THE IMPACT OF INTERNET ADDICTION ON AGGRESSION AND LONELINESS IN THE UNIVERSITY STUDENTS OF SIALKOT

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Abstract

This research explored the impact of internet addiction on aggression and loneliness in the university students from Sialkot, Pakistan. Four hundred and twenty-three university students, ranging from 18 to 26 years, participated in the study by responding to the Internet Addiction Test (Young, 1998), UCLA Loneliness Scale (Russell, 1996), and Buss-Perry Aggression Questionnaire (Buss & Perry, 1992) along with a demographic form and consent form. Results from the descriptive analysis showed that a significant relationship between internet addiction, aggression, and loneliness existed. The findings of t-test showed a significant difference in the level of internet addiction in males and females. And ANOVA showed that a significant difference existed between aggression levels in university students with regards to their age. Also, it was determined that a significant difference existed for levels of internet addiction and aggression in university students with regards to their education level.

Keywords
Internet addiction, aggression, loneliness, university students

1. Introduction

The internet, at present, has become a commodity. It is used in social, educational, and occupational settings and provides an abundance of knowledge on anything that is required. Due to this students, nowadays, tend to use the internet for their studies

as well as their entertainment. They use it as a tool to relieve themselves of the stress (Davis, 2001) caused by academic pressure. This, more often than not, leads to increased dependency on the internet because of which most students become addicted to using it, and that addiction leads to the development or results in an increase in the amount of aggression and loneliness in them. Social Learning Theory (Bandura, 1977) explains the workings behind the link between internet addiction and aggression. In youth, an increased level of aggression was seen due to increased internet usage (Ko *et al*., 2008) as aggression and internet addiction disorder tend to be present side by side, i.e. if aggression is present in a person there is an increased chance of them developing internet addiction disorder, and if a person has internet addiction disorder, it is very likely for them to develop aggression. After viewing violent shows or playing violent games and accessing immoral sites it was seen that the youth displayed more aggressive behavior than before (Kahn & Kim, 2014). Huesmann (1982) builds on the Social Learning Theory by Bandura (1977) and states that aggressive behavior may be acquired by people through indirect or direct observations and Anderson & Bushman (2002) explain aggression in terms of a person's personality and the variables surrounding the person in terms of the situation they are in. This addiction causes and is also contributed to by the already existing loneliness in students (Cacioppo, 2002).

1.1. Statement of the Problem

Odaci & Celik (2013) emphasized the correlation between internet addiction, aggression, and loneliness stating aggression develops as a result of increased maladaptive usage of the internet and that internet addiction often acts as a predictor of loneliness. Students are more vulnerable to internet addiction due to stress (Davis, 2001) which affects their cognitive thinking and as a result leads to poor academic performance, more anxiety, and stress (Zenebe *et.al*., 2021) that cycles them back to the internet for relief.

This study was done to shed light on the impact of internet addiction on the levels of aggression and loneliness shown by University students of Sialkot, Pakistan.

1.2. Objectives of the Study

- To explain the relationship between internet addiction, loneliness, and aggression.
- To investigate whether internet addiction is correlated to aggression.
- To explore whether the internet is correlated to loneliness.
- To ascertain whether aggression and loneliness are interlinked.

1.3. Hypotheses

The following hypotheses were generated for this research:

- There would be a significant relationship between internet addiction, aggression, and loneliness among students.
- There would be a positive correlation between internet addiction and aggression in students.
- There would be a positive relationship between aggression and loneliness among students.

- There would be a difference between internet addiction, aggression, and loneliness among university students with regard to their age.
- There would be a difference between internet addiction, aggression, and loneliness among university students with regard to their gender.
- There would be a difference between internet addiction, aggression, and loneliness among university students with regard to their education level.

