

Relationship of Internet Addiction with Depression, Loneliness and Health Related Lifestyle among University Students

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Abstract: Internet addiction (IA) is a newly emerged clinical disorder and it has negative effects on physical and mental health. University students are the most vulnerable group for IA. The aim of the present study was to determine the relationship of IA with depression, loneliness and health related lifestyle among university students. Cross-sectional survey was conducted by enrolling 175 students of Faculty of Allied Health Sciences, University of Peradeniya. Internet addiction test (IAT) was used to assess the level of IA. Depression, loneliness, and health related lifestyle were assessed using Peradeniya depression scale (PDS), University of California at Los Angeles (UCLA) loneliness scale and health practice score (HPS) respectively. T-test and ANOVA were conducted to examine the differences; and correlation and regression analyses were used to examine the relationships between variables. Overall, 40.6% of students were placed in IA group. Generally 28.6% of students had mild and 12.0% had moderate addiction. No case of severe IA was seen. There were 20.6% of students in depressive state and 17.1% of students had poor HPS. The average score that the student got from loneliness scale was 23.42. There was a positive significant correlation between IA and both depression and loneliness. Moreover, a negative significant correlation found between IA and health related lifestyle. Male students had higher IA scores than female students. The study results are considered to develop preventive interventions and treatment strategies.

Key words: IA, depression, loneliness, health related lifestyle, university students.

1. Introduction

Internet is a technological tool which has become an integral part of daily life all over the world. And also it is a recognized channel for provide wide range of information, communication, academic research and entertainment.

At the moment, Internet usage and its outcome have become a controversial issue with the number of users which is increasing rapidly day by day. With the increasing importance of internet and online usage considerably, pathological internet use (Internet Addiction (IA)) is becoming more common in modern society. Goldberg defined “internet addiction is the

pathological compulsive use of internet” [1]. Although the term addiction is not listed in the Diagnostic and Statistical Manual of Mental Disorders (DSMMD: 4ed.); by using pathological gambling as a model, Young defined the IA as “an impulse-control disorder which does not involve an intoxicant” [2].

Previous research reveals that the greater use of the internet is associated with some social and psychological variables such as decline in social involvement as measured by communication within the family and decline in the people’s local social networks, increases in loneliness, increases in depression and decline in the size of social circle [3]. Findings of the Morahan-Martin and Schumacker’s study (2000) indicated that 8% of participants were pathological in their internet use and these pathological users were lonelier than non-pathological

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users. Although their findings did not indicate a clear cause-effect relationship, Morahan-Martin suggests that loneliness is caused by excessive internet use [4].

Lifestyle can be seen as the particular way of living defined by a set of expressive and patterned behaviors of individuals occurring with some consistency over a period of time. It became a fundamental concept in the development in health promotion theory and practice [5]. Some researches indicate that adolescents who develop IA might have unfavorable outcomes and changes in several lifestyle related factors including physical inactivity, excessive time spent on internet, increased substance use, sleep deprivation and poor eating habits [5-7].

Adolescents are most vulnerable group for problematic internet use than adults and their lifestyle habits are easily affected by the internet [8]. Internet use is comparatively more common among university students [4]. The higher levels of IA among university students may result from variety of reasons, such as they may face many challenges including gaining independence, seeking a better career, adapting to peer groups with their new university life. Some students may suffer from loneliness because of moving from home, breaking social networks and attempting to develop new social networks as well as some may not successfully cope with novelties and difficulties in university life and they may potentially develop depression or stress. This loneliness, depression and stress all together make them more prone to be internet addicted. An easier and faster internet access at universities may also enhance the risk of university students getting involved with IA [9].

There are abundant studies relevant to this context conducted in various countries in the world. But Sri Lanka is handicapped by the dearth of research relating to the impact of IA to mental health. Thus, present study aims to examine the relationship of IA with depression, loneliness and health related lifestyle among university students.

2. Materials and Methods

2.1 Participants

Study was conducted by enrolling 175 students from both first year and fourth year of Faculty of Allied Health Sciences, University of Peradeniya. Self-administered questionnaire designed to evaluate IA, depression, loneliness and health related lifestyle was used as data collection instrument.

