

Internet Addiction: Its relationship with Computer Anxiety and Loneliness

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This study examined the relationship of Internet addiction with computer anxiety and loneliness. It was hypothesized that "Internet addiction would be negatively related with computer anxiety and positively related with loneliness". The sample comprised of 66 private and public sector university students (30 males; 36 females) from Karachi with the mean age of 22.05. Through purposive sampling only those student were selected who were Internet users and had internet facility available at home. After taking consent, they were requested to fill Respondent Profile Form followed by the administration of Compulsive Internet Use Scale, Computer Anxiety Rating Scale, and Differential Loneliness Scale- Short Student Version. Pearson product-moment correlation coefficient indicated that Internet addiction had a significant negative relationship with computer anxiety whereas non-significant positive relationship was found with loneliness. It indicates that computer anxiety may restrict one to become an Internet addict while loneliness doesn't seem to be a contributing factor for internet addiction. No significant gender differences were found in all three variables. However, computer anxiety was significantly higher in public sector university students.

Keywords: Internet addiction, computer anxiety, loneliness, university students, correlation.

Common and usually asked question related to internet addiction is whether computer anxiety and loneliness are associated with internet addiction or not? With this problem in mind, the present research was conducted to determine the possible relationship of internet addiction with loneliness and computer anxiety of adult university students. The review of literature for formulating hypothesis is as under:

The term Internet addiction is characterized by being dependent psychologically on Internet, without considering type of act performed while signed in (Kandell, 1998). It is a dangerous problem that can ruin an individual's health and relationships along with reducing one's overall functioning and productivity. Despite the fact that many people spend numerous hours online every day for various activities, the line between normal user and addict is crossed when one cannot stop spending time on the Internet, no matter even if he/she has to sacrifice or delay other things for it. However, if computer anxiety is high then there are chances that one may try to avoid the Internet.

Howard and Smith recognized that a person whose trait anxiety is elevated would

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express more computer anxiety as compared to the individual whose trait anxiety is low (as cited in Saade & Kira, 2009). There is also another view to it i.e. the higher the severity of Internet addiction, lower will be the severity of computer anxiety. Similarly, Akin and Iskender (2011) found that internet addiction is negatively correlated with anxiety. Thus, due to anxiety, a person may avoid use of computer and there are less chances of becoming internet addict. On the other hand, when a person has perception of loneliness then in order to reduce feelings of loneliness, the individual may take help of the internet and chances of internet addiction can increase.

Internet is something through which people can go anywhere, find out virtually anything, do what they want to and be anybody what others want. Although there are ethics to use internet and one should follow policies. Despite of it, majority of people feel that they are not answerable to any administrator and public reaction is missing or if it is present then it is not direct. A research mentioned by Conner (2008) depicted that internet use is a causative aspect in almost fifty percent of problems related to family and relationships.

Furthermore, over use of Internet can make a person socially isolated, increase anxiety, result in loss of affection from close ones and may lead to experience feelings of gloominess. With the wide availability of the researches, it is clear now that the behaviors that are associated with loneliness may add in to amplify the risk of Internet addiction. It has been observed that individuals who are lonely tend to use internet excessively because it provides a kind of social environment that is ideal and satisfactory for lonely people to interact with others (Whitty & McLaughlin, 2005). Also, since lonely individuals are more likely to be socially withdrawn therefore, developing social interactions can be fairly difficult for them in face-to-face social situations than in the world of online communication (Erdogan, 2008). On the other hand, the heavy use of Internet can also be a reason that leads an individual to cut off from normal social contacts and be limited to the life of the Internet thus leading one to become lonely (Kraut et al., 2002).

Moreover, Serin (2011) also found that Internet use can be predicted by personality traits, life satisfaction and loneliness. Also, many researchers suggested that university student's adaptation difficulties and underlying psychological problems also results in excessive internet usage (Koç, 2011; Şahin, Balta & Ercan, 2010 as cited in Serin, 2011). Thus, it is to be taken into consideration that while Internet is facilitating and contributing positively in many people's lives, it is also bringing along several negative impacts on people's physical, psychological, social, and cognitive development. When individual experiences loneliness, then he/she might favor the vast and infinite world of the Internet over the non-virtual world in search of more satisfactory relationships. If this way of interaction persists then there is a high probability for such an individual to develop Internet Addiction. Furthermore, addiction, being an extreme habit, can leave a negative impact on the individuals' health, both mentally and physically. These negative impacts include anxiety among many others.