1.4. Limitations of the Study

- It only focused on two variables i.e. loneliness and aggression that were mostly observed in students (which became the cause behind this research) but could pave a way for further research on the effects of internet addiction.
- As it was conducted during the lockdown due to the pandemic, the data were taken through an online survey (self-report) and several tests had to be discarded as they were not filled properly.
- The sample size was taken from a limited number of universities (University of Sialkot, University of Management and Technology Sialkot, GC University Sialkot, and Foundation University Sialkot) so it might not represent the entire student population of Sialkot.

- The research may have been more conclusive with a larger sample size. The sample was collected through convenience sampling due to which it included a larger number of female students as compared to males. Students from all the educational levels could not be included in the study.

1.5. Significance of the Study

- This study could prove useful in understanding the reason behind students becoming addicted to the internet along with the effects of internet addiction on them.
- It will be helpful for both the teachers and the students in Pakistan as comprehension of a problem is the first step in finding a solution.

2. Literature Review

Periman & Malamuth (2016) conducted research on the relationship between loneliness and aggression. It was seen as a result of the study that lonely individuals tend to be more hostile and aggressive towards others. They are more likely to evaluate other people in a negative light and respond aggressively to them. Odaci & Celik (2013) studied the correlation between internet addiction, loneliness, and aggression alongside shyness, narcissism, and self-perception. The results determined a positive correlational relationship between internet addiction, aggression, and shyness and that shyness and aggression are often indicators of internet addiction. While loneliness, self-perception, and narcissism were seen not to be indicators of

internet addiction, they often developed along with problematic internet usage. Ozdemir *et al.,* (2014) evaluated positive and negative correlations between depression, loneliness, low self-control, and internet addiction in the youth of Turkey. The outcome of the study stated that people use the online activity as a tool to regulate their low moods and that loneliness has a strong relationship with internet addiction. Erol (2019) examined loneliness and internet addiction in college students relating to relevant demographic variables. The outcome determined that participants that were younger felt lonelier than older participants, participants in lower classes felt lonelier than those in higher classes and students' use of social media increased their internet addiction. Whang *et al.,* (2003) studied the relationship between youth addicted to the internet and loneliness along with depression and compulsivity in them. The outcome indicated a significant link between internet addiction and loneliness. It stated that internet addicts tended to access the internet whenever they felt stressed or depressed. It also showed that they displayed dysfunctional social behavior and that they try to escape reality through the internet, more so than non-addicts. Sahin (2014) examined internet addiction and aggression in university students through the use of correlation and structural equation model analysis. The outcome showed no relation between the two variables. Khatoon *et al.,* (2016) studied internet addiction and aggression among teenagers. The outcome indicated that internet addiction increases the levels of aggression in teenagers and was thus, positively correlated with aggression.

3. Methodology

This research design used by this study was correlational. During the first phase, numeric data was collected through a survey online.

3.1. Research Variables

In this study, internet addiction was the independent variable with aggression and loneliness as the dependent variables. These three were the main variables of this research.

3.2. Participants

The present study consisted of 423 participants comprising of 289 females and 134 males from various universities in Sialkot, Pakistan in order to determine internet addiction within them along with aggression and loneliness. They were selected from different universities through a convenience sampling technique. Their age range was from 18 through 26 years.

3.3. Measures

The participants in this research responded to three self-report questionnaires through an online survey, along with the consent and demographic form. The online survey was conducted through the use of Google forms. The questionnaires were in the English language. The three measures and the consent plus the demographic form include:

3.3.1. Consent Form and Demographic Form

The consent form was used to take the preceding approval of the participants. The demographic form was used to take information regarding the personal, occupational, and professional details of the participants. Items such as the participant's age,

gender, and educational level were included in the demographic form.

3.3.2. Internet Addiction Test (IAT) (Young, 1998)

The Internet Addiction Test (IAT) is a 20 item self-report test developed by Dr. Kimberly Young (1998) used to assess the level of internet dependency in youth and adults (Kimberly, 1998). It measures internet addiction by determining the compulsive use of the internet in internet addicts keeping in mind compulsivity, escapism, dependency, and use in personal, social, and occupational settings. It uses a 0 (less extreme) to 5 (extreme) point Likert scale for measuring behavior. And takes 5 to 10 minutes to be completed when self-administered. It has a high validity with an internal consistency of 0.90-0.93 and good test reliability of 0.85. The questionnaire is in English and free to use in research.

