Original Article

Prevalence and Predictors of Internet Addiction among North India Health Science Students

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Abstract

Internet has become everybody's man Friday these days. Addiction to Internet is a broad term in which compulsive need is there to spend a large amount of time on the internet to an extent that hampers person's academics, relationships etc. The field of medicine is also not left untouched by this addiction. It becomes essential to assess medical students' mental dysfunction and also to monitor their academic progress as they are the future doctors of the community.

MATERIAL AND METHODS: 582 medical students of Santosh Deemed to be University were selected for this descriptive analytical study by Cochrane's sample size formula and stratified random sampling. (For Data collection Young's Internet Addiction Test was applied. The data was analyzed through t -test and Pearson's correlation coefficient by incorporating SPSS Software (23.0) software.

RESULTS: The Current Studies result showed Internet addiction and mental health score mean score for boys and girls was 2.34 ± 0.46 (M), 2.26 ± 0.62 (F) ,2.54 ± 0.31 (M), 2.51 ±0.32 (F) for internet addiction and mental health respectively. There was a positive association of depression and mental health with internet addiction (P - > 0.001). Multiple regression analysis was used to predict possible indicators for addiction towards internet.

CONCLUSIONS: Overindulgent use of Internet by the students can lead to anxiety, mood swings and depression and if not restricted can lead to poor academic performance. Monitoring as well as restricting their internet addiction is the need of the hour and that can be achieved through proper counselling sessions.

KEYWORDS: Internet Addiction, medical students, mental health, academic performance.

INTRODUCTION

The Internet has enriched our life however for many, internet use can grow into a problem. people may find themselves online shopping, gaming, social networking, site surfing, blogging, stock trading, gambling, viewing pornography to an extent that it interferes with their ability to keep up with school, relationship and work and or has a negative effect on their mood[1]. The term Internet Addiction (IA) was proposed by Goldberg for pathological compulsive internet use. K. Young was first to publicize the case report on IA [2]. The diagnostic criteria for IA have been proposed by several investigators[3-5] but none of these has achieved a global consensus. Recently, the American Psychiatric Association published the updated version of the DSM and included Internet Gaming Disorder in Section III as a condition requiring further research which is expected to help establish a globally approved definition and diagnostic guidelines for IA. IA is an upcoming and less researched entity in psychiatry especially in low and middle-income countries, one of them is India. First such effort to study IA among Indian school students was done in Ahmadabad, Gujarat. The result shows 11.8% of student had IA which was predicted by time spent online, usage of social networking sites and chat rooms. This study also found out the strong positive relationship between IA and depression, anxiety and stress[6]a, research conducted in the National Institute of Mental Health and Neuroscience, Department of psychology which focused on identifying the pattern of IA and its association with a mental health problem. Survey analysis found that 24.6% reported frequent problems due to internet use and also have loneliness, depressed mood, compulsivity and other psychological impairment [7-8].

However, despite the wealth of opportunities that the web offers, it nevertheless comes with a whole myriad of challenges particularly among vulnerable groups like youngsters and school goers [9]. Much ink has been spilled on the effects of the Internet on the social and academic lives of students as well as their health particularly when its use

reaches pathological levels. Studies have shown that excessive use of the Internet can be categorized as a behavioural addiction [10,11]. What's more, special treatment approaches have been devised to treat Internet Addiction (IA) in different countries [12]. Although the American Psychiatric Association has not yet listed IA as a behavioural addiction [13], it has nevertheless listed a type of Internet use as a disorder, namely the Internet Gaming Disorder in the appendix of the DSM-5 (American Psychiatric Association, 2013)[6]. Furthermore, there is a whole body of literature that investigates the various effects of IA. Young[14] developed an IA scale which is a validated measure that categorizes users' level of addiction as mild, moderate and severe and has been widely adopted by researchers as a reliable assessment test. Study after study have consistently shown that IA or problematic Internet use [15] is correlated with failure at school, failure at the workplace, and family dysfunction [16,17,18,19]. A cohort study conducted by Chen Xin on the relationship between Internet addiction and social support revealed that the lower the social support score the higher the incidence of Internet addiction, with less social support a risk factor for adolescents' online addiction [20]. The predictive effect of social support on Internet addiction is obvious . Previous studies have found that there was a significant positive correlation between depression and Internet addiction, with the former an effective predictive effect on the latter[21].

