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Internet Addiction and Cyberbullying: Prevalence and Relationshipamong University Students

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Abstract- With the advancement of technology specifically with the use of the internet and social media certain issues got the attention of researchers. These issues should be examined in youth so that to have a better understanding and development of remedial strategies. The present study was descriptive and relational that was intended to measures the prevalence and relationship of internet addiction, Facebook addiction and cyberbullying among university students of Pakistan. A convenient sampling technique was employed to select the sample (*N* = 1000) of students from different universities. Young's Internet Addiction Test (IAT: Young, 1998) and Online Victimization Scale (Tynes et al, 2010) were used to measure the constructs.Results demonstrated that the prevalence of Internet addiction and cyberbullying was 23.8 % and 24.6 % respectively across the selected sample.The prevalence rate of males was found to be higher on all variables. Correlational analysis revealed a significant positive correlation between Internet addiction and cyberbullying.

Keywords: Prevalence, Internet addiction, cyberbullying.

I. INTRODUCTION

During the last two decades, a rapid advancement has been observed throughout the globe that exerted an immense impact on various spheres of life. The Internet has become an inevitable part of education, business, communication, and certain fields of human life. It has brought both blessings as well as curses for individuals and societal life. The extreme use of the internet has been realized as a problematic behaviour in the normal routine and is labelled as internet addiction. Although some of the researchers debate that the term "addiction" might be applied only those cases that involve dependence upon chemical substances (Bratter& Forrest, 1985) but on the other hand researchers claim that "addiction is a psychological and physical inability to stop consuming a chemical, drug, activity, or substance, even though it is causing psychological and physical harm"(Felman, 2018).

It perceived that the criteria of addiction, in a broader context, is not confined to substance use only, rather certain behaviours and activities can be comprehended within the same context (Hatterer, 1994). There are many behaviours and happenings which are found to be associated with addiction. People are said to be "addicted" to eating certain things, gambling, smoking, compulsive shopping, excessive work, playing online or on-ground games, and sex (Truan, 1993). Various forms of addiction or dependency on drugs has been centre of attention of researcher since many decades but recent research, such as that conducted byÇavuşandAyhan (2014), examined the computer addiction in adolescents and found that boys were higher on computer addiction than girls.

Internet addiction is characterized by excessive or inadequately controlled preoccupied activities, urges or behaviours regarding the use of computer and internet access that lead to psychological impairment or distress among adolescents and adults (McNicol, &Thorsteinsson, 2017). Internet addiction disorder (IAD) is conceived as an impulse control disorder that closely resembles pathological gambling and does not involve exclusive use of an intoxicating drug. Originally IAD was suggested as a disorder by Goldberg (1995) in a satirical hoax. The internet has evolved into a 'social technology' that is continually challenging researchers to examine its effects on numerous facets of social life (Kraut et al., 1998). The massive growth of the internet over the past decades has changed the profile of the "computer addict" (Siste et al., 2019; Young, 1996). Internet is a valuable and attractive source for people because of instant communication and access to facts, information, knowledge, and entertainment. It has become an

environment that could be abused by virtually anyone, irrespective of their interest in ideas, science and technology (Griffiths, 1998).

Internet addiction has employed a great progressive impact on individuals' psychological wellbeing and social lives besides some other negative aspects of human life like Facebook addiction and cyberbullying. Bullying was previously discussed as repeated overt aggression to harm others but in recent years a new form of bullying known as cyberbullying has attained the attention of psychologists, social scientists, educationists, and researchers. It has now become a wide concern of parents and educationists because of its negative impact on academic performance and interpersonal relations. Particularly adolescents and young adults in university settings have been experiencing or exposed to cyberbullying. Usually, they are hesitant and are not a good reporter of the situations embarrassing to them as a result they experience distress that drastically affects their academic and social life. Both internet addiction and cyberbullying are electronic sicknesses that are surmised to be closely linked, it is therefore recent researcher are paying serious attention to this phenomenon.

