

ORIGINAL ARTICLE

Internet addiction among medical undergraduates in a medical college of West Bengal- a cross-sectional study

Susmita Chaudhuri¹, Rekha Dutt², Shamshad Ahmad³

¹Department of Community Medicine, ESI-PGIMSR & ESIC Medical College, Joka, Kolkata; ²Additional Professor, Department of Community and Family medicine, All India Institute of Medical Sciences, Kalyani, West Bengal;

³Department of Community Medicine, All India Institute of Medical Sciences, Patna, Bihar

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Corresponding Author

Corresponding Author: Rekha Dutt, Department of Community Medicine, 4th floor, Academic building, ESI-PGIMSR & ESIC Medical College, Joka, Kolkata, 700104

E Mail ID: rekha_dutt100@rediffmail.com



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Abstract

Background: The era of 21st century is burdened with internet usage worldwide specially in the developing countries such as India. Internet addiction has been related to physical, social, psychological impairment. **Aim & Objectives:** To find out the prevalence of internet addiction among the medical students and the effect of internet addiction on health status among them. **Settings and Design:** This was an observational descriptive study of cross-sectional design conducted in a tertiary medical college of West Bengal. **Material & Methods:** All the undergraduate medical students were approached and interview was done using interview schedule consisting of sociodemographic characteristics, Young's criteria of internet addiction test and Duke's health profile screening test. **Statistical analysis used:** Data was analysed using SPSS version 20 & presented in percentages, mean with standard deviation, ANOVA with Tukey's Post-hoc test. **Results:** Total of 201 participants responded giving a response rate of about 50%. The distribution of respondents as per Young's criteria of internet addiction which showed that majority of the respondents were mild addicted (58.7%) & moderate addicted (15%). Comparison of Duke health profile score across various internet addicts where physical health score differs significantly among the non-addicted (81.42+20.02) vs mildly addicted (67+20.36) & moderately addicted (63.31+ 20.15) participants ($p=0.00$). Mental health score also differs considerably among the non-addicts (78.16+18.36) vs mildly addicts (67+18.28) & moderately addicts (61.87+18.33) ($p= 0.00$). **Conclusions:** A good number of medical students were addicted to internet that requires timely remedial action. Educational institutions had to formulate strategies so that proper action could be taken.

Keywords

Internet Addiction; Medical Undergraduates

Introduction

Internet addiction disorder (IAD) also commonly known as problematic internet use (PIU) refers to excessive usage of internet leading to interference with day to day life of an individual. The term was established as compulsive internet use or

pathological internet use. The term 'Internet Addiction' was coined by Dr Tarun Goldbery in 1995 for pathological internet use and it was considered as a subset of behaviour addiction by Griffith. (1) This 21st century has noticed a tremendous hike of internet usage worldwide specially in the developing

countries such as India. Previous usage of internet was restricted to only information exchange and research purpose, but it has literally overshadowed every aspect of human life including social communication, education, research, health seeking, banking, business, shopping, administration, and entertainment. Now, internet has been regarded as the indispensable utility in modern age. But excessive use of internet could be pathological & harmful. (2) Many researchers have used the term internet addiction to identify the abuse of internet, (3,4) internet addiction disorder, (5) pathological internet use, (6,7) or Internet dependency. (8) Though the ill effects of excess internet activities were recognized earlier, internet addiction was recognized as a psychological disorder only in the mid-1990s. (9) Since then, it has been considered a subset of behavioral addictions which has become a topic of research of various scholars through internet gaming disorder has been included in the section of "condition for further study."(10,11)

Studies have shown that the prevalence of internet addiction varies from 03% to 38% depending on the study population, methodology, and diagnostic instrument used to assess internet addiction. (12) Many studies have shown that internet addiction affects the adolescent and college goers because of their psychosocial and environmental characteristics. (13,14)

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 and anxiety etc. It has also been proposed that some personal, familiar, social characteristics has been strongly associated with addiction for example male gender, initial course years, permanently logged in status, peer influence, preference for virtual interaction with friends; and using the 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 the present study was undertaken to explore the ever-increasing problem of internet addiction among medical students with the aim to find out the prevalence of internet addiction among the medical students and the effect of internet addiction on health status among them so that strategies for the reduction of

the addiction could be formulated, thus leading to healthful productive life

Aims & Objectives

1. To assess the prevalence of internet addiction among the medical students
2. To find out the association of internet addiction with health status of the medical students