The CIAR (Center for Internet Addiction Recovery) stated that Internet addicts suffer from emotional problems, including depression and anxiety- associated disorders and frequently use the fabulous world of the Internet to psychologically escape unpleasant feelings or stressful situations [22,23]. In addition to this Internet addicts are also addicted to drugs, alcohol, tobacco, sex, chronic overeating etc[24,25]. Many scientists and researchers have claimed that the uncontrollable Internet users can generate morphological mutations in the structure of the brain.

Internet addiction disorder, pathological internet use, or problematic internet use typically refers to the questionable or compulsive use of the Internet, which results in substantial impairment in the function of individuals in their different life domains over prolonged time. Internet addiction and other relationships based on the usage of digital media and mental health are vital considerable research fields, arguments, and discussions among numerous experts and researchers in various disciplines. This addictive behaviour has made controversy from the areas of scientific, medical, and technological communities. Internet addiction is an interdisciplinary phenomenon, and different researchers have investigated it from different perspectives from various disciplines, such as medicine, computer science, sociology, law, and psychology [26].

Researchers have also described internet addiction as "the modern addiction." In practice, this type of addiction is true dependency, like drug addiction and other kinds of dependency. Although this kind of dependency does not have the somatic problems of chemical addiction, its resultant social problems are like other types of addiction. [27] In the 2015 World Statistics report, the number of internet users and the population of countries were specified; it was reported that the total world population was 7,264,623,793, of which 3,079,339,857 were using the Internet, and the young made up the majority of users .[28]While taking into account many points of proper and practical use of the Internet and prevention of mental illness, these reported statistics underscore the importance of the Internet and social networks. Internet addiction is an etymological process of using the Internet that creates a psychological state in which the user's behaviour is disturbed, thereby leading to a dysfunction in his/her cognitive status.[29] Mental health is one of the main pillars of healthy human societies, which plays a vital role in ensuring the dynamism and efficiency of any society. As university students are among the most prestigious layers of societies, they present future builders in any country, and newly arrived students in universities from far-away cities are the first who fall victim to internet addiction. The mental health of the students is essential for raising their learning and scientific awareness [29]. Mental health is a concept that reflects our thinking, feelings, and functioning in dealing with various life situations. [30] In this modern world, the disease patterns are shifting toward no communicable diseases, and the rising rate of mental dysfunction and the resultant costs imposed on societies have attracted the attention of health promotion specialists. [28] In this regard, the Global Burden of Disease statistics has introduced mental illnesses as one of the three primary causes of lost years of life due to disability.[31] According to the WHO, mental health is defined as one's ability to communicate with others harmoniously; modify the personal and social environment; and resolve conflicts and personal preferences logically, fairly, and appropriately. [32] Besides, the statistics announced by the WHO reported that 52 million people of different age groups suffer from severe illnesses worldwide and 250 million have mild mental dysfunction.

MATERIAL AND METHODS

582 health sciences students (MBBS, BDS and PARAMEDICAL) students of Santosh Deemed to be University were selected for this descriptive analytical study by Cochrane's sample size formula and stratified random sampling. For Data collection Young's Internet Addiction Test was applied. The data was analyzed through t -test and Pearson's

correlation coefficient by incorporating SPSS Software (23.0) software. The questionnaire was given to health science students for data collection. It was kept anonymous by not asking the personal details of the students who were filling it and incomplete questionnaire were exempted from the study. Demographic questionnaire included questions on gender, age, stream of health science, hostler or day scholar, time and duration of using internet and the primary purpose of using it.