II. Internet Addiction and Cyberbullying

Cyberbullying can also be referred to as electronic bullying or online social curse through numerous means e.g. email, instant messaging throughout messenger like Facebook, WhatsApp, WeChat or chat room conversations, eye-catching gaming websites, pager messages, and digital messages or images sent through android devices (Belsey, 2004; Kowalski, et al., 2007). This new phenomenon has been defined as "an aggressive, intentional act carried out by an individual or group, using electronic forms of contact, repeatedly and actively against a victim who has felt difficulty in defending him or herself" (Smith et all, 2008). Cyberbullying is primarily used to gain control, power, and dominance over others via instant messaging, or social networking sites like Facebook, Twitter, WhatsApp, My Space etc. (Beran& Li, 2005).

A direct relationship between problematic internet addiction and cyberbullying is studied a little. Nartgün and Cicioğlu (2015)foundproblematic internet use as a strong predictor of cyberbullying in vocational school students. Adolescents are prone to be bullied online when they tend to gain sympathy from others which they miss from their family life. They also intend to make cyberbullying to others to prove themselves stronger and dominant but the situation sometimes does not favour them and as a result, they become victims as well. Both Internet addiction and Cyberbullying have been found positively correlated with psychological and behavioural problems like depression, anxiety, hostility etc. Some empirical studies have demonstrated that cyber victimization is linked with depression and various victims of cyberbullying report higher level of depressive symptoms than their non-victims counterpart (e.g. Baker &Tanrıkulu, 2010; Ybarra, 2004). In the same vein,several studies are displaying the positive relationship between Internet addiction and cyberbullying (e.g.Qudah, 2019; Jang et al. 2008; Kim et al. 2006). Although there is a dearth of studies demonstrating a direct relationship between both but keeping in view all the above discourse it is supposed to be safe to infer that a positive relationship between internet addiction and Cyberbullying exists.

III. Prevalence of Internet addiction and Cyberbullying

Fewer studies are addressing the prevalence of Internet addiction in adolescents and their estimates widely vary across countries. New instruments have recently been developed to assess the constructs and are used in various studies to find out prevalence among students. For example using Young's Internet Addiction Test (1999), 1.6% of Finnish adolescents (Kaltiala-Heino, Lintonen, &Rimpela, 2004) and 1.5% of Greek (Kormas, Critselis, Janikian, Kafetzis, &Tsitsika, 2011) were found to be an addict of using the internet; using a modified version of the Minnesota Impulsive Disorders Inventory, 4% of US high schoolers were recognized as Internet addict (Liu, Desai, Krishnan-Sarin, Cavallo, & Potenza, 2011). These results are comparable to higher prevalence rates that have been reported in South-East Asian countries (e.g., Taiwan, Singapore, South Korea, and China). For example, using Young's Internet

Addiction Test (1998b) 8% of adolescents in China (Cao, Sun, Wan, Hao, & Tao, 2011), 10.7% of adolescents in South Korea (Park, Kim & Cho, 2008), and 24.4% in Taiwan (Lin, 2020) were found to be addicted to using the internet.

Moreover, prevalence estimates in youth psychiatric settings are reported to be considerably higher, which is not surprising when engrossing the whole environment that has surrounded individuals at homes, educational institutes, and everywhere they go about. The use of online games and social media websites have occupied individuals more than that they think of it. Online games are specially designed in an additive and lucrative nature to engage users for longer and longer time. For instance, the internet addiction prevalence among minors using the assessment of Internet and Computer Game Addiction (Wölfling, Müller, &Beutel, 2010) was found to be 11.3% in Germany (Müller et al., 2012), and 11.6% of adolescent outpatients in Latin America were categorized as being internet addicts (Liberatoreet al., 2011).

The use of social networking sites is still rapidly growing and rising in popularity and this technology have become available to adolescents and children easily. This situation has enhanced the probability of internet addiction and cyberbullying among youth. They are gradually getting away from physical games and social activates rather their most of the time is reserved internet. There are exposed to unsafe and offensive material because most social networking and gaming sites site is not strictly following the content security policy. Database and entertainment sites are also of the interest of students but these too increase the vulnerability of addiction and bullying. Vanderbosch and Cleemput (2009) in a survey study of 636 primary and 1416 secondary school students found that 11% of individuals reported that they considered themselves to be a victim, 18% of those stated that they had experienced Cyberbullying, and 27.9% described that they had witnessed the bullying but decided to do nothing about it.

