

Mediating Role of Family Relations between Internet Addiction and Aggression Among University Students

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The current study aimed to find out relationship between internet addiction, aggression and family relations in university students. Moreover, the study also examined the mediating role of family relations between internet addiction and aggression among university students. The University students were recruited as sample as researchers have found that majority of young adults use internet as time pass and become addicted but they are not aware of the addition (Hassan et al., 2020). Cross-sectional survey research design was used and data was collected through purposive sampling technique using Internet Addiction Test (Young, 1998), Aggression Questionnaire (Buss & Perry, 1992) and Index of Family Relations (Hudson, 1992). In addition, gender differences were also studied. Sample comprised of 300 students between the age of 18 and 35 years ($M = 29.09$, $SD = 11.32$). Bivariate correlation matrix revealed that internet addiction had significant positive relationship with aggression ($r = 0.88$, $p < 0.01$) and significant negative relationship with family relations ($r = -0.86$, $p < 0.01$). Moreover, mediating role of family relations was found to be significant in relationship between internet addiction and aggression among university students. However, gender differences were found to be non-significant on internet addiction, family relations and aggression among university students. The study will be useful in highlighting the importance of good family relations in minimizing adverse effects of internet addiction and aggression among university students.

Keywords. Internet addiction, aggression, family relations, university students

In this modern era, majority of people are spending most of their time in online activities. Excessive internet use has led to an enormous

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increase in mental health problems among youth over the past few decades, rate of using has raised many folds over the prior 20 years (Internet World Stats, 2020). Internet addiction has emerged as one of the most prominent social and mental health problem among young people (Chi et al., 2020). Davis (2001) originated the cognitive behavioral model in which he contrasted between specific problematic internet uses and generalized problematic internet uses. The summed up generalized problematic internet use expresses the general use of internet multifacetedly, while specific problematic internet use distinguishes the use of internet for a particular reason such as internet addiction. According to Murali and George (2007) internet over usage is known as internet addiction and could be described as maladaptive cognitions and behaviors. The thoughts and cognitions of an individual are the basic cause of unfamiliar behavior (Widyanto & Griffiths, 2006). Internet addiction is a type of behavior that has been considered as a mental health problem that increases aggression on one hand while decreases the eating habits, sleep and somatic activities on the other hand, over a long period of time (Lam, 2014; Vandelanotte et al., 2009). Excessive use of internet deteriorates daily life of the individuals disturbing the performance in study and family relations (Cao & Su, 2006). Thus, the harmful effects of excessive internet use have been extensively described in literature.

Internet addiction is an ongoing issue of social and mental health among youth that has captured the consideration from the whole world, especially from Asian countries, i.e. China and Korea (Ko et al., 2012). Those students who are dependent to internet investing a larger portion of their valuable energy in online activities than their study thus students are unable to achieve their academic goals (Christos, 2007). Pakistan has been reported to have 17.5 million internet users, of whom about half use social networking sites (Ahmed & Qazi, 2011). In the surroundings of Pakistan, 1.5 million regular internet users are reported with developing rates of 125.6% between 2002-2004 (Suhail & Bargees, 2006). So, it is evident that internet addiction is a prevailing issue in Pakistan and there is a dire need to study it in our culture.

Internet addiction may arise with low academic achievement, poor family relations, poor social relations, physical and psychological problems in a student's life (Lin & Tsai, 2002). Due to internet dependence a person remains reserve that is the cause of disconnection from family and society (Cardak, 2009). A study reveals that internet can have effects on individuals in four parts such as physical fitness, psychological and social growth, institutional achievement and family relations (Tsitsika et al., 2011).

Aggression can't be clearly defined by the single idea (Ramiez & Richardson, 2001). Normally aggression is observed as being responsive; overt or covert; or physical, verbal, or interpersonal (Werner & Crick, 2004). Aggression is a negative behavior with attribution of harmful aim, action and consequences (Luo et al., 2008). Aggression is a behavior that triggers a person to inflict harm to other persons (Anderson & Bushman, 2002). Usually, emotionally unstable, depressive, and low self-control persons are considered to have aggressive actions (Teng & Liu, 2013; Jones et al., 2009; Verona et al., 2002). Literature provides ample evidence that family life is disturbed by excessive indulgence in online activities. In the similar manner, temperament of such individuals undergoes a subtle transformation in such a way that they become aggressive.