There also appear gender differences in the internet usage, perception of loneliness and computer anxiety. A study cited by Chou, Condrion and Belland (2005) revealed that men tend to be more pathological users of the internet as compared to women. Similar findings were reported by Serin (2011) that men are more difficult users of internet than women. On the contrary, a study cited by Cao and Su (2007) indicated that men and women do not differ on the amount of time they spend online. Similarly, regarding computer anxiety Brosnan and Lee (1998) did not find any gender differences whereas Gilroy and Desai (1985) concluded that females tend to have higher computer anxiety as compared to their counter parts. Likewise, the perceived level of loneliness also differs with gender. Previous researches supported the notion that males tend to have high level of loneliness as compared to females (Borys & Perlman, 1985). While according to Victor, Scambler, Marston, Bond and Bowling (2006) sex differences with regard to the level of perceived loneliness depends more on other confounding factors like marital status and age etc. It is therefore important to consider that the relationship between these variables does not work in isolation rather various other factors also play a significant role.

The main objective of the current study is therefore to determine the relationship of Internet addiction with computer anxiety and loneliness especially with regard to Pakistani culture. The results of this study would help us to understand the role of internet addiction in loneliness and computer anxiety. It is essential to consider these factors as wide variety of researches indicate that Internet usage in Asia has been remarkably increased since last decade. In this current scenario, Young and Abreu (2010) found that a large number of people in Asian countries like South Korea, Singapore, Taiwan and China are prone to meet the diagnostic criteria of becoming Internet addicts and now Pakistan is also included in these countries (Niaz, 2008). Hence, this research would help us to understand that whether people in the city of Karachi, Pakistan also react to the internet usage in a similar way or not. Moreover, difference in gender and university sectors with reference to the internet addiction, computer anxiety and loneliness would also be taken as additional variable.

It is hypothesized that:

Internet addiction is likely to positively correlate with loneliness and negatively correlate with computer anxiety.

Method

Participants

The present study comprised of total 66 adults (30 males; 36 females). The age range of participants was between 19 to 25 years with mean age of 22.05 years (SD= 2.25). All the participants were approached from two private (n=26) and one public sector (n=40) educational institutes of Karachi.

Inclusion criteria.

Only those university students were selected as participants for data collection who were unmarried, whose ages were between 19 to 25 years and had Internet facility available at home.

Exclusion Criteria.

Those university students were excluded as participants for data collection who had a history of any psychiatric disorders.

Measures

A respondent profile form along with three scales to measure the level of Internet addiction, Computer anxiety, and Loneliness were used.

The Respondent Profile form gathered information related to age, sex, residential area, marital status, economic status, name of university and faculty, education, birth order, family structure, any history of psychiatric disorders, siblings their sex and age, father, mother, occupation etc.

Compulsive Internet Use Scale (CIUS; Meerkerk, Eijnden, Vermulst & Garretse, 2009). Compulsive Internet Use Scale (CIUS) is 14 items scale and it was used to assess the severity of internet addiction. It is based on the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria of dependence and pathological gambling as well as on the criteria for behavioral addictions proposed by Griffiths (as cited in Meerkerk, 2007). It is a 5-point rating scale (0= Never, 1= Seldom, 2= Sometimes, 4= Often, 5= Very Often). The participants were instructed to answer each statement according to their use of the internet. For scoring, all the scores were summed up to get a total score. CIUS has been found to have high reliability (Cronbach's alpha= .90) while construct validity has been found to be moderate ($r = .52$).

Computer Anxiety Rating Scale (CARS; Heinssen, Glass & Knight, 1987). Computer Anxiety Rating Scale (CARS) was used to tap the strength of attitude of individuals when they are using computers. It consisted of 19 items, scored from 1-5 with "1" representing a reply of "strongly disagree" to "5" indicating a reply of "strongly agree". In this scale ten statements are positive and nine are negative. Hence items no. 2,4,5,6,7,9,10,17,19 are reversed coded with values of "1" carried "strongly agree" to "5" carried "strongly disagree". The minimum score is 19 and maximum score is 114. The score range of 19-50 classify no anxiety category, score of 51-82 indicates low anxiety category and score of 83-114 classify moderate/high level of anxiety. CARS accounted to have high internal consistency of the entire instrument with Cronbach alpha 0.87.