2.2 IA

IA was evaluated using Young's internet addiction test (IAT) developed by Dr. Kimberly Young. It is a self-rating questionnaire that consists of 20 items. Each response was scored on a Likert scale (0, 1, 2, 3, 4, 5) with the scores that were summed to provide quantitative overall severity of IA score ranging from 0 to 100. Higher scores indicate a greater level of addiction. Young defined 0-30 points as normal range users, 31-49 points as mild users, 50-79 points as moderate users and 80-100 points as severe users.

2.3 Depression

Depressiveness was assessed using the Peradeniya depression scale (PDS), which was the first screening tool developed in Sri Lanka to detect depression. This scale has been developed and validated in Sinhala. Hence, in this study, PDS was used in Sinhala and also English translation was provided. It consists of 25 statements and each statement requires a response of either "Yes" or "No". One point each is given to each item marked as "Yes". No score is given to those items marked "No". The cut off point for the detection of depression in the PDS is a total score of 10/25 or higher.

2.4 Loneliness

Loneliness was evaluated using the University of California, Los Angeles (UCLA) loneliness scale developed by Russell. This is a 20 item self-reporting inventory measure using a Likert scale (0, 1, 2, 3) with a total score ranging from 0 to 60 and high scores

indicating a high level of loneliness [10].

2.5 Health Related Lifestyle

In the Alameda country study performed by Belloc and Breslow, suggested that seven health practices were shown to be significantly related to physical health status and subsequently mortality rate. Based on that study, the present study was used the same health practices such as, daily consumption of breakfast, eat between meals, appropriate daily duration of sleep, regular physical activity, maintain desirable weight, smoking habit and drinking habit. Each item has multiple answers (2-4 each), and the answers were dichotomized into a “good” or “not good” health practice. One point was given to each good health practices and scores from eight “good” items were totaled to provide a score of cumulative personal health practices or health practice score (HPS). Respondents with 6-8 points were allocated to the good, and those with 0-5 points to the poor, category [11]. Based upon the lifestyle study by Belloc and Breslow [12] and taking into consideration cultural differences, the question items, phrasing, and scoring were designed for Sri Lankan subjects.

2.6 Statistical Analysis

Data analysis was conducted in two stages. First stage consists of testing the reliability and validity of the measurement and descriptive statistics carried out by using SPSS (version 19). Second stage involved

analysis of existing relationships through correlation, regression analysis, independent test and one way analysis of variance.

2.7 Ethical Consideration

Approval has taken from the Ethical committee of Faculty of Allied Health Sciences, University of Peradeniya to carry out the research.

3. Results

Among the study population ($n = 175$), there were 61 (34.9%) male students and 114 (65.1%) were female students. Majority of subjects 80 (45.7%) were between 23-25 years of age. When sorted by grades, there were 98 (56.0%) first year students and 77 (44.0%) were fourth year students.

Table 1 indicates the levels of IA, depression, loneliness and health practice. Overall, 40.6% of students were placed in IA group. Generally 28.6% of students had mild and 12.0% had moderate addiction. No case of severe IA was seen. There were 20.6% of students in depressive state and 17.1% of students had poor HPS. The average score that the student got from loneliness scale was 23.42. Moreover, male students had higher IA scores ($t = 6.211$; $p < 0.001$) than female students. There was a significant effect of purpose of surf internet on IA ($F(6,168) = 11.269$, $p < 0.001$) and a positive correlation between time spent on internet and IA ($r = 0.493$) ($p < 0.001$).

According to Table 2, there was a positive

Table 1 Levels of IA, depression, loneliness and health practice.

Variables	Frequency (n, %)	Mean \pm standard deviation
IA		27.50 \pm 16.69
Normal range users	104 (59.4%)	
Mild IA	50 (28.6%)	
Moderate IA	21 (12.0%)	
Depressive state		6.37 \pm 4.12
Non depressive	139 (79.4%)	
Depressive	36 (20.6%)	
Loneliness		23.42 \pm 10.32
HPS		4.4 \pm 1.06
Good HPS	145 (82.9%)	
Poor HPS	30 (17.1%)	

Table 2 Correlation between IA and PDS, UCLA loneliness scale and HPS.