According to previous findings, aggressive behavior might be affected by multiple aspects; such as social aspects including personality (Denson et al., 2012) interpersonal barriers (Ji et al., 2012) and other aspects (Wang & Zhang, 2010). Pervious researches explored internet addiction by the concept of individual's pathological use of internet (Lin & Tsai, 2002), internet dependency (Ko et al., 2007) and problematic internet use (Davis et al., 2002). Many studies have also been conducted about the negative effects of internet on acts and other related issues and discovered that clients with show aggressive and problematic behavior (Morahan-Martin, 2001). An investigation by International Encyclopedia of Social and Behavioral Sciences revealed that gender difference towards aggression are very powerful (Giudice & Marco, 2015). Girls show verbal aggression whereas males show their aggressive behavior in form of physical actions (Hess & Hagen, 2006). The conceptual perspective of internet addiction also indicated negative outcomes. For example, the cognitive-behavioral model of compulsive internet use (Davis, 2001) addressed that availability, and awareness of the internet psychopathologies for example depression and social anxiety, as well as situational indicators providing support of internet usage behaviors, relate to yield maladaptive cognitions like aggression (Charlton & Danforth, 2007). Similarly, displacement theory also addressed that adolescent's internet addiction decreased their real-life social interaction and negatively influenced their well-being leading to increased aggression (Ostovar et al., 2016). According to the General Aggression Model built by Anderson and Bushman (2002), personal factors (traits, attitudes, genetic susceptibility etc.) and situational factors (violent videos or games, provocation, frustration etc.) affect individual aggression through the internal state including emotion, awakening, cognition etc.

Family relation is the connection by blood or marriage. The family is an essential part of society that has become the center of scholars' attention (Sooryamoorthy, 2012). Family relations play an important role to deal with stressful life events (Barker et al., 2007). Individuals who give importance to online relations as compared to real interaction have more chances of internet addiction (Caplan, 2003).

From children's point of view, a family is an organization of social group that looks after the children and plays a central role in social and cultural development (Jhon, 2003). On the other hand, from parents' point of view, family is a reproductive social group that sets out the children's social and cultural goals (Shyam & Radhey, 2009). The aspects of the family system, including the emotional connection between members of the family and ability to show different responses on the developmental and situational stress in family functioning (Huang et al., 2010). Multiple studies highlight the implications of stable family relations and how significant they are not only for children but also for adults. Unstable and inconsistent family relations can adversely impact the emotional and cognitive states of an individual.

The aim of the current study was to find out the impact of internet addiction on aggression, with mediating role of family relations among university students. Many experimental researches have clarified that internet addiction is a dangerous psychological and social phenomenon among persons (Cerniglia et al., 2017; Pontes et al., 2015; Kuss et al., 2014) which eventually leads to poor family relations and aggression (Király et al., 2014). Internet usage is increasing day by day in all over the world. In 2009, 82% people around the world were using internet with spending 5 and half hour on the internet and social media (Wire, 2010). This large amount of internet usage had made people dependent on it.

Although, several studies are related to adolescent's involvement in online activities but few studies have examined the impact of excessive internet use on young adults (Iftikhar & Tariq, 2014; Ghulami et al., 2018). So young adults were chosen as sample for present study. Mental health professionals and teachers emphasized their attention on the phenomenon of internet addiction and recognized it as resulting in an educational and occupational impairment (Kim et al., 2010; Nalwa & Anand, 2003) relational and social difficulties (Seo et al., 2009) economic difficulties (Yang & Tung, 2007) neurological and psychological health issues (Young, 2004). Many studies have suggested that the relationship of internet addiction and aggression must be studied further (Terroso et al., 2022;

Siddiqui et al., 2021; Khatoon et al., 2018; Fengqiang et al., 2016; Ko et al., 2009; Odacı & Çelik, 2013). Researchers in Pakistan have ignored the role of family relations in this context. So, this study focused specifically on investigating the mediating role of family relations between internet addiction and aggression among university students.

Method

Objectives

1. To study relationship among internet addiction, aggression and family relations in university students.
2. To find out the mediating role of family relations in relationship between internet addiction and aggression among university students.
3. To examine gender differences in internet addiction, aggression and family relations among university students.

