Prevalence of Internet Addiction among Medical Students of Jawaharlal Nehru Institute of Medical Sciences - A Cross Sectional Study

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ABSTRACT

BACKGROUND
Internet is a widely used tool. With its addictive property, this may lead to public health problems. The study intended to assess the prevalence & risk factors for Internet addiction in medical students of Manipur.

METHODS
This is a cross-sectional study conducted among medical students of Jawaharlal Nehru Institute of Medical Sciences (JNIMS) using Young's 20-items Internet Addiction Test (IAT) questionnaire.

RESULTS
The response rate was 83.79 %. About 1 / 5th of the students were Internet users with frequent or significant problems in their life.

CONCLUSIONS
About 1 / 5th of students in JNIMS reported problems from use of Internet. Semester, age, sex & religion of the students did not have any relationship with Internet addiction scores.

KEYWORDS
Internet Addiction, Validity, Reliability

BACKGROUND

Internet, now, is a new and vital tool that evolves every day in everyone's life across the world; its use and misuse happens more among young people.[1] The growth of Internet use in India has been becoming an explosion in the last decade and it also happened throughout the world as well. There is an increasing concern on whether there is excessive and, if so, to know whether it pertains to a level of addiction. People use it for education, entertainment and sharing information throughout the globe instantly. It becomes more accessible nowadays in homes, Internet cafes, schools, libraries and colleges; further, this access is enhanced with more affordability of computers in home along with high-speed connections in this last decade.[2]

Medical students globally use it as another main source of health-related information and means for further academic pursuance. In spite of it's widely perceived merits, many psychologists and educators opined of its negative impacts, especially it's over-use or misuse relating to an individual's physical and psychological problem.[1]

In fact, people are using Internet as a way in order to adapt or in order to cope the overwhelming developmental stressors. College students might have certain psychological factors along with environmental factors in their lives and this may make them disproportionately vulnerable to Internet addiction. In other way, those developmental stressors in an individual's life, coupled with freely accessibility to Internet services, may enhance college students more vulnerable to Internet dependent behavior. The two maladaptive outcomes particularly Internet use among college students comprises of face-to-face social interaction with their online social experiences, and thus, their identity formation with online pseudoidentities. It becomes quite obvious and reflects that Internet addiction by default, is often associated with many other forms in mental distress like impulse control disorder, depression and their low self-esteem. Greenfield suggested that as much as 6 % in Internet users might experience negative outcomes such as their marital disruption, poor school performance, more financial expenditures in shopping through Internet, or their illegal activity.[3]

In response to splurge on access to Internet globally along with cropping up in gadgets of new generations, the term 'Internet addiction' emerged as an important risk for significant pandemic of behavioral addiction which demands global attention in order to tackle it early. Internet addiction, ideally refers to an individual's inability for controlling his or her use of it (including any compulsive & online-related behavior) causing one's significant distress and impairment of function in their daily life.[4]

This term 'addiction' is traditionally used in order to describe an individual's physical dependence on certain substance,[5] and it has been applied nowadays, to the excessive use of the Internet. Again, Internet addiction disorder is also described as an excessive use of computer that interferes with one's daily life and it has the potential to impair one's daily function.[6,7] Internet addiction, in fact, is characterised by a form in addiction, and thus the people who suffered from it, can no more control themselves from using the Internet. This phenomenon, in return, results in a serious impairment of their psychosocial functioning.[8] Therefore, Internet addiction ultimately is considered as a psychiatric aberration in the forthcoming diagnostic and statistical manual (DSM-5.)[9]

Researchers described different manifestations in people suffering from Internet addiction. These include preoccupation with Internet use,[10,11] being online almost all the time, compulsion for using Internet, having perception that everything appears to be boring without Internet, more irritable if disturbed him or her while online, lack of communication with others, along with increased behaviors of depression.[12] Many studies depicted that people spending long time online were likely to be suffering from sleeplessness[12,13] and their interpersonal relationships were too compromised.[14] The studies had shown that Internet addiction in people's life could give rise to sleep disorders, impaired interpersonal relationships, malnourishment, anxiety, depression and other psychosomatic problems.