Differential Loneliness Scale –Short student version (DLS; Schmidt & Sermat, 1983). Documentation of the scale indicates that it is a dichotomous scale which consists of total 20 items. This scale assesses the felt lack of, or dissatisfaction with four types of

social relationships: 1) romantic-sexual relationships (R/S), 2) friendships (Fr), 3) relationships with family (Fam), and 4) relationships with larger groups (Gr). Item number 2, 6, 11, 18, and 19 measure "R/S"; 8, 10, 13, 15, and 17 measure "Fr"; 1, 4, 5, 7, and 16 measure "Fam"; while 3, 9, 12, 14, and 20 measure "Gr". The participants are instructed to decide on each statement whether it describes their situation or not, and if it does then they are required to mark it "True" (T), if not then "False" (F). It is also mentioned that if any of the situations depicted in the statements is not applicable to them then they have to mark it as "False" (F). For scoring, the items without asterisk are given one point on each marking of "True" (T) whereas items with asterisk is given one point on each marking of False (F). The reliability of DLS - Short student version with Kuder-Richardson-20 coefficients was from .90 to .92 and test-retest coefficients were .85 and .97. The scale also has concurrent validity, substantive and structural validity (Schmidt & Sermat, 1983).

Procedure

Firstly, permission to conduct the research was taken from the heads of all the approached educational institutes. Then, potential participants were approached and only those participants who were Internet users and had the Internet facility available at home were included in the study. This was found through verbally asking the students. Then the Introduction to Participant form and Informed Consent Form was given to the selected participants. After taking their consent and making sure that they have understood the terms and conditions, they were given to fill the Respondent Profile Form followed by the three scales; Compulsive Internet Use Scale, Computer Anxiety Rating Scale, and Differential Loneliness Scale. Scoring was then made as per scoring method of each scale.

Ethical Considerations

Data was collected only from those individuals who voluntarily gave their consent to participate in the research. All the participants reserved the right to withdraw at any time during the administration of the questionnaires without any kind of penalty. Further, for data collection, application of statistics, interpretation of results, writing of discussion and references, all ethical principles of American Psychological Association were considered.

Results

In the following section, firstly descriptive statistics of variable under study would be mentioned followed by inferential statistics of Pearson product moment correlation coefficient for analyzing data related to hypothesis. For additional variables of gender difference and university sectors, t-test was applied.

Table 1

Mean Scores and Standard Deviations of the Internet Addiction, Computer Anxiety and Loneliness (N=66).

<i>Variables</i>	<i>M</i>	<i>SD</i>
Internet Addiction	41.53	11.19
Computer Anxiety	42.17	16.43
Loneliness	8.30	3.93

Pearson product moment correlation was applied in order to evaluate the hypothesis. The results indicated that there was a significant negative correlation between Internet addiction and computer anxiety ($r = -.20, p < .05$). there was no significant correlation between Internet addiction and loneliness ($p > .05$).

Table 2

Gender Difference in the levels of Compulsive Internet Use, Computer Anxiety, and Loneliness (N=66).

Variable	Males		Females		t(df)	p	Cohen's d
	M	SD	M	SD			
CIU	41.33	13.27	41.69	9.36	.12(64)	.89	.03
Loneliness	8.00	3.89	8.67	4.00	-.68(64)	.49	.16
CA	40.75	18.25	43.87	14.06	-.76(64)	.44	.19

Note: CIU= Compulsive Internet Use, CA= Computer Anxiety

Independent sample t-test was applied in order to determine gender differences in internet use, loneliness and computer anxiety. The results indicated that there was no significant gender difference in all three variables under study.

Table 3
Independent Sample t Test for Mean Differences in Students from Public and Private Institutes (N=66).