Some more studies explored the prevalence of Internet addiction and an increasing number of the victims exposed to bullying while using the internet (e.g. Wright, Burnham, Inman, &Ogorchock, 2009). Moreover, Şimşek et al. (2019) found another aspect that the individuals who were bullied later on turned to be involved in bullying others. Students having bullying experience may also be vulnerable to have an increased risk of suicidal behaviour. It is observed that children gradually find access to electronic devices and the internet so it is also supposed that the rate of bullying and Internet addiction is enhanced with advanced age or grades. As the internet user becomes familiar with the whole environment and learns more about the uses and abuses of the internet there is the probability that the cyberbullying behaviour would decline. Although there not sufficient evidence in this context yet Wright, Burnham, Inman and Ogorchock (2009) noted that Cyberbullying seems to be increased in the elementary years, reaching its peak in middle school and gradually declines during high school. Wang, Iannotti and Nansel (2009) and Calvete et al. (2010) revealed that there is a significant effect of ethnicity on cyberbullying e.g. Hispanic students were more likely to be physical bullies but were also more likely to be cyberbully-victims than White students.

Internet is a modern technology which diminished the geographic and cultural boundaries. People use it for different purposes i.e. communication, entertainment, information, education and also for escape purpose. But some people use it so excessively that they become addicted and such persons are increasing day by day with the advancement and spread of technology.

With the excessive use of the internet social media has become an important part of our life especially for youth. But the problem is this that the excessive use of social networking sites is creating an addiction in the life of its users. This addiction is causing different psychological and social problems such as depression, anxiety, loneliness, lack of self-esteem and poor social interaction as evident from the literature review. Moreover with the excessive use of social media and technology the chances of being a victim of cyberbullying among youth also increasing tremendously. Unfortunately, no proper attention has been given to this serious issue in Pakistan. Very few researches have been conducted to explore the matter. Studying Internet addiction in a developing country like Pakistan is very important because the young generation of Pakistan mostly involved in using the internet and their chances of being addict are more than the people of any other age group. The present study is planned to explore the prevalence rate among university students besides finding out the relationship between Internet addiction and Cyberbullying. It is hypothesized for the current study that “there would be a significant positive correlation between internet addiction and cyberbullying”.

IV. METHOD

Sample

Purposive convenient sampling was used to draw the sample of University students (N = 1000), which were further divided into males (n = 295) and females (n = 705). The sample was taken from the different Universities of Pakistan viz., University of Sargodha, GC University Lahore, G.C. University of Faisalabad, and Quaid-i-Azam University Islamabad. The age of participants ranged from 17 to 29 years and all participants were internet users. The sample was also categorized based on faculty i.e. natural sciences (n = 157) and social sciences (n = 843). A survey research design was used to execute this study.

Instruments

In this study, two self-administered questionnaires were administered to collect initial information about variable understudy from students. The demographic sheet was also attached with the scales.

Internet Addiction Test. Internet Addiction Test (IAT) developed by Young (1998) will be used to measure the construct. IAT comprises 20 questions designed to identify people from mildly to severely addicted to the Internet. The response is anchored on 5 points Likert type rating scale from strongly agree to strongly disagree. The total score range is from 20-100. IAT has six factors i.e. Salience which consists of 5-items; Excessive use is factor 2 of IAT and it consists of 5-items; Neglect of Work is factor 3 and it consists of 3-items; Anticipationis factor 4 consists of 2 items; Lack of Control is factor 5 consists of 3-items; Neglect of Social Life is factor 6 consists of 2-items. Chronbach's alpha coefficient for all the six subscales ranges from 0.54 to 0.82. The current study operationalized scores of the Internet Addiction Test as an index of Internet addiction.

Online Victimization Scale. Online Victimization Scale (Tynes et al, 2010) was used to measure the pertinent constructs of the present study. Scale is a 21 item scale that measures online victimization in four domains: sexual, general, vicarious online racial discrimination, individual racial discrimination and. It is Likert type scale range from 1 to 6. Reliability coefficients reported by the authors ranged between .66 to .87 for subscales. For the present study score, Online Victimization Scale has been operationalized as the indices of cyberbullying and its constructs.