Different research in Western and Asian contexts appreciated the increasing order of risk from Internet addiction in young people. This marked phenomenon affects people with a varying frequency in the world by producing adverse impacts on their academic performance, financial, occupational and relationship aspects.[15]

There are a number of emotional factors relating to Internet addiction among college students. Of these, the most significant are depression, anxiety, and stress. Research on relationship between Internet addiction and depression had demonstrated that the excessive use of Internet had resulted in disruption of normal day-to-day lives of an individual and around. Indulge in the phenomenon could displace valuable time of people by compromising quality moments with friends and family, further it leaded to a smaller social circle; thus, an increased level of stress and loneliness. Many other studies also documented its impacts as a neglect in academic responsibility, domestic responsibilities and work; disturbances on relationships, socially isolated, and developing financial problems.[16]

Physical, social & psychological health has been seriously affected by overuse of Internet. It leads to poor academic performance, sleep deprivation, headache, eyestrain, poor dietary habits and many other psychological disorders like alcohol abuse, attention deficit hyperactivity disorder, depression, anxiety etc. It has also been proposed that some personal, familial, social characteristics has been strongly associated with addiction for example being male, initial course years, status in permanently logged, peer influencing, a preference of virtual interaction with friends; and to use online chats, obscene videos, virtual friendship and online shopping, time spent on Internet, assessing method of Internet, speed, accessibility, and content of information. It is in this context that this present study was undertaken to explore the ever-increasing problem of Internet addiction among medical students with the aim in order to assess the prevalence of Internet addiction among the medical students and the effect of Internet addiction on their health status so that strategies for the reduction of the addiction could be formulated, thus leading to healthful productive life.

Internet addiction, ultimately, may contribute to anxiety and stress causing troubles in communication and interaction with others in a healthy, positive, and meaningful way. Therefore, the paper attempts to understand the prevalence and risk factors of Internet addiction among medical students in a Govt. Medical College, Manipur.

METHODS

The study was a cross-sectional design conducted among the medical students of Jawaharlal Nehru Institute of Medical Sciences, Manipur from 8th Sept to 5th Oct 2014. More than 98 % of the participants were residing in the hostel while the remaining were day-scholar.

Data Collection

After explaining about the study, the students were asked for voluntary participation. All the questionnaires were distributed in the classroom among the consented students, absent students were contacted and provided the questionnaires in hostel or on next meeting after explaining and seeking of consent. However, for internees, the questionnaires were provided in hostel or workplace personally after consenting for voluntary participation. On next day, filled forms were collected after checking whether the participant filled the questionnaire fully; if not fully filled, participants were requested to fill the required area. We excluded students who dropped out from the college / deceased, refusal to give consent, were unable to respond due to sickness, unavailable even after three attempts of visits by the researchers.

The questionnaire consists of two parts:
1. Socio-demographic profiles.
2. "Young's Internet Addiction Test".

Young's 20-items scale for Internet addiction (YIAT 20)[17] was developed to assess the prevalence of Internet addiction. This questionnaire measured on the five-point Likert scale. Young's IAT, developed to screen and measure different levels of Internet addiction, had been well-tested and widely used considering its different psychometric properties. The items in the IAT, each rating from 1 (rarely) to 5 (always), include different compulsive behavior relating to individual's use of the Internet, the academic or occupational difficulties, lack of deliveries on expectation at home, problems in inter-personal relationship, and emotional aberrations. The scale reflects the greater the level of addiction higher the score range with varying ranges as, normal: 0 - 30 points, mild: 31 - 49 points, moderate: 50 - 79 points and severe: 80 - 100 points. Different literatures well-documented the excellent psychometric properties of the questionnaire. Young's diagnostic questionnaire is the first psychometric measure in the globe, and it is also used extensively & frequently across many studies globally. The tool itself is self-completed and it had been validated and used among adult and adolescent populations; it also had very good internal consistency, concurrent validity as well as reliability. A meta-analytic study in 2012, derived from large sample of studies was conducted in order to determine overall reliability of YIAT20, the mean differences in the study demonstrated that YIAT20 was comparatively more reliable among college students. The overall estimated Cronbach's alpha derived from the meta-analytic study was 0.889 [95 % confidence interval (CI) 0.884 - 0.895]. The standard deviation of the alpha was low, at 0.049.