Hypotheses

1. Internet addiction is positively associated with aggression and negatively related to family relations among university students among university students.
2. Internet addiction and aggression will be higher in boys than girls among university students.
3. Family relations will mediate the relationship between internet addiction and aggression among university students.

Research Design

Cross-sectional research design was used for this study. Sample was approached through purposive sampling technique. Self-report measures were utilized to collect information from participants.

Sample

A sample of 300 university students including both boys ($n = 150$) and girls ($n = 150$) was selected from various universities of Rawalpindi and Islamabad. Participants' age range was from 18 to 35 ($M = 29.09$, $SD = 11.32$) years. Only those students were selected who had at least 14 years of formal education. Students who were

undergoing therapy sessions for any psychological problem were not included in the study.

Assessment Measures

Internet Addiction Test (IAT). Internet Addiction Test (Young, 1998) is comprised of 20 items to identify people as having mild, moderate, or severe level of internet addiction. All the items were marked on a 5-point Likert scale, ranging from 0 = does not apply to 5 = always. Total score on the scale ranges from 20 points to maximum 100. Higher scores indicated high internet addiction and lower scores indicated the low internet addiction. The scale has been reported to have good internal consistency with Cronbach's alpha coefficient as 0.92 (Barke et al., 2012).

Aggression Questionnaire (AQ). This scale consists of 29 items (Buss & Perry, 1992). All the items were marked on a 5-point Likert scale, ranging from 1 = extremely uncharacteristic of me to 5 = extremely characteristics of me. Scale yielded scores on physical aggression (nine items), verbal aggression (five items), anger (seven items) and hostility (eight items). Total score on the scale ranges from minimum 29 points to maximum 145. The scale has been reported to have good internal consistency with Cronbach's alpha coefficient as 0.94 (Lim et al., 2015).

Index of Family Relation (IFR). This scale consists of 25 items (Hudson, 1992). All the items were marked on a 7-point Likert scale, ranging from 1 = none of the time to 7 = all of the time. Total score on the scale ranges from 25 points to 175. Higher scores on IFR indicated good family relations and lower scores indicated poor family relations. The scale has been reported to have good internal consistency with Cronbach's alpha coefficient as 0.95 (Weisskirch, 2009).

Procedure

Study was approved from Institutional Review Board of Foundation University Islamabad and permissions were taken from all the authors to use the relevant instruments. Participants were informed about the research study and were approached at different universities of Rawalpindi and Islamabad. Participants were assured that their provided data will be kept confidential and utilized only for the research purposes. Only those students were selected who showed willingness to take part in study and signed informed consent. Instruments along with demographic data sheet was compiled in the

form of a booklet. Different booklets were generated in terms of sequences of scales in order to counter balance the effect of instruments. Data was collected individually and in groups as well. Participants were told that there are no right or wrong answers and they are required to respond with whatever comes to their mind first. They took approximately one hour to complete the booklet. In the end they were thanked for participation in the study.

Results

Descriptive statistics and alpha reliability coefficients were worked out across various demographic variables. The entire list of measures used in the study had an acceptable range of internal consistency. Bivariate correlation was computed to investigate the relationship between internet addiction and aggression and family relations. To find out gender differences in study variable independent samples *t*-test was used. Further mediating role of family relation was examined through mediation analysis on process macro.

Table 1

Psychometric Properties and Reliability Estimates of Study Variables (N = 300)

Variables	<i>k</i>	α	<i>M</i>	<i>SD</i>	Range		<i>Skew</i>	<i>Kurtosis</i>
					<i>Potential</i>	<i>Actual</i>		
IAT	20	.81	29.75	10.98	20-100	10-49	.09	-1.14
AQ	29	.94	54.45	21.60	29-145	22-90	.02	-1.61
IFR	25	.94	42.56	17.53	25-175	21-71	.32	-1.34

Note. IAT = Internet Addiction Test; AQ = Aggression Questionnaire; IFR = Index of Family Relations.

Table 1 indicated mean, standard deviation, range, skewness, kurtosis and Cronbach alpha reliability of the study variables. The entire list of measures used in the study had an acceptable range of internal consistency (Cronbach's alpha) ranging from 0.81 to 0.94. Results in Table 1 also indicated skewness and kurtosis values in acceptable range i.e., -2 and +2 (George & Mallery, 2010) confirming the normal distribution of data.