Procedure

Participation in the present research was voluntary where participants were directly approached in their respective departments by the researchers. The questionnaires were distributed by hand among them, in different Universities of Pakistan. Participants were made aware of ethical concerns and assured of the confidentiality of data and information provided by them. Participants were also assured that all their answers would remain strictly anonymous and also that they have the right to withdraw from participation at any time. They were also briefed about how to respond to items. Total 1500 response forms were disseminated and 1209 response forms were received back with a response rate of 80 %. Participants were cordially thanked by the researcher while receiving data from them. All the received questionnaires were thoroughly reviewed by the researchers and 191 of them were discarded due to random responses, excessive missing values and incomplete demographic information. The remaining 1000 response forms were finalized for analysis.

V. RESULTS

The obtained data from participants were analyzed in the statistical package for social sciences (SPSS) 17 V. Results are shown in the tables.

Table 1

Frequency and percentages of participants (*N = 1000)*

Demographic variables	*f*	%
Gender		
Male	295	29.5
Female	705	70.5
Family System		
Nuclear	575	57.5
Joint	425	42.4
Department		
Natural sciences	157	15.7
Social sciences	843	84.3
Education		
BS	526	52.6
MA/MSc	437	43.7
MPhil	37	3.7
Age		
Adults (17-20 years)	440	44
Adults (21-25 years)	528	52.8
Above 25 years	32	3.2

Table 1 shows frequency percentage of students with respect to their Demographic information. Results indicated that females (*f* = 705, 70.5*%*) were more in number than males (*f* = 295, 29.5*%*).Participants belonging to nuclear family system (*f* =575, 57.5*%*) were more in number than students of extended family system (*f* = 425, 42.5*%*). Students of social sciences departments (*f* = 843, 84.3*%*) were more in number than students belonging to natural sciences departments (*f* = 157, 15.7*%*). Students of BS (*f* = 526, 52.6*%*) were more in number than students of MA (*f* = 437, 43.7*%*), and MPhil (*f* = 37, 4*%*).

Table 2

The overall prevalence of Internet Addiction and Cyber-bullying among Participants Based upon their Demographic Characteristics (N= 1000)

Table 2 shows the prevalence of students on Internet addiction and cyberbullying among different

Variables	Gender		Family		Department		Education		
	Male (*n* = 295)	Female (*n* = 705)	Nuclear (*n* = 575)	Joint (*n* = 295)	Natural sciences (*n*=157)	Social sciences (*n*= 843)	BS (*n*=526)	MA (*n*=437)	MPhil (*n*= 37)
Internet Addiction (%)	31.86	20.4	25.04	22.1	22.3	24.1	29.1	18.1	16.2
Cyber-bullying (%)	40	18.2	22.61	27.29	28.7	23.8	30.21	18.9	10.8

variables. Table 2 demonstrates that 31.86 % male and 20.40 % female were found to be higher on Internet addiction. The prevalence of cyberbullying is 40 % among male students and 18.20 % among female students. Regarding the family system students of the nuclear family system (25.04 %) were higher on internet addiction as compared to students of the joint family system (22.1 %). While students belonging to the joint family system were higher on cyberbullying (27.29 %) as compared to students belonging to the nuclear family system (22.61 %). Concerningthe department, the students of natural

sciences were higher on cyberbullying (28.7 %) but lower on internet addiction (22.3 %). Students of social sciences were higher on internet addiction (24.1 %) than cyberbullying (23.8 %).At BS level 29.1 % of students are addicted to the internet and 30.21 % are victims of cyberbullying. While at MS/MSc level 18.1 % of students were internet-addicted and 18.9 % were the victims of cyberbullying. While at Mphil level16.2% were addicted to the internet and 10.8% was cyberbullied.