Statistical Analysis

Data entry and analysis was done using IBM SPSS v22. Data were described using statistics like mean, standard deviation, percentage etc. whereas they were analysed using analytical statistics like chi-square. In analysis, a p value less than 0.05 was considered to be significant.

RESULTS

The total no. of eligible students was 571, out of which 92 were non-respondents so 479 students were included in our study population giving a response rate of 83.89 %. The mean age and Internet addiction scores were 22.31 years and 34.12 (mild) respectively.

Sl. No.	Characteristics	Class Interval	Frequency (%)
1.	Semester*	1st Semester	78 (16.3)
		2nd & 3rd	89 (18.6)
		4th & 5th	83 (17.3)
		6th & 7th	97 (20.3)
		8th & 9th	81 (16.9)
		Internees	51 (10.6)
2.	Age in years	17 - 20	110 (23)
		21 - 24	282 (58.9)
		≥25	87 (18.1)
3.	Sex	Male	245 (51.1)
		Female	234 (48.9)
4.	Religion	Hindu	189 (39.5)
		Christian	151 (31.5)
		Meitei	79 (16.5)
		Islam	50 (10.4)
		Others	10 (2.1)
5	Internet Addiction Test (IAT)	Normal users	199 (41.6)
		Mild	206 (43)
		Moderate	73 (15.2)
		Severe	1 (.2)
Total			**479 (100)**
Table 1. Baseline Information and IAT Scores of the Participants			

*Combination of two semesters reflects whole batch

Students from different semesters took similar participation in the study ranging from 16 to 20 %, however, internees took minimum participation i.e., 10.6 % and most of them were in the age group of 21 - 24 years (58.9 %). Both sexes too had similar participation. The students were Hindu by religion (39.5 %) followed by Christian (31.5 %) while other religions (2.1 %) comprised TRC, Jainism, Buddhism etc. Most of the students (84.6 %) were normal users or felt mild problems from Internet; however, the remaining users felt significant problems in their life.

Sl. No	Characteristics	Class Intervals	Internet Addiction Test n (%)				P-Value
			Normal	Mild	Moderate to Severe	Total	
1.	Semester	1st	37 (47.4)	34 (43.6)	7 (9)	78	0.430
		2nd & 3rd	34 (38.2)	38 (42.7)	17 (19.1)	89	
		4th & 5th	35 (42.2)	33 (39.8)	15 (18)	83	
		6th & 7th	34 (35.1)	42 (43.3)	21 (12.3)	97	
		8th & 9th	35 (43.2)	36 (44.4)	10 (12.3)	81	
		Internees	24 (47.1)	23 (45.1)	4 (7.8)	51	
2.	Sex	Male	93 (38)	111 (45.3)	41 (16.7)	245	0.267
		Female	106 (45.3)	95 (40.6)	33 (13.7)	234	
3.	Age in years	17 - 20	51 (46.4)	44 (40)	15 (13.6)	110	0.278
		21 - 24	108 (38.3)	122 (43.3)	52 (18.8)	282	
		≥ 25	40 (46)	40 (46)	7 (8)	87	
4.	Religion	Hindu	97 (51.3)	70 (37)	22 (11.7)	189	0.158
		Christian	52 (34.4)	70 (46.4)	29 (19.2)	151	
		Meitei	29 (36.7)	38 (48.1)	12 (15.2)	79	
		Muslim	16 (32)	24 (48)	10 (20)	50	
		Others	5 (50)	4 (40)	1 (10)	10	
	Total		199	206	74	479	

Table 2. Cross-Tabulation of IAT against Different Characteristics

The first-year students and internees were the least to have impact from Internet addiction as compared to other groups. Male sex was exposed to higher risk of having affected on their routine life. Higher age group had lesser chance to have moderate to severe effect on their routine life. However, none of the selected variables like semester, age, sex and religion had any significant association with scores of Internet addiction test.