3.3.3. UCLA Loneliness Scale (Version 3) (Russell, 1996)

This scale was developed by the psychologist Daniel Russell in 1996 (Russell, 1996). Version 3 of the UCLA Loneliness Scale is a revised 20 item scale that measures how a person feels disconnected or isolated from others. Rating is done on a scale from 1 (Never) to 4 (Often). It takes 3 to 5 minutes to be completed. UCLA (version 3) shows a validity of 0.89 and good reliability of 0.73. The scale is in English and free to use in research.

3.3.4. Buss Perry Aggression Questionnaire (BPAQ) (Buss & Perry, 1992)

The Buss Perry Aggression Questionnaire (BPAQ) is a 29 item scale developed by psychologists, Arnold H. Buss and Mark Perry in 1992 (Buss & Perry, 1992). It measures aggression in people using four factors; physical (9 items) and verbal aggression (5 items) and anger (8 items) and hostility (8 items) (Buss & Perry, 1992).

3.4. Procedure

To acquire the main data, subjects were recruited from different universities of Sialkot. Proper permission was taken from the institutes for data collection. The administration was done online. Before taking consent at the beginning, the participants were debriefed of the main purpose of this study and assured that their responses would not be shared with any third party outside of the research. Participation of the students was on a voluntary basis and each student had the choice to willfully discontinue as and when desired. Participants were given general instructions online in written form. The online survey was administered and data **were** collected over a period of 12-weeks from all participants. The data were collected in 2021.

4. Results

4.1. Demographic Analysis

In this study, the data of 423 participants was collected and used. The data were collected through an online survey as most of the universities during the time of data collection were on the online mode of education.

Table 1 shows the demographic characteristics of the participants as well as the distribution of observations based on the selected variables along with the mean and standard deviation of the variable 'age'. It has been shown that the age range 18 to 20 has been selected by 99 participants and

the other ranges 21 to 23 and 24 to 26 have been selected by 215 and 109 participants respectively. For the variable education, 154 participants selected MS as their education level, 267 participants selected BS, 1 participant selected

ADP, and 1 selected DPT. For the variable gender, 134 participants selected male and 289 selected females out of the total of 423 participants.

4.2. Relationships between Internet Addiction, Aggression, and Loneliness

One of the aims of this study was to examine the relationship between internet addiction, aggression, and loneliness. For this purpose, descriptive analysis was used, the results of which are shown in Table 2.

Table 1: Demographic characteristics of Participants

Variables	F (%)	M (SD)
Age		2.02 (.70)
18 to 20		99 (23.4)
18 to 20		99 (23.4)
21 to 23		215 (50.8)
24 to 26		109 (25.8)
Education		
MS		154 (36.4)
BS		267 (63.1)
ADP		1 (0.2)
DPT		1 (0.2)
Gender		
Male		134 (31.7)
Female		289 (68.3)

Table 2: Correlations between internet addiction, aggression, and loneliness.

	IAT	BPAQ	UCLA
IAT	---	.305**	-.004
BPAQ	.305**	---	-.084
UCLA	-.004	-.084	---

**p> .01

It shows the correlation between the variables' internet addiction, loneliness, and aggression. As observed in the table, Internet addiction is positively correlated with aggression (r= .305**), but negatively correlated with loneliness (r= -.004). Along with that, it is seen that aggression is negatively correlated with loneliness (r= -.084) and loneliness is negatively correlated with both internet addiction (r= -.004) and aggression (r= -.084).

