Aggression; Ang = Anger; Phy = Physical Aggression; Hos = Hostility; Ver = Verbal Aggression; Edu = Education; Medu = Mother's Education; Fedu = Father's Education; Income = Monthly Income; Time = Time Spent on Social Media.

* $p < .05$. ** $p < .01$

Table 4 shows the correlation result for demographics variable in relation to the scales and subscales of Narcissism, FOMO, Aggression and its subscales. Correlation statistics is computed as Spearman correlation for monthly income since the data for income came out to be skewed (skew = 2.78) and for rest of the demographic variables Pearson moment correlations were computed. Results show that age has significant negative correlation with one of the subscales of narcissism i.e., exploitativeness. In addition, it can be seen that age is positively correlated with aggression and its domains i.e., anger, physical aggression, and verbal aggression. With

reference to the education it is found that education is significantly positive correlated with one of the subscales of narcissism named exhibitionism. Education is also found to be negatively correlated with one of the subscales of Narcissism i.e., exploitativeness.

It is also depicts that parental education has significant positive correlation with the narcissism and its domains i.e., authority and exhibitionism. It can also be seen that there is significant positive correlation between parental education and fear of missing out. It is depicted that parental education has significant positive correlation with Aggression and all its subscales i.e., anger, physical aggression, hostility and verbal aggression. With reference to the exploitativeness, mother education has significant positive correlation whereas father education is found to be non-significant. Verbal Aggression is found to be negatively correlated with time spent on social media.

Result show that time spent on social media has significant positive correlation with Narcissism and its domains i.e., authority and exhibitionism. For exploitativeness, relationship was nonsignificant with time spent on social media. There is significant positive correlation between time spent on social media and FOMO. In addition, it can be seen that time has a significant positive correlation with physical aggression and it is also found that time has significant negative correlation with verbal aggression. It can also be seen that time spent on social media has nonsignificant correlation with aggression and its domains i.e., anger and hostility.

Table 4 also shows the spearman correlation result for monthly income of the family. Results show that monthly income has significant positive correlation with Narcissism and its respective subscales i.e., authority, exhibitionism and exploitativeness. There is significant positive correlation between monthly income of the family and FOMO. In addition, it can be seen that monthly income is positively correlated with Aggression and its domains i.e., anger, physical aggression, hostility and verbal aggression.

Table 5

Moderation Analyses Predicting Aggression from Narcissism and Fear of Missing Out Interaction (N = 270)

| Predictor | B | Aggression | |
|--------------|----------|------------|-------|
| | | LL | UL |
| Constant | 90.76** | 88.37 | 93.16 |
| NAR | 1.22** | .43 | 1.04 |
| FOMO | .74** | .90 | 1.52 |
| NAR x FOMO | .04* | .01 | .07 |
| R^2 | .44** | | |
| F | 115.42** | | |
| ΔR^2 | .02 | | |
| ΔF | 6.15** | | |

Note. NAR = Narcissism; FOMO = Fear of Missing Out.

* $p < .05$. ** $p < 0.1$.

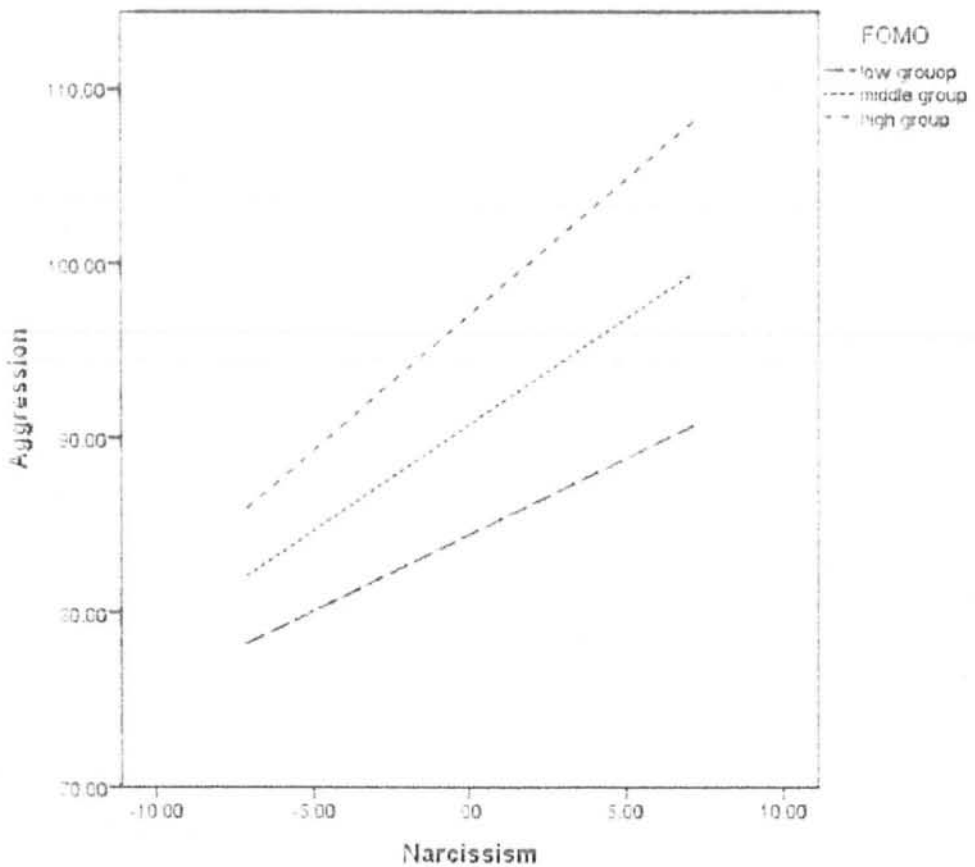


Figure 1. Moderating effect of Fear of Missing out between Narcissism and Aggression.

Table 5 and Figure 1 displays the moderating role of fear of missing out in the relationship between Narcissism and Aggression. The *B* value of interaction term is significant and explains 44 % of variance in Aggression. Figure 1 shows that for low FOMO group, relationship between aggression and Narcissism is less positive as compared to middle and high FOMO groups. For middle FOMO group, relationship between aggression and Narcissism is positive and for high FOMO group, relationship between aggression and Narcissism is highly positive.

Table 6

Moderation Analyses Predicting Anger from Authority and Fear of Missing Out Interaction (N = 270)

| Predictor | <i>B</i> | Anger | |
|-----------------------|----------|-----------|-----------|
| | | <i>LL</i> | <i>UL</i> |
| Constant | 21.84** | 21.13 | 22.56 |
| Authority | .58** | .28 | .88 |
| FOMO | .32** | .24 | .39 |
| Authority x FOMO | .06** | .03 | .10 |
| <i>R</i> ² | .32 | | |
| <i>F</i> | 52.66** | | |
| ΔR^2 | .03 | | |
| ΔF | 11.71** | | |

Note. FOMO = Fear of Missing Out

* $p < .05$. ** $p < 0.1$.

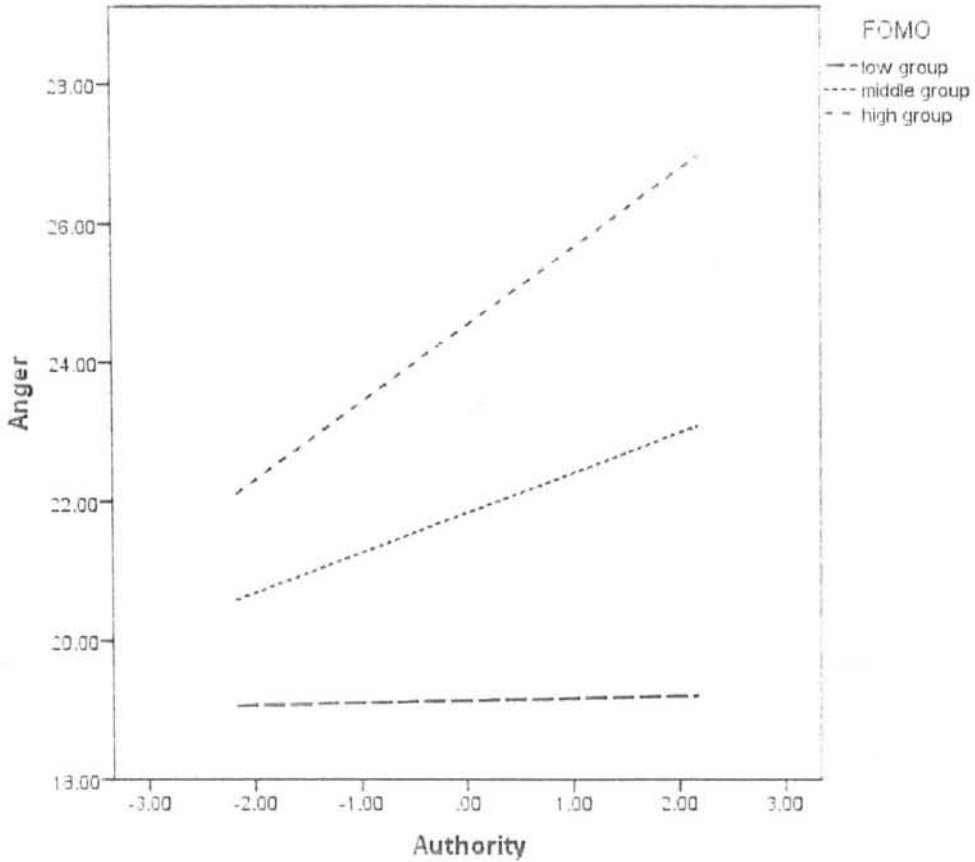


Figure 2. Moderating effect of Fear of Missing out between Authority and Anger.