DISCUSSION

The prevalence of Internet addiction through Internet addiction test (IAT) among students in a Govt. Medical College, Jawaharlal Nehru Institute of Medical Sciences JNIMS, Manipur was found to be more (43 %) in the group of mild i.e. having some problem due to use of Internet on their routine works and academic performance and this is followed by normal users (41 %). The remaining had significant effect on their routine work and academic performance. There was no relationship between different socio-demographic profiles with Internet addiction.

Study done by Malviya A et al. (2014) among medical students reported that there was no relationship between Internet addiction with sex of the participants.[18] Rajesh K did study among engineering students at Amritsar and found that there was no association between age, sex, graduation year with level of Internet addiction perceived by the students. The two studies were in conformity to our findings.

A cross-sectional study done by Cynthia S & Kalyani P in 2016 among 95 II MBBS students in Kurnool Medical College found that 76.84 % were reported to be in Internet addiction while the remaining were of normal users. While comparing across sex, males (32.21 %) were more in Internet addiction as compared to females (11.11). This relationship is found to be statistically significant (p < 0.05). The findings in their

study are different from ours. The plausible reasons could be that they were selecting participants only from II MBBS- the stage where, after clearance of I MBBS, there might have intensive search of study materials from Internet. Another issue is about sex presentation in their study – male 62.2 % and female 37.8 %. In the present study, we selected all semesters even including internees as well and the presentation of sex is almost similar.[19]

Chaudhari S et al. in 2019 did study on Internet addiction among undergraduate medical students in a Medical College of West Bengal; of all 400 students, 201 participants responded and of all those responded there were 74 % students having some or more problems in their routine life and academic pursuance from Internet use. Their finding is different from ours i.e. 57 %. The difference could have arisen with the difference in response rate (50 % vs. 84 %) and time factor (2019 vs. 2014).[20]

A web-based study done by Singh LK et al. 2019 among 2015 professionals in India on Internet addiction, found that 23 % of the participants were normal users while in the present study 43 % were normal users of Internet. The participants in their study included all professionals whereas in our study we did among medical students in Medical College.[21] A cross-sectional study done among Medical students studying at Faculty of Medicine in Recep Tayyip Erdogan University in 2016 - 2017 by Ardict C et al. found 90 % of them had at least some problem in their routine life and academic pursuance and this is different from our findings because of different wide geographical difference comprising of socio-economic conditions, social demands, different educational modes etc.[22]

Sharma A[15] et al. on their study on Internet addiction among professional course pursuing students in Madhya Pradesh reported the significant relationship with sex (p = 0.000) & education (p = 0.010); this was different from the findings of the present study. Probably, it was because that our students were only MBBS while their study included students from MBBS, Physiotherapy and BE. The age group of participants were different as 15 years and onwards in their study while in ours as 17 years and onwards.

CONCLUSIONS

About 1 / 5th of students in JNIMS reported problems from use of Internet. Semester, age, sex & religion of the students did not have any relationship with Internet addiction scores. Considering the possible impact, it is recommended that possible and appropriate measures are taken in order to promote awareness regarding problems of Internet use and to develop a healthy behavior with regard to Internet use. Initiatives must be taken in order to create opportunities for relaxation, recreation and other extra-curricular activities. There is a need to create awareness among medical students so as to improve their ability to reduce the incidence of Internet addiction behavior thus promoting a healthy growth.

Limitations of the Study

The study is a cross sectional design and it is inherently incomplete by itself for this topic. In fact, the ideal study design must be an initial evaluation and scoring with a prospective follow-up. The questionnaires of the study failed to differentiate between compulsive and non-compulsive use of the Internet for a specific purpose. Also, the pattern of Internet use over a given time frame may vary. These important factors were not taken into consideration in the study itself. Time factor of the researchers was an important limiting factor.

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