4.3. Gender differences in Internet Addiction

The objectives of the study also involved exploring whether or not differences would exist in internet addiction, aggression, and loneliness with regards to the demographic variables of the study i.e. age, gender & education level. To determine if a difference existed in internet addiction, aggression and loneliness due to gender, t-test was used. The results of which are displayed in Table 3.

Table 3: T-test to determine gender difference in internet addiction, aggression, and loneliness.

Variables	Male		Female		t (423)	P	UL	LL	Cohen's
	M	SD	M	SD					
IAT	56.39	18.38	52.53	14.99	2.28	.000	7.17	.53	.23
BPAQ	90.18	13.99	92.38	15.44	-1.40	.207	.89	-5.29	.14
UCLA	50.83	10.17	50.40	10.45	.401	.526	2.56	-1.69	.04

Note. M=mean; SD=standard deviation; LL=lower limit; UL=upper limit; P=point of significance; t= t-score

In Table 3, the t-test shows that there is a significant difference between males and females with respect to the levels of IAT ($t= 2.28$, $p= .000$) only. The mean and standard deviation values for IAT are slightly less in females (M=52.53, SD=14.99) than the values obtained by males (M=56.83, SD=18.38) with an effect size of Cohen's $d= .23$ which is a small effect size. Analysis shows that levels of IAT are a bit higher in males. The mean scores for BPAQ are slightly higher for females while mean scores of UCLAs are a bit less in females as compared to the males but no significant difference is found between these two groups as indicated by p values of .2 and .5 respectively.

4.4. Analysis of variance between Age and Aggression

Similarly, in order to determine if a difference existed in internet addiction, aggression, and loneliness with regards to age, one-way analysis was used. The results of which can be seen in Table 4. It was found that a significant difference existed only between the aggression levels of different age groups present in the study. There was no significant difference found between internet addiction and loneliness with regards to age. In Table 4 results of the ANOVA were found to be significant $F = 3.49$, $p = .03$ which means that there is a difference in levels of aggression among university students with respect to their age groups. Post hoc tests further suggested that there exists a significant difference between different age groups and their levels of aggression.

4.5. Analysis of Variance between Education Level, Internet Addiction, and Aggression

Additionally, in order to see if a difference existed in internet addiction, aggression, and loneliness with regards to education levels, one-way analysis was used. The results of which can be seen in Tables 5 and 6. It was found through the results

that a difference existed in internet addiction and aggression with regards to education level, but no significant difference existed for loneliness.

In Table 5 the results of the ANOVA were found to be significant $F = 3.55$, $p = .01$ which means there is a difference in levels of internet addiction among university students with respect to the education levels. Post hoc tests further suggested that there exists a significant difference between different education levels and the amount of internet addiction in the university students belonging to those education level.

Table 4: One-way analysis of variance between Age and Aggression (N= 423)

Source	Df	SS	MS	F	P
Between groups	2	1558	779	3.49	.03
Within groups	417	92952	222	-	-
Total	419	94510	-	-	-

*Note. **$p < .01$; SS = sum of squares; df = degree of freedom; MS = mean square*

Table 5: One-way analysis of variance between Education Level and Internet Addiction (*N=423*)

Source	Df	SS	MS	F	P
Between groups	3	2755	918	3.55	.01
Within groups	418	107953	258	-	-
Total	421	110708	-	-	-

*Note. **$p < .01$; SS = sum of squares; df = degree of freedom; MS = mean square*

Table 6: One-way analysis of variance between Education Level and Aggression (*N=423*)

Source	Df	SS	MS	F	P
Between groups	3	3249	1083	4.93	.00
Within groups	416	91260	219	-	-
Total	419	94510	-	-	-

*Note. **$p < .01$; SS = sum of squares; df = degree of freedom; MS = mean square*

In Table 6 the results of the ANOVA were found to be significant $F = 4.93$, $p = .00$ which means there is a difference in levels of aggression among university students with respect to their education

levels. Post hoc tests further suggested that there exists a significant difference between different education levels and the amount of aggression in the university students belonging to those education levels.