Table 6 and Figure 2 show the moderating role of fear of missing out in the relationship between Authority and Anger. The B value of interaction term is also significant and explains 32 % of variance in Anger. Figure 2 shows that for low FOMO group, relationship between Authority and Anger is nonexistent. For middle FOMO group, relationship between Authority and Anger is slightly positive and for high FOMO group, relationship between Authority and Anger highly positive.

Table 7

Moderation Analyses Predicting Physical Aggression from Authority and Fear of Missing Out Interaction (N = 270)

| Predictor | B | Physical Aggression | |
|------------------|---------|---------------------|-------|
| | | 95% CI | |
| | | LL | UL |
| Constant | 27.39** | 26.54 | 28.23 |
| Authority | .46* | .03 | .88 |
| FOMO | .38** | .27 | .49 |
| Authority x FOMO | .06* | .01 | .10 |
| R ² | .31 | | |
| F | 36.38** | | |
| ΔR ² | .02 | | |
| ΔF | 5.34* | | |

Note. FOMO = Fear of Missing Out

* $p < .05$. ** $p < 0.1$.

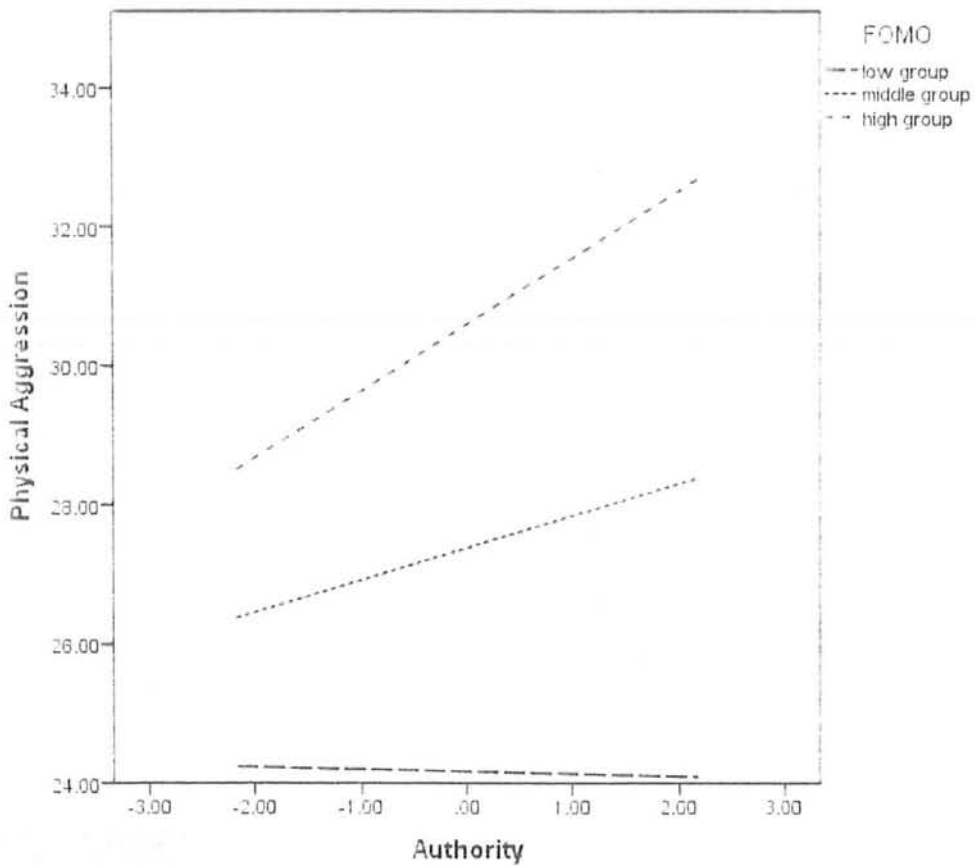


Figure 2. Moderating effect of Fear of Missing Out between Authority and Physical Aggression.

Table 7 and figure 3 show the moderating role of fear of missing out in the relationship between Authority and Physical aggression. The *B* value of interaction term is also significant and explains 31 % of variance in Physical Aggression. Figure 3 shows that for low FOMO group, relationship between Authority and Physical aggression is nonexistent. For middle FOMO group, relationship between Authority and Physical aggression is slightly positive and for high FOMO group, relationship between Authority and Physical aggression highly positive.

Table 8

Moderation Analyses Predicting Hostility from Authority and Fear of Missing Out Interaction (N = 270)

| Predictor | <i>B</i> | Hostility | |
|-----------------------|----------|-----------|-----------|
| | | 95% CI | |
| | | <i>LL</i> | <i>UL</i> |
| Constant | 25.68** | 24.99 | 26.37 |
| Authority | .39* | .05 | .73 |
| FOMO | .38** | .29 | .45 |
| Authority x FOMO | .03 | -.01 | .07 |
| <i>R</i> ² | .34 | | |
| <i>F</i> | 52.82** | | |
| ΔR^2 | .01 | | |
| ΔF | 2.63 | | |

Note. FOMO = Fear of Missing Out

* $p < .05$. ** $p < 0.1$.

Table 8 shows the moderating role of fear of missing out in the relationship between Authority and Hostility. The *B* value of interaction term is also nonsignificant which indicates that there is no moderation effect of FOMO between Authority and Hostility.

Table 9

Moderation Analyses Predicting Anger from Exhibitionism and Fear of Missing Out Interaction (N = 270)

| Predictor | <i>B</i> | Anger | |
|-----------------------|----------|-----------|-----------|
| | | 95% CI | |
| | | <i>LL</i> | <i>UL</i> |
| Constant | 21.53** | 22.71 | 22.35 |
| EXHB | .19 | -.01 | .39 |
| FOMO | .32** | .21 | .43 |
| EXHB x FOMO | .04** | .02 | .05 |
| <i>R</i> ² | .30 | | |
| <i>F</i> | 54.98** | | |
| ΔR^2 | .05 | | |
| ΔF | 17.19** | | |

Note. EXHB = Exhibitionism; FOMO = Fear of Missing Out.

* $p < .05$. ** $p < 0.1$.

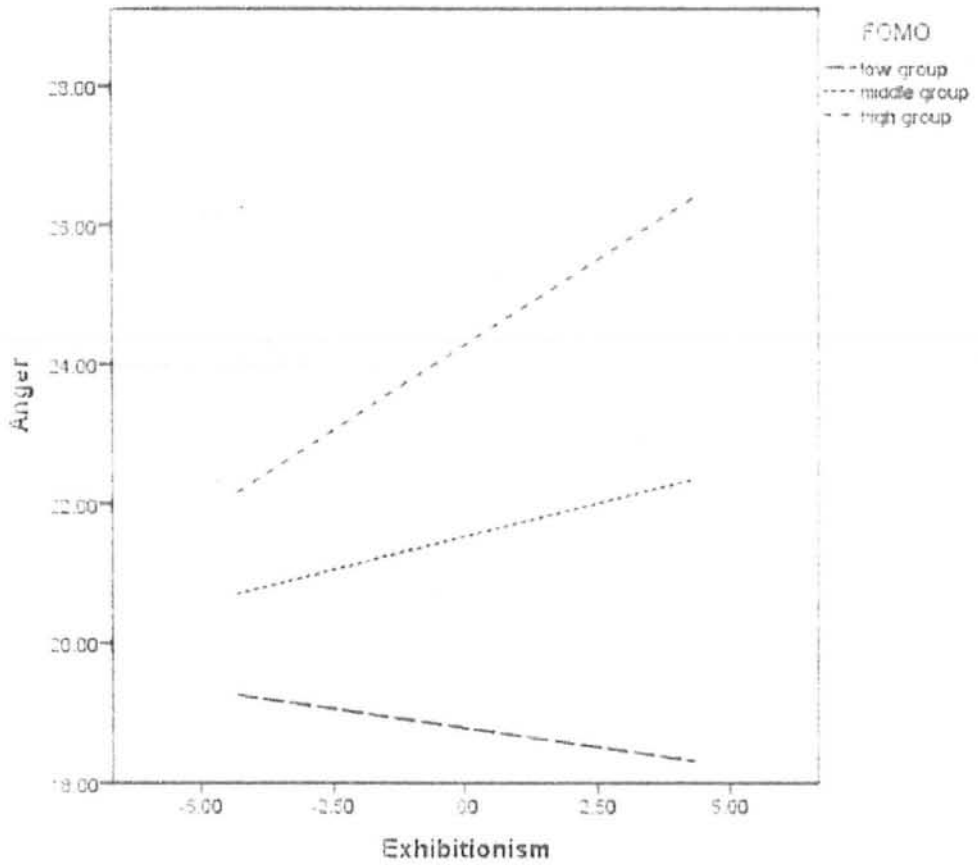


Figure 4. Moderating effect of Fear of Missing Out between Exhibitionism and Anger.