Results in Table 2 indicated the relationship coefficients between study factors. Results show that internet addiction has a significant positive relationship with aggression whereas negative relationship with family relations. Results supports the relationship hypothesis.

Table 2

Correlation Coefficient of Internet Addiction, Aggression and Family Relations (N = 300)

Variables	1	2	3
1 Internet Addiction	-	.88**	-.86**
2 Aggression		-	-.91**
3 Family Relations			-

Note. ** $p < .01$.

Table 3 showed that internet addiction is a significant predictor of aggression in positive direction with estimation of 78% of variance in prediction. Results are statistically significant as p value is less than .05. This Table supports the prediction hypothesis between internet addiction and aggression.

Table 3

Internet Addiction as Predictor of Aggression among University Students (N = 300)

Predictor	95% CI						
	<i>B</i>	<i>S.E</i>	β	<i>t</i>	<i>p</i>	<i>LL</i>	<i>UL</i>
(Constant)	2.62	1.68		1.56	.01	- .68	5.93
Internet Addiction	1.74	.05	.88	22.94	.00	1.63	1.84
<i>R</i>	.88						
<i>R</i> ²	.78						
<i>F</i>	10.36						

Results of Table 4 indicated that no significant gender differences in internet addiction, family relations and aggression among university students.

Table 4

Gender Differences in Internet Addiction and Aggression (N = 30)

Variables	Boys (<i>n</i> = 150)		Girls (<i>n</i> = 150)		<i>t</i>	<i>p</i>	95% CI	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			<i>LL</i>	<i>UL</i>
	IAT	30.41	10.73	29.09				
AQ	55.85	21.87	53.06	21.32	1.12	.26	-2.24	7.70
IFR	43.98	17.66	41.24	17.48	1.30	.19	-1.34	6.61

Note. IAT = Internet Addiction Test; AQ = Aggression Questionnaire; CI = Confidence Interval; LL= Lower Limit; UL = Upper Limit.

Table 5

Mediating Role of Family Relations in Relationship between Internet Addiction and Aggression in University Students (N = 300)

Variables	<u>Total Effect</u>				<u>Direct Effect</u>				<u>Indirect Effect</u>			
	<i>B</i>	<i>S.E</i>	<i>t</i>	<i>p</i>	<i>B</i>	<i>S.E</i>	<i>t</i>	<i>p</i>	<i>B</i>	<i>S.E</i>	LL	UL
Internet Addiction	1.74	.04	35.65	.00	.71	.10	7.02	.00	1.02	.09	.84	1.21

Note. B = Un-standardized Regression Coefficients; β = Standardized Regression Coefficients; CI = Confidence Intervals; LL = Lower Limits; UL = Upper Limits.

Table 5 reveals the significant mediating role of family relations between internet addiction and aggression among university students. The mediating role was further validated by the values of Bootstrap Indirect Effect indicating that '0' does not lie between BCCI. Moreover, the value of Sobel test ($Z = 13.28$, $p < .000$) is also significant.

Discussion

The purpose of the present study was to investigate the mediating role of family relations between internet addiction and aggression among university students. The data was collected from different universities of Rawalpindi and Islamabad. All the variables were measured through standardized instruments to attain the goals of the study. The cognitive behavioral model (Davis, 2001) and general aggression model (Anderson & Bushman, 2002) laid the theoretical foundations to explain the conceptual model of the present study including internet addiction, family relations and aggression. Moreover, another concern of this research was to investigate gender differences in all the study variables.

The sample consisted of 300 university students, including equal number of boys and girls. Internet addiction, aggression and family relations were measured by Internet Addiction Test (Young, 1998), Aggression Questionnaire (Buss & Perry, 1992) and Index of Family Relations (Hudson, 1992) respectively. All the instruments were in English. As the sample comprised of university students and had 14 years of formal education, they did not report any difficulty in understanding the language of the scales. Students were approached at university campuses and data was collected in person. Only those

students were given the item booklet who met the inclusion criteria and told that they were currently not undergoing therapy sessions for any severe psychological problem. The students were assured that their provided information would be kept confidential.