TOOLS

The Internet Addiction Test (IAT) (Young, 2011) is a 20-item scale that measures the presence and severity of Internet dependency among adults. Dr. Kimberly Young, a professor at St. Bonaventure University and director of the Center for Internet Addiction Recovery, developed the IAT to assess symptoms of Internet addiction and compulsivity in a variety of test settings. The 20-item questionnaire measures characteristics and behaviours associated with compulsive use of the Internet that include compulsivity, escapism, and dependency. Likerts Scale is used on the questions which have maximum to minimum scores from 20-100 and is 5 points. (5 = always, 4 = usually, 3 = most of the time, 2 = sometimes, and 1 = seldom). Three groups were made according to the score

Table 1

SCORE	GROUP
20-49	Normal User
50-79	At Risk
80-100	Addicted

Off late studies have showed that the score above 50 is termed as internet addiction. Content validity index was applied to confirm the reliability of the test while the surveys reliability was done through t -test.

General Health Questionnaire 28 was used to for accumulating data. The data thus collected was analyzed by t test and Pearson's correlation coefficient by using the SPSS Statistics software version 23.0. This questionnaire is useful in assessing the mental health of the individual with questions directed about abnormal thoughts, any change in behaviour etc. This questionnaire consists of the following four subscales: somatic symptoms (questions 1–7), anxiety (questions 8–14), social dysfunction (questions 15–21), and depression (questions 22–28). Each subscale contains seven questions that measure the various aspects of mental health, ranging from somatic to psychological dysfunction [33]. The questions presented scores with a 4-point Likert scale (0 = not at all, 1 = average, 2 = more than average, and 3 = far more than average). The minimum and maximum ranges illustrated 0–84, which showed categories into four levels of mental health, for instance, normal (0–22), weak (21–40), balanced (41–60), and severe (61–84). The highest ratings/scores represented the lowest level of students' mental health status.

Examples of some of the items in use include 'Have you found everything getting on top of you?', 'Have you been getting scared or panicky for no good reason?', and 'Have you been getting edgy and bad tempered?' Each item is accompanied by four possible responses: Not at all, No more than usual, Rather more than usual, and Much more than usual. There are different methods to score the GHQ-28. It can be scored from 0 to 3 for each response with a total possible score on the ranging from 0 to 84. Using this method, a total score of 23/24 is the threshold for the presence of distress. Alternatively the GHQ-28 can be scored with a binary method where Not at all, and No more than usual score 0, and Rather more than usual and Much more than usual score 1. Using this method any score above 4 indicates the presence of distress or 'caseness'.

Statistical Software for Social Sciences (SPSS) Software was used for analyzing the data and also descriptive and inferential statistics were used .Percentage ,mean and standard deviation were included in descriptive statistics and T test and Pearson's corelation and coefficient were included in inferential statistics.

RESULTS

582 health science students from various stream participated in this study including 267 (45.87%) males and 315(54.12%) females. Students that participated in this study were of 22.56 ± 3.47 years, average age . Most of the students were from MBBS (n =277)(47.59%) . One of the important finding that came out was that students living in hostel were more addicted to internet (52.40%).The results also indicated that maximum usage of internet was in evening time followed by morning(382/582 = 65.63 %) . Chatting with the peer group and to the family members was one of the commonest reasons for internet usage. The mean and standard deviation of students was 3.71 ± 0.77 and 2.46 ± 0.22 for internet addiction and mental health respectively which is like tip of iceberg indication of poor general mental health.