Table 9 and Figure 4 shows the moderating role of fear of missing out in the relationship between Exhibitionism and Anger. The *B* value of interaction term is significant and explains 30 % of variance in Anger. Figure shows that for low FOMO group, relationship between Exhibitionism and Anger is slightly negative. For middle FOMO group, relationship between Exhibitionism and Anger is slightly positive and for high FOMO group, relationship between Exhibitionism and Anger is highly positive.

Table 10

Moderation Analyses for Predicting Physical Aggression from Exhibitionism and Fear of Missing Out Interaction (N = 270)

| Predictor | <i>B</i> | Physical Aggression | |
|-----------------------|----------|---------------------|-----------|
| | | 95% CI | |
| | | <i>LL</i> | <i>UL</i> |
| Constant | 27.27** | 26.40 | 28.13 |
| EXHB | .55** | .34 | .77 |
| FOMO | .25** | .13 | .37 |
| EXHB x FOMO | .02** | .01 | .04 |
| <i>R</i> ² | .35 | | |
| <i>F</i> | 69.07** | | |
| ΔR^2 | .02 | | |
| ΔF | 9.16** | | |

Note. EXHB = Exhibitionism; FOMO = Fear of Missing Out

* $p < .05$, ** $p < 0.1$.

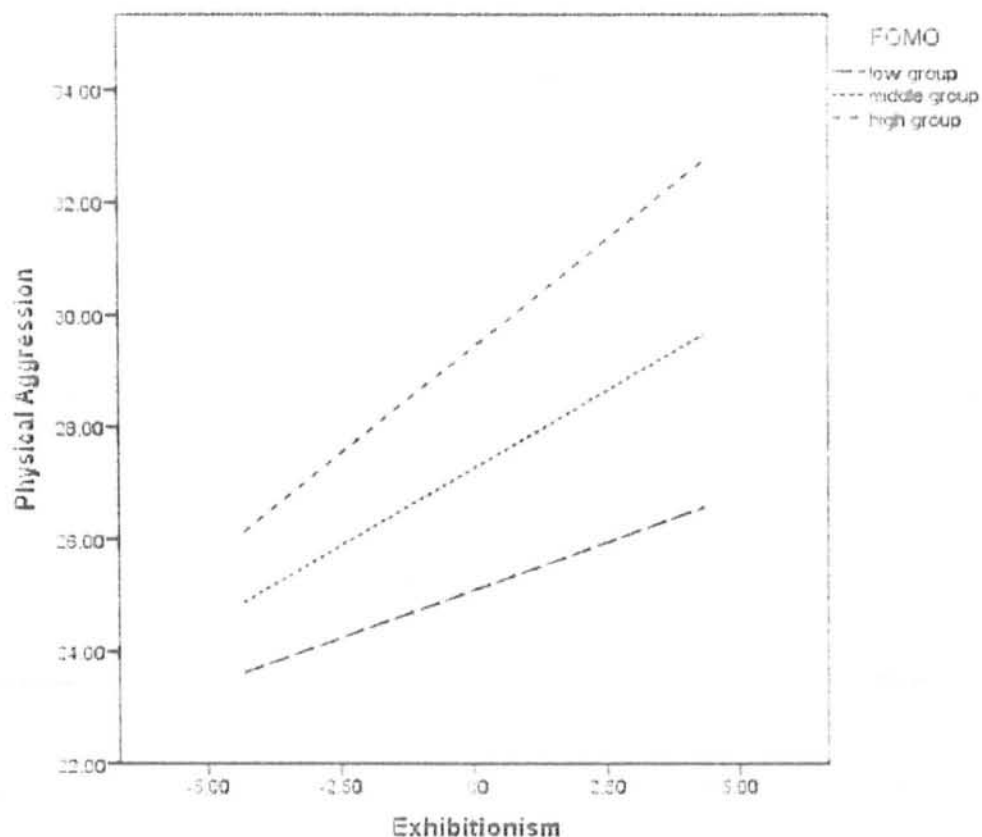


Figure 5. Moderating effect of Fear of Missing Out between Exhibitionism and Physical Aggression.

Table 10 and Figure 5 shows the moderating role of fear of missing out in the relationship between Exhibitionism and Physical aggression. The B value of interaction term is significant and explains 35 % of variance in Physical Aggression. Figure 5 shows that for low FOMO group, relationship between exhibitionism and Physical aggression is less positive as compared to middle and high FOMO groups. For middle FOMO group, relationship between exhibitionism and Physical aggression is positive and for high FOMO group, relationship between exhibitionism and Physical aggression is highly positive.

Table 11

Moderation Analyses for Predicting Hostility from Exhibitionism and Fear of Missing Out Interaction (N = 270)

| Predictor | B | Hostility | |
|--------------|---------|-----------|-------|
| | | 95% CI | |
| | | LL | UL |
| Constant | 25.62** | 24.83 | 26.40 |
| EXHB | .29** | .09 | .49 |
| FOMO | .33** | .22 | .44 |
| EXHB x FOMO | .01 | -.00 | .03 |
| R^2 | .35 | | |
| F | 67.51** | | |
| ΔR^2 | .01 | | |
| ΔF | 2.78 | | |

Note. EXHB = Exhibitionism; FOMO = Fear of Missing Out

* $p < .05$. ** $p < 0.1$.

Table 11 shows the moderating role of fear of missing out in the relationship between Exhibitionism and Hostility. The B value of interaction term is nonsignificant which indicates that there is no moderation effect of FOMO for the relationship between exhibitionism and hostility.

Table 12

Moderation Analyses for Predicting Anger from Exhibitionism and Fear of Missing Out Interaction (N = 270)

| Predictor | B | Anger | |
|--------------|---------|--------|-------|
| | | 95% CI | |
| | | LL | UL |
| Constant | 22.19** | 21.48 | 22.89 |
| EXP | .71** | .41 | 1.01 |
| FOMO | .33** | .25 | .40 |
| EXP x FOMO | .02 | -.00 | .05 |
| R^2 | .29 | | |
| F | 55.36** | | |
| ΔR^2 | .01 | | |
| ΔF | 3.37 | | |

Note. EXP = Exploitativeness; FOMO = Fear of Missing Out.

* $p < .05$. ** $p < 0.1$.

Table 12 shows the moderating role of fear of missing out in the relationship between Exploitativeness and Anger. The B value of interaction term is nonsignificant which indicates that there is no moderation effect of FOMO between anger and exploitativeness.

Table 13

Moderation Analyses for Predicting Physical Aggression from Exhibitionism and Fear of Missing Out Interaction (N = 270)

| Predictor | B | Physical Aggression | |
|--------------|---------|---------------------|-------|
| | | LL | UL |
| Constant | 27.78** | 27.03 | 28.54 |
| EXP | .84** | .52 | 1.16 |
| FOMO | .36** | .27 | .45 |
| EXP x FOMO | .01 | -.02 | .03 |
| R^2 | .33 | | |
| F | 53.58** | | |
| ΔR^2 | .00 | | |
| ΔF | .28 | | |

Note. EXP = Exploitativeness; FOMO = Fear of Missing Out.

* $p < .05$. ** $p < 0.1$.

Table 13 shows the moderating role of fear of missing out in the relationship between Exploitativeness and physical aggression. This indicates that there is no moderation effect of FOMO between exploitativeness and physical aggression.

Table 14

Moderation Analyses for Predicting Hostility from Exploitativeness and Fear of Missing Out Interaction (N = 270)

| Predictor | B | Hostility | |
|--------------|---------|-----------|-------|
| | | LL | UL |
| Constant | 25.98** | 25.36 | 26.60 |
| EXP | .94** | .64 | 1.25 |
| FOMO | .34** | .26 | .41 |
| EXP x FOMO | -.01 | -.03 | .01 |
| R^2 | .42 | | |
| F | 70.78** | | |
| ΔR^2 | .00 | | |
| ΔF | .35 | | |

Note. EXP = Exploitativeness; FOMO = Fear of Missing Out.

* $p < .05$. ** $p < 0.1$.

Table 14 shows the moderating role of fear of missing out in the relationship between Exploitativeness and Hostility. The B value of interaction term is nonsignificant which indicates that there is no moderation effect of FOMO between exploitativeness and Hostility.

