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Relationship between Internet Addiction and Depression among Medical Students: A Cross Sectional Study in a Private Medical College of Dhaka

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Abstract

In this present investigation, a cross-sectional study was conducted among the first year to fifth year students of Delta Medical College, Dhaka to find out their depression level, information regarding socio demographic and behavioral factors were collected by using a structured questionnaire. Depression was assessed by using the PHQ-9 scale. Orman's internet addiction test was performed for internet addiction. The data were analyzed by using SPSS. Among 233 participants, 58% of them were found in moderate to severe level of depression. In severe internet addiction, the logistic regression analysis was like OR ratio= 8.957, CL= 2.527-32.918, P-value=0.000724. It was found that, students who have severe internet addiction are 8.9 times more chance in depression compare to the students having no addiction to internet. Moderate internet addiction students (OR ratio 6.377, CL=2.912, 15.403, P-value=1.09) are 6.3 time more chance to depressed compare with the students who do not have internet addiction. In addition, last study year and smoking habit had significant association with depression.

Introduction

In 21st century internet is the most popular media and now a day's internet is fundamental part of our everyday work life [1]. Its quick progress has provided many chances for exchange information and social interaction [2]. Internet is one of the important tools for education and it is easily available sources for information and also cost effective which makes our lives easier [3]. Medical students use internet for collection of health related information and also for recreation purpose. The net use is raising with times and this excess use has negative effects like on academic performance, social isolation and psychological disturbance [4]. Internet addiction has emerged a new behavior based addiction and attraction a lot attention [5]. Internet addiction is uncontrolled use of net which has effect on our daily activity and relationship and emotional stability [6]. It is an alarming issue with rapid growing interest. It consists of four features: 1) excessive use: loss of time sense; 2) withdrawal: including

feelings of anger, tension, and/or depression if the net connection is disconnected or inaccessible; 3) Tolerance: required for upgraded computer device and spend more time on net and 4) Negative repercussions: such as poor achievement and isolated from society. Previous studies states that, internet addicted persons are facing different types problems like poor academic performance, relationship, financial and occupational problems [7,9]. Internet use has become popular place for young adult including medical students. Excessive use of net has negative consequence such as unable to complete assignment, sleep deprivation and poor academic performance [10]. According to the data by internet world statistics 2016, Asia has the highest number of internet user in the world and it is 44% of total internet user all over the world. The number of internet users in Bangladesh has now been crossed 60 million according to the 2016 statistics of telecoms regulator of which 35% are adolescents. Like other universities, medical universities are consuming millions of dollars to provide the students all the advantages the internet such as books and journal purchase for the students. Unfortunately, a large number of students get indulged internet abuse ultimately ending up in addiction. This study was conduct to assess the strength of relationship between internet addiction and depression.

Methods

A cross sectional study was done by purposive sampling and semi structured questionnaire. Records of 233 undergraduate medical students of Delta Medical College from January 2018 to March 2018 (3 months) were taken and reviewed for this study.

Inclusion Criteria: Students who were present in the college on the days of data collection as well as who were willing to participate by providing written informed consent form were in inclusion criteria.

Exclusion Criteria: Students who were absent in the college on the days of data collection as well as who were unwilling to participate by providing written informed consent form were in exclusion criteria.

Prior to data collection and analysis, ethical approvals were taken from North South University and Delta Medical College Bangladesh. PHQ-9 scale tool was used for screening, diagnosis, monitoring and measuring the severity of depression. Oraman's internet addiction test was used to find out the internet addiction level among the students.

Results

The study was conducted among the medical students. About 233 students were participated in the study. They were 1st year to 5th year students. Analytical cross sectional study was done. Figure 1 shows the percentage of depression among the medical students. According to the PHQ-9 scale there are four levels of depression. The result shows that 25.75% students were minimal depressed, 4.67% were in mild level, 21.46% were in moderate level and 6.01% of students were in severe level of depression. About 58% students are suffering from different level of depression. Remaining 42% students are normal.