Table 3

Descriptive Statistics, Alpha reliability coefficients and Pearson correlation among study variables (N=1000)

Variables	*M*	*SD*	*α*	1	2	3	4	5	6	7	8	9	10	11	12
1. 1-Internet addiction	26.72	18.31	.91	-	.89*	.89*	.80*	.69*	.83*	.63*	.51*	.43*	.45*	.41*	.44*
2. 2-Salience	6.65	5.30	.74		-	.71*	.64*	.59*	.65*	.48*	.45*	.42*	.41*	.36*	.39*
3. 3-Excessive use	6.77	5.26	.71			-	.61*	.50*	.71*	.47*	.39*	.37*	.35*	.31*	.35*
4. 4-Neglect work	3.72	3.56	.70				-	.52*	.61*	.47*	.47*	.45*	.41*	.39*	.38*
5. 5-Anticipation	2.80	3.52	.45					-	.49*	.42*	.36*	.33*	.32*	.32*	.29*
6. 6-Lack of control	4.57	3.72	.69						-	.42*	.35*	.33*	.31*	.26*	.33*
7. 7=Neglect social life	2.21	2.37	.45							-	.47*	.44*	.42*	.39*	.39*
8. 8-Cyberbullying	34.26	17.64	.94								-	.91*	.91*	.89*	.77*
9. 9-GOV	13.12	7.01	.86									-	.74*	.75*	.59*
10. 10-SOV	9.30	5.51	.86										-	.79*	.69*
11. 11-ORD	6.23	3.89	.84											-	.63*
12. 12-VORD	5.62	3.59	.78												-

*Note.*GOV = general online victimization; OSV = online sexual victimization; IORD = individual online racial discrimination; VORD = vicarious online racial discrimination.

*$p < .001$.

Table 3 shows Descriptive Statistics, Alpha reliability coefficients and Pearson correlation among study variables. There is a significant positive relationship between all studied variables. Alpha reliability analysis indicates that all variables have a satisfactory reliability coefficient.

VI. Discussion

The current study was intended to provide preliminary data highlighting the prevalence of internet addiction and cyberbullying and their relationship among students of different universities of Pakistan. Prevalence across gender, family system, education level and across departments was explored in the present study.Reliability analysis was run to check the psychometric properties of the questionnaires which were found to be satisfactory. Correlation analysis was run to check the relationship pattern between main variables and their subscales

Table 1 of the results addresses the frequency of demographic variables and their percentages. The percentage of female participants was greater than male participants. Students belonging to the nuclear family system, education level of BS and social sciences departments were more in percentage. Students whose age ranges from 21-25 years were more in number than students of other age groups.

Table 2 was showing the results of the prevalence of Internet addiction and cyberbullying among participants which was the basic purpose of the study. To determine the level of Internet addiction and cyberbullying percentile ranks were used. The individuals whose percentile scores were higher than 75,

were labelled as Internet addicts. The same criteria to determine the level of internet addiction was used by Young (1996). According to the results,the prevalence rate was 23.8 % across the population. Results indicated that internet addiction was more prevalent among males as compared to females in the Pakistani population. 31.86 % of males were addicted to the internet while the rate of internet addiction among females was found 20.4 %. There are certain societal and cultural aspects e.g. males find more privilege and opportunities in Pakistani society to spend time onthe internet. Comparing female they can use cell phones without any family restriction, can use internet cafes and possess more money to pay for internet applications. On the other hand, females find restricted time and access to the use of the internet. After universities time they have to perform many domestic responsibilities which limits them to spend more time on the internet. Moreover, Pakistani society is a male dominant society yet so males are provided with more facilities and fewer restrictions as compared to females. Present results are consistent with previous researches.

Numerous researches support these findings that significant gender differences exist in the use of internet addiction. For example, Hamade (as cited in Qin, 2011) in Kuwait, and Park, Kim, and Cho(2008) in South Korea students and Cao, Sun, Wan, Hao, and Tao (2011) in Chinese sample witnessed significant gender differences in internet addiction where male were found to be higher in rate. Although the ratio of prevalence of internet addiction varied across studies yet empirical evidence supports the notion that males are more addictedtothe internet rather than females. It means that in Pakistan the rate of addiction is more than in China and Korea. It may be due to the unemployment of youngsters. Usually, unemployed individuals in Pakistan find much spare time to spend on the internet, especially when they are youngsters.