Table 15

Gender Based Group Differences on Study Variables Among Social Media Users (N = 270)

| Variables | Gender | | | | <i>t</i> (270) | <i>P</i> | 95% <i>CI</i> | | <i>Cohn's d</i> |
|-----------|--------------------------|-----------|----------------------------|-----------|----------------|----------|---------------|-----------|-----------------|
| | Men (<i>n</i> = 143) | | Women (<i>n</i> = 127) | | | | <i>LL</i> | <i>UL</i> | |
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | | | | | |
| NAR | 43.07 | 7.37 | 42.70 | 6.93 | .42 | .67 | -1.35 | 2.09 | - |
| AUT | 10.52 | 1.86 | 10.89 | 2.47 | 1.41 | .15 | -.91 | .15 | - |
| EXHB | 17.43 | 4.40 | 16.49 | 4.22 | 1.78 | .07 | -.09 | 1.97 | - |
| EXPL | 9.99 | 2.23 | 10.03 | 2.19 | .14 | .88 | -.57 | .49 | - |
| FOMO | 34.01 | 8.36 | 35.52 | 8.71 | 1.41 | .16 | -3.51 | .58 | - |
| AGG | 90.35 | 21.75 | 94.32 | 19.59 | 1.57 | .11 | -8.96 | 1.01 | - |
| Ang | 21.41 | 6.79 | 23.36 | 5.81 | 2.52 | .01 | -3.47 | -.43 | .31 |
| Phy | 28.02 | 7.03 | 27.62 | 6.93 | .47 | .64 | -1.28 | 2.08 | - |
| Hos | 25.01 | 6.58 | 26.98 | 5.82 | 2.61 | .01 | -3.46 | -.48 | .32 |
| Ver | 12.85 | 3.46 | 12.73 | 3.42 | .28 | .77 | -.71 | .94 | - |

Note. NAR = Narcissism; AUT = Authority; EXBH = Exhibitionism; EXPL = Exploitativeness; FOMO = Fear of Missing Out; AGG = Aggression; Ang = Anger; Phy = Physical Aggression; Hos = Hostility; Ver = Verbal Aggression.

Table 15 reflects the gender differences among social media users on study variables. The gender differences were found to be significant only for Anger ($p < .05$) and hostility ($p < .05$). With reference to anger and hostility women scored higher than men. Whereas gender differences were nonsignificant for narcissism, the subscales of Narcissism, Fear of missing out, Aggression and its two subscales physical aggression and verbal aggression.

Table 16

Family System Based Group Differences on Study Variables Among Social Media Users (N = 270)

| Variable | Family System | | | | <i>t</i> (270) | <i>p</i> | 95% CI | | Cohn's <i>d</i> |
|----------|------------------------------|-----------|---------------------------|-----------|----------------|----------|--------|------|--------------------|
| | Nuclear (<i>n</i> = 173) | | Joint (<i>n</i> = 97) | | | | LL | UL | |
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | | | | | |
| NAR | 43.43 | 7.18 | 41.94 | 7.05 | 1.65 | .10 | -.29 | 3.28 | - |
| AUT | 10.84 | 2.15 | 10.43 | 2.21 | 1.49 | .13 | -.13 | .95 | - |
| EXHB | 17.21 | 4.18 | 16.59 | 4.59 | 1.12 | .26 | -.47 | 1.69 | - |
| EXPL | 10.20 | 2.17 | 9.67 | 2.25 | 1.91 | .05 | -.02 | 1.08 | - |
| FOMO | 35.43 | 8.54 | 33.52 | 8.44 | 1.78 | .07 | -.21 | 4.04 | - |
| AGG | 91.64 | 21.86 | 93.26 | 18.88 | .64 | .52 | -6.62 | 3.38 | - |
| Ang | 21.78 | 6.58 | 23.31 | 6.01 | 1.89 | .05 | -3.12 | .07 | - |
| Phy | 27.69 | 7.03 | 28.07 | 6.91 | .42 | .67 | -2.12 | 1.37 | - |
| Hos | 26.27 | 6.45 | 25.35 | 6.02 | .15 | .24 | -.62 | 2.46 | - |
| Ver | 12.40 | 3.65 | 13.49 | 2.91 | .69 | .00 | -1.89 | -.29 | .32 |

Note. NAR = Narcissism, AUT = Authority, EXBH = Exhibitionism, EXPL = Exploitativeness, FOMO = Fear of Missing Out, AGG = Aggression, Ang = Anger, Phy = Physical Aggression, Hos = hostility, Ver = Verbal Aggression

Table 16 displays the group differences regarding family system on study variables among social media users. The family system differences were found to be significant for verbal aggression ($p < .05$). With reference to the verbal aggression, it is depicted that for joint family system there exists high scores as compared to nuclear family system. Whereas there exists nonsignificant difference for Narcissism and its subscales, Fear of missing out, Aggression and rest of its subscales.

Table 17

Area of Living Based Group Differences on Study Variables Among Social Media Users (N = 270)

| Variables | Area of Living | | | | <i>t</i> | <i>p</i> | 95% CI | | Cohn's <i>d</i> |
|-----------|----------------------------|-----------|---------------------------|-----------|----------|----------|--------|-------|--------------------|
| | Urban (<i>n</i> = 225) | | Rural (<i>n</i> = 45) | | | | LL | UL | |
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | | | | | |
| NAR | 43.87 | 7.04 | 38.04 | 5.65 | 6.03 | .00 | 3.90 | 7.74 | .17 |
| AUT | 10.92 | 2.16 | 9.58 | 1.92 | 3.88 | .00 | .70 | 1.98 | .63 |
| EXHB | 17.62 | 4.15 | 13.87 | 3.92 | 5.50 | .00 | 2.46 | 5.04 | .92 |
| EXPL | 10.17 | 2.19 | 9.20 | 2.13 | 2.72 | .00 | .28 | 1.67 | .45 |
| FOMO | 35.61 | 8.57 | 30.42 | 7.03 | 3.8 | .00 | 2.51 | 7.57 | .62 |
| AGG | 93.56 | 21.73 | 85.48 | 13.8 | 3.21 | .00 | 3.07 | 13.07 | .39 |
| Ang | 22.48 | 6.75 | 21.58 | 4.34 | 1.15 | .25 | -.66 | 2.47 | - |
| Phy | 28.42 | 7.09 | 24.89 | 5.55 | 3.71 | .00 | 1.63 | 5.43 | .55 |
| Hos | 26.46 | 6.41 | 23.33 | 4.97 | 3.66 | .00 | 1.42 | 4.83 | .51 |
| Ver | 12.78 | 3.57 | 12.87 | 2.73 | .18 | .85 | -1.02 | .85 | - |

Note. NAR = Narcissism; AUT = Authority; EXBH = Exhibitionism; EXPL = Exploitativeness; FOMO = Fear of Missing Out; AGG = Aggression; Ang = Anger; Phy = Physical Aggression; Hos = Hostility; Ver = Verbal Aggression.

Table 17 displays the differences regarding area of living on study variables among social media users. The area of living based group differences were found to be significant for narcissism and its subscales i.e., authority, exhibitionism, and exploitativeness ($p < .05$), FOMO ($p < .05$), Aggression ($p < .05$), physical aggression ($p < .05$), and hostility ($p < .05$). With reference to the Narcissism and its respective subscales, it is depicted for urban area of living that there exists high score as compared to rural area of living. On FOMO, there exist high scores for those living in urban area. With reference to Aggression and its two subscales, it is depicted that there exists high score for urban area of living as compared to rural area of living. However, there exist nonsignificant differences among two subscales of aggression i.e., anger and verbal aggression.

Table 18

Social Media Usage Based Group Differences on Study Variables Among Social Media Users (N = 270)

| Variable | Social Media Usage | | | | <i>t</i> (270) | <i>p</i> | 95% <i>CI</i> | | <i>Cohn's d</i> |
|----------|---------------------------------|-----------|-------------------------------|-----------|----------------|----------|---------------|-----------|-----------------|
| | High Users (<i>n</i> = 178) | | Low Users (<i>n</i> = 92) | | | | <i>LL</i> | <i>UL</i> | |
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | | | | | |
| NAR | 45.12 | 6.72 | 38.60 | 5.95 | 7.85 | .00 | -8.16 | -4.89 | 1.01 |
| AUT | 11.21 | 1.98 | 9.68 | 2.19 | 5.81 | .00 | -2.05 | -1.02 | .75 |
| EXHB | 18.49 | 3.84 | 18.48 | 3.74 | 8.98 | .00 | -5.35 | -3.43 | .00 |
| EXPL | 10.28 | 2.19 | 10.28 | 2.15 | 2.82 | .01 | -1.34 | -.24 | .00 |
| FOMO | 37.42 | 7.86 | 29.55 | 7.36 | 7.97 | .00 | -9.82 | -5.93 | 1.03 |
| AGG | 95.59 | 22.87 | 85.69 | 14.09 | 4.38 | .00 | -14.3 | -5.44 | .49 |
| Ang | 23.34 | 6.92 | 20.56 | 4.88 | 3.67 | .00 | -4.11 | -1.25 | .44 |
| Phy | 29.08 | 7.26 | 25.42 | 5.69 | 4.54 | .00 | -5.24 | -2.07 | .54 |
| Hos | 27.00 | 6.69 | 23.89 | 4.85 | 4.34 | .00 | -4.51 | -1.70 | .51 |
| Ver | 12.74 | 3.69 | 12.89 | 2.88 | .35 | .73 | -.66 | .95 | - |

Note. NAR = Narcissism; AUT = Authority; EXBH = Exhibitionism; EXPL = Exploitativeness; FOMO = Fear of Missing Out; AGG = Aggression; Ang = Anger; Phy = Physical Aggression; Hos = Hostility; Ver = Verbal Aggression.