5. Discussion

This research was conducted to understand the impact of internet addiction on aggression and loneliness in University students of Sialkot, Pakistan. The aims of the research involved explaining the relationship between internet addiction, loneliness & aggression, investigating whether and if so how internet addiction is linked to aggression, exploring whether internet addiction is connected to loneliness and whether aggression and loneliness are interrelated. This was done in order to get a better grasp of the "how" and "why" behind the surge of internet addiction, aggression, and loneliness amongst University students in recent times. These aims were also studied with regards to age, gender, and education level of the students. This study assumed that there will be a substantial link between internet addiction, aggression, and loneliness amongst students. Results approved this hypothesis and showed that a substantial relation between internet addiction, aggression, and loneliness indeed exists. This proves to be consistent with the studies of Odaci & Celik (2013) that showed there existed a positive correlation between internet addiction and aggression and that loneliness formulated as a result of internet addiction. This can be seen in the results section of the article in Table 2, which shows the correlational relationships between the three variables. This research also presumed that a

positive correlation between internet addiction and aggression existed in students. It is consistent with the previous studies done on these variables that showed high correlation between internet addiction and levels of aggression (Ko *et al*. 2008; Kahn & Kim. 2014) and can be seen in Table 2 of the results section which shows internet addiction being positively correlated with aggression (r=.305**). Another postulation of this research emphasized a positive relationship between internet addiction and loneliness in students. Results indicated that internet addiction was negatively correlated with loneliness (r=-.004) as seen in Table 2. It is inconsistent with most of the previous studies (Ozdemir, 2014; Erol, 2019) done on these variables but consistent with one relevant study (Odaci & Celik, 2013) that stated internet addiction was not correlated positively with loneliness, but was, however, a predictor of loneliness. Furthermore, this study hypothesized a positive relationship between aggression and loneliness among students. Results indicated that both aggression (r=-.084) and loneliness (r=-.084) are negatively related to one another, which can be seen in Table 2. It is inconsistent with the previous studies (Periman & Malamuth, 2016) done on the aforementioned variables that stated that lonely people tend to be more aggressive towards others. This inconsistency may be a result of the limited size of the sample that was taken. Along with that, it was theorized that a difference existed between internet addiction, aggression, and loneliness among university students with regard to their age. One-way analysis of the data showed that a definite difference existed only in the levels of

aggression shown by university students with regards to their age which is consistent with the study of Liu *et al.* (2013) that discusses different levels of aggression in different age groups. This is shown in Table 4 of the results section of the article. Moreover, a difference between internet addiction, aggression, and loneliness among university students with regard to their gender was postulated. Table 3 of the results section shows that a significant difference exists between levels of internet addiction shown by females and males. Female students showed a lesser level of internet addiction as compared to the male students which is consistent with the study of Liang *et al.* (2016) that showed that males tend to have a higher rate of internet addiction as compared to females. Lastly, it was hypothesized that a difference between internet addiction, aggression, and loneliness in university students existed with regard to their education level. Tables 5 and 6 of the results section show that significant difference exists between internet addiction and aggression of students relating to their education level which is consistent with the studies conducted by Erol (2019) that stated students belonging to different educational levels underwent varying levels of internet addiction and Khatoon *et al.* (2016) that concluded that aggression levels of students are affected by internet addiction. There are various studies conducted on the variables internet addiction, aggression, and loneliness with and without regard to university students. However, there is a significant lack of such studies done in Pakistan specifically in relation to the students belonging to one particular city. This study was conducted in order for there to be research that is culturally relevant to the students studying in Pakistan.

6. Conclusion

The overall findings of this research gathered through surveys and questionnaires suggest that internet addiction has a substantial effect on aggression and loneliness in university students. The results showed that internet addiction is interlinked with aggression and loneliness and that the levels of internet addiction vary with regards to gender, age, and education level. It was also found that student aggression increased with the level of internet addiction shown by them.

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