Findings of previous studies reveal that internet addiction is very common among university students. The plausible consequences linked to internet addiction have been reported as family relations and aggression. Davis (2001) originated the idea on his cognitive behavioral model that problematic internet use is the outcome of wrong thinking, feelings, and behavior that further leads to impairment in family relations and aggression. The hypothesis of the study that internet addiction will be positively related to aggression among university student was supported by data. The assistance of this statement is displayed in bivariate correlation and regression results and are consistent with the prior studies.

The substantial link between internet addiction and aggression has also been explained by additional studies (Sahin, 2014). Hazardous insights might cause due to excessive internet usage which is additionally connected with actions that keep up with or reinforce the maladaptive reactions like aggression. In previous researches it was found that internet addiction has a significant positive relationship with aggression (Mehroof & Griffiths, 2010; Polman et al., 2007). Net dependency has a strong effect on aggression (Fisoun et al., 2012). A study revealed that internet addiction is a positive predictor of aggression (Fengqiang et al., 2016).

Another hypothesis was that internet addiction has a negative relationship with family relations among university students and results revealed internet addiction as having significant negative relationship with family relations. Regression analysis also showed internet addiction as significant negative predictor of family relations. Previous studies have also found that net dependence is problematic as it causes family disturbance and isolation (Fisher & Geldin, 2015). According to other research findings, family relations had an inverse association with internet addiction (Ko et al., 2007; Yen et al., 2007).

It was hypothesized that internet addiction and aggression will be higher in boys than girls among university students but it was not supported by findings of the present study. Earlier studies revealed that boys are more aggressive than girls (Shrivastava et al., 2018). According to the findings of another study aggression is higher in boys than girls (Copping, 2017). However, gender differences were found to be nonsignificant in the current study. This clearly suggested that both girls and boys in universities were equally involved in using

internet for longer periods of time. Similarly, girls were found to be as aggressive as boys in universities. Conclusive evidence regarding gender difference was not found on family relations as in previous research scholars were unable to originate any contrast across genders in terms of family relations (Hall & Parsons, 2001). Thus, it was decided to explore it in this study but results also yielded non-significant differences in this context.

Pakistan is a collectivistic society and family relations are considered pivotal. Therefore, it was hypothesized that family relations will mediate the relationship between internet addiction and aggression. Findings supported this hypothesis and family relations came out as a significant mediator between internet addiction and aggression among university students. In Pakistan and other eastern countries family relations are considered much more important than other relationships. Hence, the findings could be explained in cultural context; internet addiction led to disturbed family relations which in turn increased aggression. As students were investing an exaggerated amount of time on internet, they were unable to give time to family members. This was against their cultural values and as eventually caused more aggression among university students.

Limitations

Sample was collected from different universities of Rawalpindi and Islamabad and thus the finding of the current study cannot be generalized to overall population of Pakistan. Moreover, cross-sectional research design was used in this study; a longitudinal design could provide more meaningful and reliable results. Moreover, in later studies, experimental or qualitative methods can be utilized. Current study focused on internet addiction as a cause of disturbed family relations, further studies can be conducted to capture the other reasons for diminished family relations.

Implications

The current study was designed to find out the mediating role of family relations between internet addiction and aggression among university students. In current scenario, the prevalence of internet addiction amongst youth with different age groups is extremely high. Internet addiction not only effects students' mental health but could also have an effect on their everyday activities and family life. Due to internet addiction a person can't control his/her temperament which leads to broken relations. Several studies have found that internet

dependence could prompt numerous problems, hence diminishing the time spend in excessive internet usage could improve family relations and increase the mental health capacity. Subsequently, for the purpose spreading knowledge among people, training programs like mindfulness can be masterminded by clinicians to assist individuals with upgrading their family relations by restricting internet dependency and turning out to be more versatile in reality other than in the universe of the internet. In Pakistan, family relations are much important so the outcomes of the study will be beneficial in developing effective awareness programs and interventions specifically for improving family relations.

Conclusion

The present study showed a significant positive relationship between internet addiction and aggression among university students. It also showed that internet addiction was equally existing in both male and female university students. Gender differences were found to be non-significant on aggression and family relations. Moreover, family relations came out as a significant mediator between internet addiction and aggression among university students. The current study will provide an awareness of the adverse consequences of internet addiction which will be helpful for professionals and also for students to improve their family relations and mental health.

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