Table 18 displays the differences based on high and low usage of social media on study variables among social media users. The differences were found to be significant for Narcissism ($p < .05$), and its subscales ($p < .05$), FOMO ($p < .05$), Aggression ($p < .05$), and its 3 subscale. With reference to Narcissism and its respective subscales i.e., authority, exhibitionism, it is depicted that there exists high score for high users as compared to low users of social media. With respect to FOMO, there exist high scores for high users of social media. With reference to Aggression and its subscales except for verbal aggression, it is depicted for high users that there exists high score as compared to low users of social media whereas there exist nonsignificant difference on verbal aggression.

Table 19

Instagram Usage Based Group Differences on Study Variables Among Social Media Users (N = 270)

| Variables | Instagram Usage | | | | <i>t</i> | <i>p</i> | 95% CI | | Cohn's <i>d</i> |
|-----------|----------------------------|-----------|------------------------------|-----------|----------|----------|--------|------|--------------------|
| | Users (<i>n</i> = 222) | | Nonusers (<i>n</i> = 48) | | | | LL | UL | |
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | | | | | |
| NAR | 43.80 | 7.09 | 38.71 | 5.9 | 5.20 | .00 | 3.14 | 7.04 | .74 |
| AUT | 10.95 | 2.16 | 9.52 | 1.84 | 4.26 | .00 | .77 | 2.09 | .68 |
| EXHB | 17.66 | 4.20 | 13.89 | 3.55 | 6.43 | .00 | 2.60 | 4.93 | .92 |
| EXPL | 10.06 | 2.26 | 9.79 | 1.92 | .75 | .44 | 2.48 | 5.05 | - |
| FOMO | 35.81 | 8.38 | 29.79 | 7.49 | 4.59 | .00 | -.42 | .96 | .73 |
| AGG | 93.12 | 21.73 | 88.04 | 15.4 | 1.91 | .05 | -.20 | 10.3 | - |
| Ang | 22.40 | 6.75 | 21.95 | 4.55 | .57 | .57 | -1.13 | 2.04 | - |
| Phy | 28.23 | 7.09 | 25.97 | 6.09 | 2.25 | .02 | .26 | 4.24 | .33 |
| Hos | 26.39 | 6.40 | 23.83 | 5.37 | 2.89 | .00 | .79 | 4.32 | .41 |
| Ver | 12.71 | 3.50 | 13.18 | 3.11 | .87 | .38 | -1.55 | .60 | - |

Note. NAR = Narcissism; AUT = Authority; EXBH = Exhibitionism; EXPL = Exploitativeness; FOMO = Fear of Missing Out; AGG = Aggression; Ang = Anger; Phy = Physical Aggression; Hos = Hostility; Ver = Verbal Aggression.

Table 19 displays the differences between Instagram users and nonusers with reference to study variables. The differences were found to be significant for Narcissism ($p < .05$), and its two subscales ($p < .05$), FOMO ($p < .05$), physical aggression ($p < .05$), and Hostility ($p < .05$). With respect to Narcissism and its respective subscales i.e., authority, exhibitionism, it is depicted for Instagram users score high as compared to nonusers. On FOMO, Instagram users scored high than nonusers. With respect to physical aggression and hostility, Instagram users scored higher than nonusers. Whereas there exist nonsignificant difference on exploitativeness, Aggression, and its two subscales i.e., anger and verbal aggression.

Table 20

Snapchat Usage Based Group Differences on Study Variables Among Social Media Users (N = 270)

| Variables | Snapchat Usage | | | | <i>t</i> (270) | <i>p</i> | 95% CI | | Cohn's <i>d</i> |
|-----------|----------------------------|-----------|-------------------------------|-----------|----------------|----------|--------|------|--------------------|
| | Users (<i>n</i> = 160) | | Nonusers (<i>n</i> = 110) | | | | LL | UL | |
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | | | | | |
| NAR | 44.66 | 7.03 | 40.34 | 6.58 | 5.09 | .00 | 2.65 | 5.99 | .63 |
| AUT | 11.16 | 2.09 | 10.02 | 2.12 | 4.38 | .00 | .63 | 1.66 | .70 |
| EXHB | 18.00 | 3.85 | 15.53 | 4.59 | 4.78 | .00 | 1.46 | 3.48 | .59 |
| EXPL | 10.28 | 2.17 | 9.61 | 2.20 | 2.50 | .01 | .144 | 1.21 | .31 |
| FOMO | 37.36 | 7.69 | 30.93 | 8.29 | 6.55 | .00 | 4.50 | 8.37 | .81 |
| AGG | 93.57 | 22.81 | 90.25 | 17.43 | 1.36 | .19 | -1.49 | 8.16 | - |
| Ang | 22.27 | 6.82 | 22.42 | 5.79 | .19 | .85 | -1.67 | 1.37 | - |
| Phy | 28.47 | 7.47 | 26.91 | 6.09 | 1.88 | .07 | -.07 | 3.19 | - |
| Hos | 26.88 | 6.55 | 24.57 | 5.66 | 3.09 | .00 | .83 | 3.78 | .37 |
| Ver | 12.41 | 3.74 | 13.35 | 2.87 | 2.34 | .02 | -1.73 | -.15 | .28 |

Note. NAR = Narcissism; AUT = Authority; EXBH = Exhibitionism; EXPL = Exploitativeness; FOMO = Fear of Missing Out; AGG = Aggression; Ang = Anger; Phy = Physical Aggression; Hos = Hostility; Ver = Verbal Aggression.

Table 20 displays the differences between Snapchat users and nonusers on study variables. The differences found to be significant for Narcissism ($p < .05$), and its subscales ($p < .05$), FOMO ($p < .05$), Hostility ($p < .05$), and verbal aggression ($p < .05$). With reference to Narcissism, and its respective subscales i.e., authority, exhibitionism and exploitativeness, it is depicted Snapchat users scored more as compared to nonusers. On FOMO, Snapchat users scored higher than non-users. With respect to hostility and verbal aggression, it is depicted that Snapchat users scored more as compared to nonusers. There exist nonsignificant differences among aggression and two of its subscales anger physical aggression.

Table 21

Twitter Usage Based Group Differences on Study Variables Among Social Media Users (N = 270)

| Variables | Twitter Usage | | | | <i>t</i> (270) | <i>p</i> | 95% CI | | Cohn's <i>d</i> |
|-----------|----------------------------|-----------|-------------------------------|-----------|----------------|----------|--------|------|--------------------|
| | Users (<i>n</i> = 111) | | Nonusers (<i>n</i> = 159) | | | | LL | UL | |
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | | | | | |
| NAR | 43.33 | 7.62 | 42.59 | 6.83 | .84 | .40 | -1.00 | 2.49 | - |
| AUT | 10.44 | 2.23 | 10.87 | 2.13 | 1.64 | .10 | -.96 | .095 | - |
| EXHB | 17.75 | 4.29 | 16.47 | 4.30 | 2.41 | .01 | .24 | 2.33 | .30 |
| EXPL | 9.92 | 2.35 | 10.07 | 2.11 | .51 | .60 | -.69 | .41 | - |
| FOMO | 35.57 | 8.84 | 34.16 | 8.31 | 1.33 | .18 | -.68 | 3.47 | - |
| AGG | 92.68 | 25.63 | 91.89 | 16.74 | .29 | .75 | -4.68 | 6.26 | - |
| Ang | 21.70 | 7.57 | 22.76 | 5.44 | 1.27 | .18 | -2.72 | .59 | - |
| Phy | 28.69 | 7.43 | 27.23 | 6.59 | 1.66 | .09 | -.27 | 3.19 | - |
| Hos | 26.09 | 7.65 | 25.83 | 5.17 | .30 | .76 | -1.39 | 1.89 | - |
| Ver | 12.87 | 4.07 | 12.74 | 2.93 | .29 | .77 | -.76 | 1.02 | - |

Note. NAR = Narcissism; AUT = Authority; EXBH = Exhibitionism; EXPL = Exploitativeness; FOMO = Fear of Missing Out; AGG = Aggression; Ang = Anger; Phy = Physical Aggression; Hos = Hostility; Ver = Verbal Aggression.

Table 21 displays the differences between users and nonusers of Twitter on study variables. The differences found to be significant only for exhibitionism ($p < .05$). With reference to exhibitionism, it is depicted for Twitter users that there exist high scores as compared to nonusers. There were nonsignificant differences for narcissism and its two of the subscales, FOMO, aggression and its respective subscales.