Table 2

Variable	Male (%)	Female (%)	Total (%)	*P*
Nonaddicted users (a score of 20-49)	23 (3.9)	67 (11.5)	90 (15.4)	0.013
At-risk users (a score of 50-79)	104 (17.8)	112 (19.2)	216 (37.11)	
Addicted users (a score of 80-100)	140 (24.05)	136 (23.36)	276 (47.4)	
Internet addiction	2.34 ± 0.46	2.26 ± 0.62		
Mental health	2.54 ± 0.31	2.51 ±0.32		

Pearson's coefficient correlation was applied to determine student's internet addiction and mental health. The result showed that, there is no statistical correlation with each other $P < 0.001$, $r = 0.051$. Students' somatic symptoms and depression had the highest and lowest relationship with internet addiction. The study results specified that students' depression and somatic symptoms had the highest ($P = 0.001$, $r = 0.156$) and lowest ($P > 0.001$, $r = 0.004$) relationships with internet addiction, as seen in Table 3.

Table 3

Variable	1	2	3	4	5	6
Somatic symptoms	1					
Anxiety	0.01	1				
Social dysfunction	0.051	0.067	1			
Depression	0.148**	0.002	0.153**	1		
Mental health	0.416**	0.368**	0.872**	0.336**	1	
Internet addiction	0.004	0.048	0.046	0.156**	−0.051	1

**Correlation was significant at the 0.01 level (two tailed)

Table 4 Regression analysis results

Variables	B	OR	P	95% CI for OR	
				Lower	Upper
Addicted Users	0.12	1.12	0.02	1.05	1.25
OCS	0.26	1.31	0.03	1.05	1.72
Anxiety	0.37	1.44	0.02	1.03	2.03

The results of regression analysis indicate that users which are addicted have higher level of obsessive compulsive symptoms and anxiety.

DISCUSSION

The present study was done to assess the internet addiction among health sciences students of North India and its effect on mental health. 46.7 % students of Santosh Deemed to be University were found to be addicted. This finding is in accordance with the studies conducted by Arslaan et ,Manish et al,Hilarie Cash et al[34,35,36] .Over indulgence of the internet usage can lead to strained relationships, thereby pushing a person into loneliness and adverse mental health .The study also showed certain demographic differences, like a significant difference between male and female distribution.

More number of male students were glued to internet (24.05 %) as compared to females (23.36%). These results were consistent with the results of studies conducted by Alavi et al., [37] Orsal et al, [38] whereas inconsistent with the results of studies performed by Atashpour et al. [39]and Shahbazirad and Mirderikvand. [40] This questionnaire type study showed that mental health disorders were more commonly seen in girl as compared to boys. This type of result shows

a grave concern about the mental health among girls. Imani et al, Taji et al[41]also described the same result. So prevention programs should equally concentrate on both boys and girls.

The result of the study was also in line with the other studies that showed more than half of the students had poor mental health. Significant difference was seen in the mean scores of depression and mental health Nastizai,Anderson,Chung and Wong et al[42,43,44] echoed the same result. In a study done by Javad on mental health of Iranian students at Iranian , it was shown the relationship between depression and internet addiction, it can be expressed that the excessive use of the Internet can lead to social isolation and depression through reducing familial, social, and local connection. Therefore, depression may occur as a result of internet addiction, and in this case, the internet addicts experience the resultant negative consequences, such as depression[45].

Regression Analysis showed that addicted users have higher level of obsessive-compulsive symptoms and anxiety. Yen JY et al supports the findings that students who have higher level of addiction are more prone to develop compulsive symptoms which can range from difficulty to control excessive use of internet,unnecessary checking the phone,laptop etc [46].Lee BW et al finding also showed IA affecting personal lives of the students. This should be taken as red flag and immediate measures should be taken to control it [47].

Limitations of the Study

Since it is a questionnaire and not one to one discussion, students among themselves can discuss and alter the answers accordingly.

Conclusions

According to this study, Internet addiction is the tip of an iceberg, as its effects are more deeper hampering students' mental health which indirectly affects academic performance. This study shows that with proper precautionary and preventive measures, this addiction can be controlled to a point where it does not affect his or her mental health. Counselling sessions can be done time to time for the students to help them break this vicious cycle of addiction.

Conflict Of Interest

No conflicts of Interest.

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