Variables	IA	HPS	PDS	UCLA loneliness scale
IA	1			
HPS	-0.162*	1		
PDS	0.181*	-0.073	1	
UCLA loneliness scale	0.186*	-0.072	0.348**	1

* Correlation is significant at the 0.05 level (2-tailed);

** Correlation is significant at the 0.01 level (2-tailed).

correlation between IA and PDS ($r = 0.181$) ($p < 0.05$), a negative correlation with HPS ($r = -0.162$) ($p < 0.05$), and a positive correlation with UCLA Loneliness scale ($r = 0.186$) ($p < 0.05$).

The effect of IA on depression, loneliness and health related lifestyle was investigated with simple regression analysis. IA can explain the variable of depression up to 4.4%, loneliness up to 2.8% and health related lifestyle up to 3.4%; which are statistically significant.

4. Discussion

The aim of the present study was to determine the relationship of IA with depression, loneliness and health related lifestyle among university students. As a pre requisite, the prevalence of IA among allied health sciences students also assessed. The prevalence of IA was little high in this study population; in fact, about half of the participants have had some grades of IAs. It was found that 59.4% of all participants did not have IA and 40.6% had mild and moderate IA. There was no case of severe IA in present study.

4.1 IA and Depression

The findings of this study showed that there was a significant positive correlation between depression and IA among the university students; this finding is congruent with that of previous researches [3, 13-15] who showed that there is a significant positive correlation between depression and IA. Present study indicated that IA as a whole can predict the variable of depression up to 4.4%; this result is consistent the results of previous studies such as Ref. [14] that

showed the use of Internet is the predictor of depression in adolescents and young adults. The individuals who become addicted to the Internet experience the negative consequences resulting from it such as depression, which is one of the most conventional mental disorders, is associated with a series of biological symptoms such as changes in appetite, kinetic activities, sexual interest or activity and hypnosis; and anxiety which is associated with one or more physical feeling(s), such as, the empty feeling in the heart, shortness of chest, heart palpitations, headache or sudden compulsive urge to urinate and a desire to move are common symptoms of it.

4.2 IA and Loneliness

Present study indicated that there was a significant positive correlation between loneliness and IA which is similar to many previous researches [3, 11, 16]. Excessive Internet use was shown to be a reason to loneliness by isolating individuals from the real world and deprive them from real life social interactions [3].

4.3 IA and Health Related Lifestyle

The findings of this study showed that there was a significant negative correlation between health related lifestyle and IA among university students. There were several studies similarly suggested that IA could have a negative effect on the health status of adolescents [3, 6, 17]. Excessive Internet users have improper dietary behaviors [7] and there was a strong association between IA and high use of alcohol and tobacco [18]. Moreover, they reported irregular sleep

patterns and many episodes of sleep disturbance [7].

4.4 IA and Gender

In the present study male students were more addicted to Internet than female students. This result is also accord with previous researches on IA, showing higher addiction rate in males than females [17, 19, 20]. This difference can be explain as, male students are more familiar with machines as well as they use Internet more for entertainment such as play online games, gamble online, engage in cybersex and view cyber porn compared with girls [21].

4.5 Limitations of the Study

Present study results should be interpreted in the light of four limitations. First of all, it was a cross-sectional design, which does not allow for causality or the direction of relationships to be determined; this necessitates longitudinal follow ups. However, appropriate analysis of cross-sectional data represents a useful initial step in identifying associations between IA and of the following: depression, loneliness and health related lifestyle. Second, all information was obtained from a self-reported questionnaire, resulting in the possibility of response bias and the accuracy of data that might be affected. Multiple assessments, interviews, and informants may have provided a better and more thorough understanding of IA. Third, the sample size was small and all subjects were students of the same faculty, thus a general population cohort is not represented. Finally, although the Young IAT is widely used to measure the severity of IA, there is no data regarding validity or reliability of the IAT in Sri Lanka. So the cut-off of the Young's IAT identified among European population was used in this study, this may not be the same as that in Sri Lankan population.

5. Conclusions

The results of the presents study detected that there

was a positive significant correlation between the severity of IA and depression and the loneliness and a negative significant correlation between severity of IA and health related lifestyle. Moreover, male students had higher IAT scores than female students. The study results are considered to motivate further research and to identify risk groups and to develop preventive interventions and treatment strategies.

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