Table 22

Viber Usage Based Group Differences on Study Variables Among Social Media Users (N = 270)

| Variables | Viber Usage | | | | <i>t</i> (270) | <i>p</i> | 95% CI | | Cohn's <i>d</i> |
|-----------|--------------------------|-----------|-------------------------------|-----------|----------------|----------|--------|-------|-----------------|
| | User (<i>n</i> = 68) | | Nonusers (<i>n</i> = 202) | | | | LL | UL | |
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | | | | | |
| NAR | 45.32 | 6.71 | 42.08 | 7.13 | 3.29 | .00 | 1.30 | 5.19 | .46 |
| AUT | 10.76 | 1.75 | 10.67 | 2.30 | .34 | .77 | -.44 | .62 | - |
| EXHB | 18.60 | 3.83 | 16.45 | 4.37 | 3.62 | .00 | .98 | 3.32 | .51 |
| EXPL | 10.20 | 2.17 | 9.95 | 2.23 | .84 | .40 | -.35 | .87 | - |
| FOMO | 37.59 | 8.49 | 33.79 | 8.36 | 3.23 | .00 | 1.48 | 6.12 | .45 |
| AGG | 95.71 | 24.4 | 91.04 | 19.37 | 1.43 | .15 | -1.81 | 11.14 | - |
| Ang | 22.59 | 7.38 | 22/24 | 6.07 | .35 | .72 | -1.62 | 2.31 | - |
| Phy | 29.51 | 7.73 | 27.27 | 6.62 | 2.15 | .03 | .17 | 4.33 | .33 |
| Hos | 27.04 | 7.04 | 25.57 | 6.00 | 1.54 | .12 | -.42 | 3.36 | - |
| Ver | 13.45 | 3.79 | 12.57 | 3.28 | 1.71 | .09 | -.14 | 1.90 | - |

Note. NAR = Narcissism; AUT = Authority; EXBH = Exhibitionism; EXPL = Exploitativeness; FOMO = Fear of Missing Out; AGG = Aggression; Ang = Anger; Phy = Physical Aggression; Hos = Hostility; Ver = Verbal Aggression.

Table 22 displays the differences between users and nonusers of Viber on study variables. The differences were found to be significant for Narcissism ($p < .05$), and one of the subscales i.e., exhibitionism ($p < .05$), FOMO ($p < .05$), and physical aggression ($p < .05$). With reference to Narcissism, and one of its domain i.e., exhibitionism, it is depicted for Viber users that there exist high scores as compared to nonusers. On FOMO, users of Viber scored higher than nonusers. With reference to physical aggression, it is depicted Viber users score more as compared to nonusers. There exist nonsignificant differences among two of the subscales of narcissism (i.e., Authority and Exploitativeness), Aggression and its subscales of Anger, Hostility, and Verbal Aggression.

Table 23

Imo Usage Based Group Differences on Study Variables Among Social Media Users (N = 270)

| Variables | Imo Usage | | | | <i>t</i> | <i>p</i> | 95% CI | | Cohn's <i>d</i> |
|-----------|----------------------------|-----------|-------------------------------|-----------|----------|----------|--------|-------|--------------------|
| | Users (<i>n</i> = 103) | | Nonusers (<i>n</i> = 167) | | | | LL | UL | |
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | | | | | |
| NAR | 44.65 | 7.33 | 41.81 | 6.85 | 3.22 | .00 | 1.10 | 4.57 | .41 |
| AUT | 10.75 | 1.97 | 10.66 | 2.29 | .32 | .75 | -.44 | .60 | - |
| EXHB | 18.49 | 4.51 | 16.07 | 3.96 | 4.64 | .00 | 1.39 | 3.46 | .58 |
| EXPL | 9.83 | 2.34 | 10.13 | 2.13 | 1.09 | .27 | -.85 | .24 | - |
| FOMO | 36.94 | 9.46 | 33.39 | 7.64 | 3.22 | .00 | 1.37 | 5.73 | .43 |
| AGG | 98.00 | 24.21 | 88.65 | 17.57 | 3.40 | .00 | 3.93 | 14.76 | .46 |
| Ang | 23.19 | 7.60 | 21.79 | 5.51 | 1.62 | .11 | -.30 | 3.09 | - |
| Phy | 30.13 | 7.11 | 26.41 | 6.52 | 4.29 | .00 | 2.00 | 5.41 | .55 |
| Hos | 27.86 | 7.13 | 24.75 | 5.42 | 3.80 | .00 | 1.49 | 4.72 | .51 |
| Ver | 13.46 | 3.62 | 12.39 | 3.26 | 2.50 | .01 | .23 | 1.91 | .32 |

Note. NAR = Narcissism; AUT = Authority; EXBH = Exhibitionism; EXPL = Exploitativeness; FOMO = Fear of Missing Out; AGG = Aggression; Ang = Anger; Phy = Physical Aggression; Hos = Hostility; Ver = Verbal Aggression.

Table 23 displays the differences between users and nonusers of Imo on study variables. The differences were found to be significant for Narcissism ($p < .05$), and its subscale exhibitionism ($p < .05$), FOMO ($p < .05$), and aggression ($p < .05$), and its subscales Physical Aggression ($p < .05$), Hostility ($p < .05$), and Verbal Aggression ($p < .05$). With reference to Narcissism and its subscales Exhibitionism, it is depicted that there exists high score for users as compared to nonusers of Imo. On FOMO, users of Imo scored higher than nonusers. With respect to Aggression and subscales i.e., Physical Aggression, Hostility, and Verbal Aggression Imo users scored more than nonusers. There were nonsignificant differences on two subscales of narcissism (i.e., Authority and Exploitativeness) and one subscale of Aggression (i.e., Anger).

Table 24

Skype Usage Based Group Differences on Study Variables Among Social Media Users (N = 270)

| Variables | Skype Usage | | | | <i>t</i> | <i>p</i> | 95% CI | | Cohn's <i>d</i> |
|-----------|----------------------------|-----------|-------------------------------|-----------|----------|----------|-----------|-----------|--------------------|
| | Users (<i>n</i> = 108) | | Nonusers (<i>n</i> = 162) | | | | <i>LL</i> | <i>UL</i> | |
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | | | | | |
| NAR | 45.06 | 7.54 | 41.46 | 6.53 | 4.05 | .00 | 1.85 | 5.35 | .51 |
| AUT | 10.98 | 2.16 | 10.51 | 2.17 | 1.77 | .07 | -.05 | 1.01 | - |
| EXHB | 18.24 | 3.95 | 16.16 | 4.39 | 3.97 | .00 | 1.05 | 3.11 | .50 |
| EXPL | 10.17 | 2.43 | 9.91 | 2.05 | .91 | .36 | -.30 | .82 | - |
| FOMO | 36.27 | 9.09 | 33.73 | 8.02 | 2.42 | .01 | .47 | 4.61 | .30 |
| AGG | 97.97 | 24.53 | 88.38 | 16.95 | 3.54 | .00 | 4.24 | 14.49 | .47 |
| Ang | 23.03 | 7.51 | 21.85 | 5.53 | 1.39 | .16 | -.49 | 2.84 | - |
| Phy | 30.42 | 7.52 | 26.10 | 6.01 | 4.99 | .00 | 2.62 | 6.03 | .65 |
| Hos | 27.55 | 7.19 | 24.86 | 5.38 | 3.32 | .00 | 1.09 | 4.29 | .44 |
| Ver | 13.50 | 3.58 | 12.32 | 3.26 | 2.82 | .00 | .36 | 2.02 | .35 |

Note. NAR = Narcissism; AUT = Authority; EXBH = Exhibitionism; EXPL = Exploitativeness; FOMO = Fear of Missing Out; AGG = Aggression; Ang = Anger; Phy = Physical Aggression; Hos = Hostility; Ver = Verbal Aggression.

Table 24 displays the differences between users and non-users of Skype on study variables. The differences found to be significant for Narcissism ($p < .05$), and its subscale exhibitionism ($p < .05$), FOMO ($p < .05$), and Aggression ($p < .05$), and its subscales Physical Aggression ($p < .05$), Hostility ($p < .05$), and Verbal Aggression ($p < .05$). With reference to Narcissism and its one subscale i.e., Exhibitionism, it is depicted for users of Skype scored high as compared to nonusers. On FOMO, users of Skype scored higher than nonusers. On Aggression and its subscales i.e., Physical aggression, Hostility, and Verbal aggression, it is depicted that users of Skype score high as compared to nonusers. There were nonsignificant differences two subscales of narcissism (i.e., Authority and Exploitativeness) and one subscale of Aggression (i.e., Anger).

DISCUSSION

Discussion

The current study was undertaken to examine fear of missing out in a moderating role, for the relationship between Narcissism and aggression among social media users. In addition, role of different demographic variables such as gender, age, education, income, social media engagement, parent's education, area of living, and family system were explored in relation to study variables. To fulfill the study objectives data ($N = 270$) was collected from the men and women studying in different universities of Islamabad and Rawalpindi. The age range of the participants was 18 to 26 years.