From table-1, we found some variables that has association with depression and some do not have association with depression. Last study year is one of the important variables. Students who has study gap, 43% of them are suffering from mild to moderate level of depression. 25% depression found in regular students. So study gap is one of the factor for depression development. Participants those who are smoker 43.7% of them are in mild to moderate level of depression compare with non-smoker 23% are depressed. In case of internet addiction, those who had severe internet addiction 50% of them are in moderate to severe level of depression, those who had moderate addiction 38% of them are depressed and who did not have any addiction 9.5% of them are in the level of depression.

Table-2 shows relationship between variables and depression level, logistic regression analysis was done. From the analysis results reveled that, In severe internet addiction, (OR ratio is 8.957, CL= 2.527-32.918, P-value=0.000724) students are found significant association with Depression. It seems that the students who have severe internet addiction are 8.9 times more chance to be depressed compare to the students having no addiction to internet. Moderate internet addiction (OR ratio 6.377,CL=2.912,15.403, P-value=1.09) students are 6.3 time more chance to depressed compare with the students who do not have internet addiction. In addition, Last study year (OR = 1.93, CI =0.733,5.052, P-value = 0.177) and Smoking (OR = 3.350, CI = 1.413,8.149, P-value =0.006) are found significant. The Defaulter students who have few years study gap are about 1.9 times more likely to be depressed compared to the regular students. Again, Smoking has a significant relationship with depression. The students who have regular smoking habit are suffering from depression 3.35 times more compare to the non-smoker group. Other variables do not have significant relationship with depression.
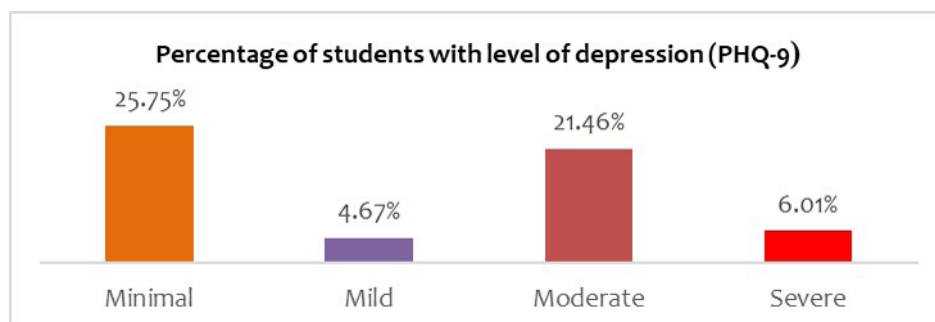

Figure 1: Percentage of students with level of depression

Table 1: Participant's characteristic by depression levels and unadjusted analysis.

| Variables | Categories | Depression Level | | X² value | P Value |
		Minimal/mild	Moderate/severe		
Age	<=20 21-26	54 115	18 (25%) 46 (28%)	0.164	0.685
Sex	F M	60 109	23 (28%) 41 (27%)	.004	1
Residence	Hostel House	75 94	27 (26%) 37 (28%)	0.023	0.878
Family member	Joint Nuclear	99 70	36 (26.6%) 28 (28.5%)	0.029	0.862
Mother's Occupation	Housewife In-service	115 54	41 (26%) 23 (30%)	0.177	0.673
Lost study year	No Yes	152 17	51 (25%) 13 (43%)	3.484	0.061
Smoking habit	No Yes	142 27	43 (23%) 21 (43.7%)	7.048	0.008
Sleep duration	4-6hr 7-8hr 9+hr	59 97 13	24 (29%) 32 (24.8%) 8 (38%)	1.736	0.419
Breakfast Skip habit	No Yes	84 85	33 (28%) 31 (26.7%)	0.011	0.915
Internet addiction	Absence Moderate Severe	85 75 9	9 (9.5%) 46 (38%) 9 (50%)	26.451	<0.001
Physical activity	No Yes	90 79	38 (29.6%) 26 (24.7%)	0.476	0.489
BMI	Normal Obese	124 45	41(25%) 23 (34%)	1.522	0.217