The prevalence of cyberbullying was also explored in this study. The overall prevalence of cyberbullying was 24.6 % across the population. 40 % males and 18.20 % females were the victims of cyberbullying. According to the results of the present study, males were more victims of cyberbullying than females. This is because Pakistani females are less likely to use the internet freely so they have less likely to be victims of cyberbullying. There is a growing number of cyberbullying victims and it is confirmed through several studies that almost 23 to 46 percent of students turned out to be the victim of cyberbullying at least once (e.g.Calvete, Orue, Estevez, Villardon, & Padilla, 2010; Hinduja &Patchin, 2005). In Pakistani, because of social and familial context, it relatively easy to find reasons why females are less likely to be bullied. As discussed earlier that they find limited time and access to the internet and are not allowed, by the majority of families, to increase social networking contacts. They are usually advised to restrict their relations, on the internet, with family members or close relative or friends. On the other hand,the male is not bound to these restrictions so their immense exposure to the internet increases the probability of being more bullies.

Existing literature also reveals mixed findings regarding cyberbullying for instance some other studies have found that girls are more likely to be cyberbullied than boys (Kowalski & Limber, 2007), whereas others have endorsed that males are more likely to cyberbully than their counterpart (Huang & Chou, 2010; Kassiani et al., 2018) or few studies suggest that there is no significant gender difference.

Some others additional findings are discussed here. Regarding the family system students belonging to a joint family,the system was higher on cyberbullying (27.29 %) as compared to students belonging to the nuclear family system (22.61 %). While students of the nuclear family system (25.04 %) were higher on internet addiction as compared to students of the joint family system (22.1 %). Concerningthe department, the students of natural sciences were higher on cyberbullying (28.7 %) but lower on internet addiction (22.3 %). Students of social sciences were higher on internet addiction (24.1 %) while lower on cyberbullying (23.8 %).At BS level 29.1 % of students are addict to the internet and 30.21 are victims of cyberbullying. While at MS/MSc level 18.1 % of students were internet-addicted while 18.9 % were victims of cyberbullying. At the MPhil level, 16.2% were addicted to the internet while 10.8% cyberbullied.

Table 3 addresses the correlation among studied variables and their alpha reliability. A significant positive correlation was found between internet addiction and cyberbullying, which supported the hypothesis of the present study. Results of the study endorsed this hypothesis. Internet addiction and cyberbullying have a significant positive relationship. Moreover, the subscales of internet addiction and cyberbullying are also positively correlated. This correlation is consistent with past researches. For

example,Nuray, Derya, and Mahmut (2019) found that cyberbullying was positively related to Internet usage characteristics and Internet addiction.

Internet Addiction Test and Online Victimization Scale both have consisted of six and four subscales respectively. All subscales of main variables had significant positive correlations with each other. This relationship was quite logical in this way that the more the internet will be used by individuals the more the addiction will occur causing more chances of becoming a victim of cyberbullying. All subscales of internet addiction had a significant positive correlation with each other. Widyaunto and McMurran (2004) computed factor analysis for the scale used in the current study and his results were the same as current results which provided empirical evidence in support of our results.Present findings are also in the same vein as existing empirical evidence. For instance, Lin (2020) among Taiwanese junior high school students;Simsek et al. (2019) in Turkish voluntary high school students, and Wu et al. (2016) with Chinese adolescents found a positive association between internet addiction and cyberbullying.

VII. CONCLUSION

The current study endorsed that internet addiction (23.8 %) and cyberbullying (24.6 %) are not prevalent among Pakistani university students but also there was a positive correlation between both variables.

Limitation and Suggestion

There are certain limitations of the study that must be conceived as suggestions. The present study was descriptive and correlational, whereas examining causal relationship may portray a more vivid picture of the phenomenon in university students. A larger sample would enhance the external validity and generalization of findings. It would also be adequate to use some other methods e.g. interviews and focus groups in combination with self-report measures to control the effect of common method variance and social desirability.

Implication

Current findings might be useful to raise awareness, against the harmful influence of internet addiction and cyberbullying, among parents and school mentors. Counselors and clinician may also be benefitted to develop intervening strategies to scale back the negative impact of internet addiction and cyberbullying for university students.

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