To gather data for the current study, participants responded on Narcissistic Personality Inventory NPI-13 (Miller, Hoffman, Reidy, Zeichner & Campbell, 2013), Fear of Missing Out Scale (Przybylski et al., 2013), and Aggression Questionnaire (Buss and Perry, 1992). To find out internal consistency of the scales and their subscales, reliability analysis was carried out for the present sample. High value of Cronbach Alpha (see table 2) for Narcissistic Personality Inventory, Fear Of Missing Out Scale and Aggression Questionnaire show that scales have acceptable internal consistency and reliability. Low reliability for the exploitativeness is indicated by the previous research (Imran, 2015). Present study shows that all the scales and subscales have skewness and kurtosis within the range of -2 to +2 which means data is normally distributed (Field, 2013).

The first objective of the study was 'to study the relationship between narcissism, aggression, and fear of missing out among social media users'. In connection to this it was hypothesized that; Narcissism will be positively related to the FOMO and aggression among social media users. This hypothesis was supported by the findings of the study as there was a significant positive relationship between Narcissism and FOMO and the subscales of narcissism i.e., authority, exhibitionism and exploitativeness also show positive relationship with FOMO. So was between Narcissism and aggression and between subscales of narcissism i.e., authority, exhibitionism and exploitativeness and subscales of aggression i.e., anger, physical aggression, hostility, and verbal aggression (see Table 3). The results are consistent

with the previous study (Błachnio & Przepiórka, 2018) indicating that fear of missing out is related with narcissism. Several studies (Bushman & Baumeister 1998; Imran, 2015; Raich & Varna, 2014; Vazire & Funder, 2006) have indicated for existence of a significant positive relationship between narcissism and aggression. Similarly, it has been indicated that aggression is significantly predicted by narcissism among social media users (see Table 18).

Second objective of the research was 'to study the moderating role of fear of missing out in the relationship between narcissism and aggression among social media users.' In connection to this it was hypothesized that: Fear of missing out will strengthen the relationship between narcissism and aggression. The hypothesis was supported by the findings where fear of missing out stood as a moderator and strengthened the relationship between narcissism and aggression (see table 5). The current study shows that FOMO strengthens the relationship between authority and anger (see Table 6), authority and physical aggression (see table 7), exhibitionism and anger (see table 9), exhibitionism and physical aggression (see table 11). This is consistent with the previous researches. People often utilize social media to look important, look special, and to gain attention, status, and self-esteem. People who are more involved with social networking sites are more likely to think other people's lives were happier and better-off. These high users of social media are also more likely to negatively compare themselves to others and feel worse about themselves (Firestone, 2012). Another research study (Park, et al. 2013) identifies that dominance/authority is the reliable motivator of anger expressions. This can be because of the reason that narcissist individuals want themselves to be in authority and want to be dominant. They are good manipulators to handle or control other people. They have tendency to use people for their own benefits. When they come in authority they think they are only competent to make the rules. According to Witte, Callahan & Perez-Lopez, (2002) narcissists show their anger either by use of power which includes kicking, hitting, choking, slapping or the use of any type of weapon. Another study suggested that the narcissists having exhibitionism constantly seek approval of perfect admiration from others all the time (Campbell & Foster, 2002). This can be because of the reason that when narcissists cannot get admirations from others they become angry and can show physical aggression and when such tendencies are coupled with more of missing out feelings then this association gets even stronger.

The third objective of the study was 'to explore the differences on narcissism, fear of missing out and aggression with reference to various demographic variables'. With respect to gender it was hypothesized that; narcissism will be higher among female social media users than male social media users. The result of the data did not support the hypothesis (see table 4) as male users scored high on the narcissism than female users. An overemphasis on self is quite much prevalent that build up more of self-focus. That is why to make demands for admiration and attention, they show exhibitionistic behavior. A research study suggested that men are more likely to express narcissism in terms of obsession with power, instrumental leadership behaviors, and exploitative behaviors (Carroll, 1989). Tschanz, Morf, & Turner (1998) found that men are high on the narcissism than women.

The fourth hypothesis of the study was 'Male social media users will score higher on aggression as compared to female social media users'. The result of the data did not support the hypothesis as women scored high on aggression a compared to men, with reference to subscales of aggression women scored higher on anger and hostility as compared to men and men scored higher on physical and verbal aggression (see Table 15). The reason behind the hypothesis may be that in every culture, it is believed that men show more aggression as compared to women. Although men are notorious for showing aggression, but intense aggressive tendencies are also prevalent among women. Studies (Felson, 2006; George, 2003; Hamel, 2005), suggested that women are equally aggressive as men are. Findings of the present study indicate that women are high on anger and hostility as compared to men (see table 5). These findings are supported by a previous study (Björkqvist, 2018) that girls are more indirectly aggressive (i.e., anger and hostility).

With respect to age it was hypothesized that "Age will have a negative relationship with narcissism, FOMO, and aggression." Current findings did not support this hypothesis (see table 4). This indicates that maturational changes do not makes for changes in one's personal characteristics. However, it is essential to keep in mind that sample of the study had a small age range i.e., 18-26 years. So, the relationship trends induced by age of the respondent might not have unfolded for this specific reason.

In addition to these, exploratory analyses indicated that parental education was positively related with narcissism and FOMO (see table 4). This might be because of

the reason that educated parents may boost up the self-image of their children which may lead to heightened self-esteem. Sahin, Barut, & Ersanli (2013) proposed a significant positive relationship between self-esteem and parental education. Abel, Buff, & Burr (2016) suggested that there is influence of self-esteem on FOMO. Current study also indicates that parental education had positive relationship with FOMO (see table 4). This might be because of the reason that being residents of a collectivistic society for having big social circle and the changing virtual interaction patterns enabled by social media usage one gets a chance to be a viewer of activities others are undergoing and thus prompt FOMO among the users. Moreover, it is indicated that there is significant positive relationship between monthly income of the family and narcissism. Individuals having high monthly income of the family belonging to upper class might have more opportunities to develop an inflated sense of self or being superior. As the research study indicated the rich individuals have more tendencies of narcissism (Szalavitz, 2013). Current study also indicates that significant positive correlation between time spent on social media and narcissism, FOMO, and aggression (see table 4). This can be due to the reason that social media encourages the self-promotion, the more time an individual surf on social media the more boosted sense of self is the result. Other than this, the one who spends more time on social networking sites, gets more involved in checking the status of others and compares the life with others. Consequences of which are aggressive tendencies.

Current study indicates the mean differences on family system i.e., nuclear and joint family system on study variables (see table 16). The result suggested that with reference to verbal aggression, social media users living in joint family system scored more. This may be due to the reason that there is lack of privacy and intrusion in the matters of other that causes frustration and aggressive tendencies and give rise to verbal out flow in a provocation conducive environment. This is supported by the previous research where it has been seen that there is positive relationship between aggression and size of family. Aggressive tendencies are higher in joint family system than nuclear family system (Khan, Quadri, & Aziz, 2014).

Table 7 displays the mean differences on area of living i.e., urban and rural area of living. Result of the current study suggested that with respect to Narcissism, FOMO, and aggression, residents of urban area of living scored higher than the residents of the



rural area of living. The results suggested significant differences for all the variables of the study except for Anger and Verbal aggression. This can be due to the reason that use of social media activities would be more readily and adequately available to residents of urban area than in rural areas as technical facilities are better in the cities. By using more social media, people living in the urban area will develop the more chance of self-promotion which leads narcissism (Firestone, 2012), by getting more involve with social media people might develop the tendencies to compare their life with others. Because urban areas provide more facilities than rural areas. A research study suggested that there are community differences in the use of social media. People living in the rural areas are less likely to use social networking sites (Perrin, 2015).

Table 18 to 24 depict the mean differences of high and low users of social media and users of various networking sites e.g., Facebook, Snapchat, Twitter, Instagram, Viber, Imo, and Skype. The result suggested that Narcissism, FOMO, and Aggression are high among high users of social media than low users of social media. Results also showed the significant results for all the study variables and their respective subscales except for verbal aggression. This may be due to the reason that high users involve highly in the social media and ooze out aggressive tendencies at those forums that are not verbal in nature. They spend their maximum time on social networking sites and use variety of social networking sites as compared to low users. A previous research suggested that social networks provide a great platform to narcissists to showcase themselves (Gnaps & Appel, 2017). Gentile et al. (2012) proposed that people with high narcissistic tendencies tend to use more Facebook, spend more time on it, update status, and expose themselves. Fear of missing out was found to be related with social media engagement in previously. Fear of missing out was found to be positively linked with Facebook intrusion (Błachnio & Przepiórka, 2018). Fear of missing out has also been pointed out as an intervening variable for social media engagement and academic motivation of the students in the previous research (Alt, 2015). Another research study suggested that Facebook and other social sites can cause jealousy among people and This jealousy can cause aggressive tendencies. (Muise, Christofides, & Desmarais, 2009). This can explain tendencies for both FOMO and aggression among high social media users.