Table 2: Adjusted relationships between variable and depression level that is analyzed using logistic regression

Variable	Reference	Estimate	OR	LCL	UCL	P-value
Age(21-26)	<20	-0.2359	0.789	0.364	1.720	0.548
Sex-M	F	-0.5388	0.583	0.264	1.270	0.176
Residence-house	Hostel	0.1526	1.164	0.606	2.258	0.647
Family member-Nuclear	Joint	0.0185	1.018	0.516	1.993	0.956
Mother's occupation-in service	Housewife	0.2059	1.228	0.609	2.459	0.561
Lost year-yes	No	0.6578	1.930	0.733	5.052	0.177
Smoking habit-yes	No	1.2090	3.350	1.413	8.149	0.006
Sleep duration-7-8	4-6	-0.3002	0.740	0.359	1.524	0.413
Sleep duration-9+		0.079	0.923	0.253	3.129	0.900
Skip breakfast Habit-yes	No	-0.1340	0.874	0.450	1.693	0.690
Internet addiction-Moderate	Absent	1.8528	6.377	2.912	15.403	<0.001
Internet addiction-sever	absent	2.1924	8.957	2.527	32.918	0.0007
Physical activity-yes	No	-0.4193	0.657	0.315	1.342	0.253
BMI-overweight/obese	Normal	0.1711	1.186	0.573	2.404	0.638

Discussion

This study aimed to find out the relationship between internet addiction and depression among medical students in Bangladesh. The prevalence of severe internet addiction in our study was found to be lower than those of internet addiction observed by similar studies in Chile (11.5%), Iran (10.8%) and Greece (5.6%). The study done in Iran the prevalence of internet addiction was 40.7%. Prevalence of internet addiction was 10.8% in Ghamari and moderate (8.1%) and severe internet addictions were 2.8%. In Lam moderate internet addiction prevalence was 10.2% and severe internet addiction was 0.6%. Among senior medical students an analytical cross sectional study was done in King Abdul-Aziz University, Saudi Arabia. The study included 161 medical students. But making the response rate of 78.2%. Majority (94.4%) had computer and 99.4% were using the internet. Only five students (3.1%) showed addiction to internet among 74 students. Highest rate of addiction was found among the 4th year students and the percentage was 70.3% which P value was 0.003. Depression were the common problem among all the addicted students.74.1% student having possible internet addiction and 62.2%of then were not addicted to net but they were suffering from depression (P=0.088). However, the trend in the prevalence of depression in the three different situations was statistically significant (P=0.034). From our study we find that 25.75% students were minimal depressed, 4.67% were in mild level,21.46% were in moderate level and 6.01% of student were in severe level of depression. The results revealed that medical students with possible internet addiction had a time 8.9 chance to have severe depression compared to those with absent of depression (OR ratio is 8.957, CL= 2.527-32.918, p-value=3.380). Depression is one of the tool for mental health measurement. From our study it proved that internet addiction is one of the triggering factor for depression development Medical students are the future doctor of the country. They need to give more attention to their study. But if they are suffering from depression it will hampered their future life. There will be severe impairment in academic, relationship, financial and occupational problems. Our findings may trigger serious concerns about the Significance of these prevalent problems in Bangladesh, which could lead to take appropriate measurement and interventions for this particular population.

Recommendation

1) We find a significant number of students are suffering from moderate to severe level of depression. Students with moderate to severe level of depression should consult the psychologist and need counselling.

2) As internet addiction is one of the factor for depression, students should avoid spending much time on internet. They should limit the time for internet use.

3) Regular screening is important.

4) Further study need to confirm the association between internet addiction and depression as the study was conduct only in one medical college.

Conclusion

Depression was common psychological problem among medical students. This study results find that internet addiction has association with depression. Teachers, doctors need to pay more careful attention to the students who shows symptoms of depression. Regular screening program is important for them. Preventing intervention is required in order to prevent development depression. Preventing intervention should include counselling. Further prospective studies are required to determine the causative factors for development of depression.

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