Variables	Public (n=40)		Private (n=26)		t(df)	p	Cohen's d
	M	SD	M	SD			
CIU	41.28	10.2	41.92	12.76	-.22(64)	.82	.05
Loneliness	8.50	3.87	8.00	4.06	.50(64)	.61	.12
CA	46.65	15.26	35.27	16.03	2.90(64)	.001	.72

Note: CIU= Compulsive Internet Use, CA= Computer Anxiety

Table 3 indicates significant differences between private and public sector university students in computer anxiety. However, non-significant differences were noted in internet use and loneliness.

Discussion

The present study was aimed to determine relationship of Internet addiction with computer anxiety and loneliness.

Firstly, it was hypothesized that internet addiction would likely to be positively correlated with loneliness. The hypothesis was not supported as a non-significant positive correlation between internet addiction and loneliness was found in present study. Contradictory to this, Nalwa and Anand (2003) compared student Internet addicts with the non-addicts and found that Internet addicts are socially more isolated. Niemz, Griffiths and Banyard (2005) also found similar results. Anderson and Bushman (2001) observed that as the time spent on the Internet increases, emotional and behavioral problems such as loneliness and aggression also increase. Caplan (2002) also suggested that there is a direct relationship between an unusual Internet use and depression, social isolation, loneliness and decrease in home/school/job performance. However, our research was not supported by previous researches indicating negative intervention of internet addiction. This may possibly be due to prevalence of active social media websites these days, where young adults and students are quite active and they may feel belonging to groups of people. Further, easy availability of internet facilities these days on cell phones has also motivated internet users to participate in practical social functions and not to limit them at home, where there is internet connection. Hence, people need not to stick to one place only for the use of internet.

Our second hypothesis was that internet addiction would likely be negatively correlated with computer anxiety was supported. Results are also supported by a number of studies. A study conducted by Durndell and Haag (2002) indicated that people who had higher levels of computer anxiety had more negative attitudes towards the Internet and

thus they tend to use the internet lesser. Contradictory results were found by Dalbudak et al. (2013) in a study on university students. They found a positive correlation between Internet addiction and anxiety levels.

Further analysis of the data revealed that there exists non-significant gender differences in the level of Internet addiction, computer anxiety, and loneliness (see Table 3). Similar findings were also mentioned by King-wa, Wincy, Paul and Paul (2010) that Internet addiction prevails equally among both men and women. Moreover, a study conducted by Havelka, Beasley, and Broome (2004) revealed that there is no gender difference in the level of computer anxiety. Similarly, Mahon, Yarcheski, and Yarcheski (1994) did not find any gender difference in loneliness.

Additional analysis was run to find out differences in internet use, computer anxiety and loneliness of university students of public and private university sectors. Results revealed that computer anxiety, although in normal range, was significantly higher in students belonging to public sector universities as compared to those from private sector. In our study this difference might be attributed to the fact that as the teaching pattern of private sector universities utilize computers more frequently as compared to the public sector, therefore the students at the private sector universities are not only taught through computer-based lectures but they are also required to do most of their work using computers. In the short fall of electricity, private sector students and teachers can also use computer because of availability of generators but this facility is usually non accessible in public sector universities. Hence, it seems that private sector students become more used to computers in their universities and are able to handle it more efficiently thus, they are expected to have much lower level of computer anxiety than public sector students.

Limitations and Suggestions

This study did not focus on the type of activities people engage in on the Internet which might have helped us in better analyzing the relation between the three main variables that are internet addiction, computer anxiety and loneliness. Moreover, a larger sample size, wider age group, and inclusion of non-student population would also be helpful for future researches.

Implications

The results of this research provided us with information that although internet addiction is harmful for people however if it is not extremely high, it may not always lead to perception of loneliness in university students. Our results did not depicted extreme internet addiction among our sample of university students. However, literature review of this research can facilitate mental health professionals of Pakistan to become aware of the need to spread knowledge about the dangers associated with excessive internet usage especially in the adolescents/young adults who are apparently at the greater risk from Internet addiction.

Conclusion

It is clear from the discussion that although researches indicate that internet addiction can promote loneliness or loneliness is a risk factor for internet addiction. However, from the present study it was not proved as non-significant relationship between internet addiction and loneliness was found. Further, it was found that any level of computer anxiety would play an important role in refraining individual from becoming internet addict.

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