Conclusion

The present study aimed to explore the moderating role of fear of missing out in the relationship between Narcissism and Aggression among social media users. Results suggest that there is significant positive relationship between Narcissism and Aggression and Fear of missing out strengthened this relationship. It was also shown that narcissistic tendencies are high among male social media users as compared to female social media users. Aggressive tendencies were found to be higher in female social media users. Aggressive tendencies are higher in joint family system. Education based differences were nonsignificant for study variables. Moreover, residents of urban area have more narcissistic tendencies, FOMO, and Aggression as compared to residents of rural area. Likewise, Narcissism, FOMO and Aggression were higher among high users of social media than low users of social media.

Limitations and Recommendations

There are following limitations of the present study.

1. Self-report instruments have been used in the present study which are often accused of providing socially desirable responses which can affect the results of the study. To overcome the social desirability interviews are recommended along with the questionnaires.
2. The current study was conducted with university students only. So, it is suggested that the future researches may be conducted on other groups e.g., college students and professionals so that to reveal how FOMO impacts various personal tendencies among them.
3. Study findings cannot be generalized as sample size of the present study was small. Greater sample size should be taken in future so as to generalize the study findings. It is recommended that sample should include individuals from diverse settings to provide for better generalization.
4. Present study comprised of social media users who are studying in different universities. It would be worthwhile to study those users who are not part of educational institutes to highlight how Narcissism, FOMO, and aggressive tendencies prevail among them.

Implications of the Study

The present study is helpful in developing understanding of fear of missing out which is a new phenomenon, narcissism and aggression. For better understanding of the variables current study provided added to the knowledge base of FOMO advocating for cherishing other's happiness so that parents, teachers, and professionals can teach about them and as a result pathological side of personality traits may not evolve. In doing so such efforts may be directed towards men and young age groups were.

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APPENDICES

Informed consent

I Iqra Akmal Malik is a MSc research student at National Institute of Psychology, Quaid-i-Azam University, Islamabad conducting a research as per requirement of degree. This research aims to explore about certain behaviors among social media users. I request you to support my purpose and participate in this research project. I assure you that information provided will be kept confidential and will only be used for research purposes. You have full right to withdraw at any stage of filling the questionnaire.

Your help, support and participation will be highly appreciated.

Participation in this research is completely based on your willingness to participate.

If you agree to participate then sign on the space provided below.

Thank you!

Signature _____

Iqra Akmal Malik

iqraakmal41197@yahoo.com

Demographic Information sheet

Gender: Male _____ Female _____

Age (Years): _____

Years of education: _____

Monthly income of family _____

Family system: Nuclear _____ Joint _____ other _____

Father's education _____

Mother's education _____

Birth order _____

Area of living: Urban _____ Rural _____

How much time do you spend on social media? _____ (hours/min)

Which type of social media network are you using right now?

Facebook _____ Instagram _____ Snapchat _____ Kim _____ Twitter _____

WhatsApp _____ Viber _____ IMO _____ Skype _____ Sarahah _____

Narcissistic Personality Inventory NPI-13

Using the 5 point scale shown below, indicate how characteristic or not characteristics each of the following statements is in describing you. Place your rating in the box to the right of the statement.

1 = Not at all characteristic of me

2 = Not characteristic of me

3 = Neutral

4 = Characteristic of me

5 = Very much characteristic of me

| S.no | Statements | 1 | 2 | 3 | 4 | 5 |
|------|---|---|---|---|---|---|
| 1 | I find it easy to manipulate (influence people to my advantage) or (misuse) people. | | | | | |
| 2 | I know that I am a good person because everybody keeps telling me so. | | | | | |
| 3 | I don't mind following orders. | | | | | |
| 4 | I usually get the respect I deserve. | | | | | |
| 5 | I like to show off my body. | | | | | |
| 6 | I have a strong will to power (desire to exercise authority). | | | | | |
| 7 | I like to do things for other people. | | | | | |
| 8 | I like to look at my body. | | | | | |
| 9 | Being in authority doesn't mean much to me. | | | | | |
| 10 | I will never be satisfied until I get all that I deserve. | | | | | |

| | | | | | | |
|----|--|--|--|--|--|--|
| 11 | I will usually show off if I get the chance. | | | | | |
| 12 | I am a born leader. | | | | | |
| 13 | I like to look at myself in the mirror. | | | | | |

AGGRESSION QUESTIONNAIRE

Using the 5 point scale shown below, indicate how uncharacteristic or characteristic each of the following statements is in describing you. Place your rating in the box to the right of the statement.

1 =Not at all characteristic of me

2 =Not characteristic of me

3 =Neutral

4 =Characteristic of me

5 =Very much characteristic of me

| S.no | Statements | 1 | 2 | 3 | 4 | 5 |
|------|---|---|---|---|---|---|
| 1 | Some of my friends think I am a hothead (I get angry easily). | | | | | |
| 2 | If I have to resort (use) to violence to protect my rights, I will. | | | | | |
| 3 | When people are especially nice to me, I wonder (doubt) what they want. | | | | | |
| 4 | I tell my friends openly when I disagree with them. | | | | | |
| 5 | I have become so mad that I have broken things (started breaking things). | | | | | |
| 6 | I can't help getting into arguments when people disagree with me. | | | | | |
| 7 | I wonder why sometimes I feel so bitter (bad) about things. | | | | | |
| 8 | Once in a while, I can't control the urge to strike (wish to hit) another person. | | | | | |
| 9 | I am an even-tempered (calm) person. | | | | | |
| 10 | I am suspicious (experience doubt or mistrust) of overly friendly strangers. | | | | | |

| | | | | | | |
|----|---|--|--|--|--|--|
| 11 | I have threatened people I know. | | | | | |
| 12 | . I flare up (get angry) quickly but get over it quickly. | | | | | |
| 13 | Given enough provocation (if irritated), I may hit another person. | | | | | |
| 14 | When people annoy (irritate) me, I may tell them what I think of them. | | | | | |
| 15 | I am sometimes eaten up (get consumed up) with jealousy. | | | | | |
| 16 | I can think of no good reason for ever hitting a person | | | | | |
| 17 | At times I feel I have gotten a raw deal out of life (life is unfair to me). | | | | | |
| 18 | I have trouble controlling my temper. | | | | | |
| 19 | When frustrated (upset), I let my irritation show. | | | | | |
| 20 | . I sometimes feel that people are laughing at me behind my back. | | | | | |
| 21 | I often find myself disagreeing with people | | | | | |
| 22 | If somebody hits me, I hit back. | | | | | |
| 23 | I sometimes feel like a powder keg (explosive) ready to explode (burst). | | | | | |
| 24 | Other people always seem to get the breaks (easy time). | | | | | |
| 25 | There are people who pushed me so far that we came to blows (started fighting). | | | | | |
| 26 | I know that "friends" talk about me behind my back. | | | | | |
| 27 | My friends say that I'm somewhat argumentative. | | | | | |
| 28 | Sometimes I fly off (loose temper) the handle for no good reason. | | | | | |
| 29 | I get into fights a little more than the average person. | | | | | |

FEAR OF MISSING OUT SCALE

Below is a collection of statements about your everyday experience. Using the scale provided please indicate how true each statement is of your general experiences. Please answer according to what really reflects your experiences rather than what you think your experiences should be. Please treat each item separately from every other item.

Response Anchors

- 1= Not at all true of me
 2= Slightly true of me
 3= Moderately true of me
 4= Very true of me
 5= Extremely true of me

| s.no | statements | 1 | 2 | 3 | 4 | 5 |
|------|--|---|---|---|---|---|
| 1 | I fear others have more rewarding experiences than me. | | | | | |
| 2 | I fear my friends have more rewarding experiences than me | | | | | |
| 3 | I get worried when I find out my friends are having fun without me | | | | | |
| 4 | I get anxious when I don't know what my friends are up to. | | | | | |
| 5 | It is important that I understand my friends in jokes | | | | | |

| | | | | | | |
|----|---|--|--|--|--|--|
| 6 | Sometimes, I wonder if I spend too much time keeping up with what is going on | | | | | |
| 7 | It bothers me when I miss an opportunity to meet up with friends. | | | | | |
| 8 | When I have a good time, it is important for me to share the details online (e.g. updating status). | | | | | |
| 9 | When I miss out on a planned get-together it bothers me. | | | | | |
| 10 | When I go on vacation, I continue to keep tabs on what my friends are doing | | | | | |

Joshua D Miller <jdmiller@uga.edu>

Mar 25, 2018 at 6:21 PM

to: iqra akmal

cc: bgentile@gmail.com

Sure - you are welcome to use it.

Sent from my iPhone

Brittany Gentile <bgentile@gmail.com>

Mar 26, 2018 at 11:48 PM

To: iqra akmal

From: Joshua D Miller

Hi Iqra,
The measure is attached here along with the scoring instructions, in case you need a copy.

Best,
Brittany