Material & Methods

This was an observational descriptive study of cross-sectional design conducted in a medical college of West Bengal. Study population comprised of undergraduate medical students of the institution. After obtaining permission from Institutional Ethics Committee, all 400 undergraduate medical students enrolled in the institution, were approached in lecture halls, hostels and campus. The study duration was three months. After explaining the purpose of the study, verbal consent was taken. The participants who did not give consent were excluded from the study. Participants were reassured about their anonymity and participation was completely voluntary & they could drop at any time. One to one interview was done using interview schedule consisting of sociodemographic characteristics, Young's criteria of internet addiction test and Duke's health profile screening test. Young's criteria of internet addiction test is a 20 item 5 point likert scale which is used for measuring the severity of internet addiction. This is a self-reported instrument. The score ranged from 20 to 100 with a good internal consistency (alpha coefficient 0.93). According to Young's criteria total IAT score of 20-39 represent average users with complete control of their internet use, score 40-69 represent over-users with frequent problems, 70-100 represent internet addicts with significant problems caused by internet use. (4)

The Duke Health profile is a 17-item generic questionnaire which measures self-reported functional health within one-week time window. Each item has been measured with a scale ranging 0-100. Out of 11 scales 6 scales i.e. physical health, mental health, social health, general health, perceived health and self-esteem measure function indicate better health if they score high. Rest of the scale which measure anxiety, depression, anxiety-depression, pain disability measuring dysfunction with higher score indicate bad health. For physical health, mental health, social health, general health, self-esteem and perceived health, 100 indicates the best health status, 0 indicates the worst health

status. For anxiety, depression, anxiety-depression, pain, disability, 100 indicates the worst health status and 0 indicates best health status. Internal consistency of this scale is also good with alpha coefficient being 0.91.(15)

Data so collected were checked for consistency & completeness. Then was analysed using SPSS version 20. Data were presented in percentages, mean with standard deviation. ANOVA with Tukey's post-hoc test was used to measure the differences across various groups of internet addicts.

Results

Total of 201 participants responded giving a response rate of about 50%. Almost equal representation from male and female students was appreciated. Majority of the participants were from 1st & 2nd year (70%). Around 8 in 10 students were from urban area. Hostellers were more in number compared to day-scholars (65% vs 35%). All the respondents have been using internet daily for 2-3 hours for last 6 months. Majority of them (93%) used mobile for accessing internet. Around 83% of the respondents used internet for education purposes whereas 76% of them used it for social networking. Around 16% of the respondents used internet for being accepted by peers while seven percent of them used this platform for boasting. Majority of them spend around 100-500 Rs monthly for accessing internet. Around 60% of the respondents were night-users.

(Table 1) describes the distribution of respondents as per Young's criteria of internet addiction. In our study, we found that majority of the respondents had mild addiction (58.7%) & moderate addiction (15%).

(Table 2) shows the distribution of respondents according to Duke health profile where mean physical health score was 70.24+20.31, Mental health score was 68.90+18.23, Social health score was 65.52+16.85, general health score was 71.48+44.21, perceived health score was 71.94+29.33. Self-esteem score was 76.25+16.59, Anxiety score was 36.29 +17.34, depression score was 34.71+19.92, Anxiety-depression score was 34.38+18.12, Pain score was 24.13+30.03 and Disability score was 5.97+18.41.

(Table 3) shows the comparison of Duke health profile score across various internet addicts where physical health score differs significantly among the non-addicted (81.42+20.02) vs mild addicted

(67+20.36) & moderate addicted (63.31+ 20.15) participants (p=0.00). Mental health score also differs considerably among the non-addicts (78.16+18.36) vs mild addicts (67+18.28) & moderate addicts (61.87+18.33) (p= 0.00). Whereas there was no statistically significant difference between the addicts & non-addicts in social, general health score & self-esteem score. Perceived health score differs considerably (p=0.00). There was significant difference among non-addicts vs mild vs moderate addicts in anxiety score and depression score and anxiety-depression (p= 0.00 & p=0.00 & p=0.00 respectively). No statistical difference was found among the various groups in pain & disability score

Discussion

The present study tried to assess the level of internet addiction among medical students and its effects on health profile.

Many of the students accessed internet through mobile as available smartphones with free internet services provide the opportunity to the medical students to have easy and continuous access to internet which lead to unjustified overuse. Quite a good number of students use internet for academic purposes as well as social networking. Many other researchers have found out that using internet for social networking, watching videos, and visiting websites with sexual content were significantly associated with internet addiction. (7,9) In the present study, good amount of money and time are spent on internet leading to financial problems as well as distraction from academic achievements.

In our study we find that majority of the respondents were mild addicted (58.7%) & moderate addicted (15%). None of them fell under the category of severe addiction. Findings were quite comparable with other authors like Duraimurugan et al which show the prevalence of internet addiction as 56.6% in a south Indian medical college.⁹ Another study conducted in North India found that the prevalence of internet addiction was 41.3%. Many other international studies showed lower prevalence of internet addiction i.e. around 10% in Turkish & Iranian medical students. (16,17) The differences could be because of different study population as well as different diagnostic tools being used.

Use of Duke health profile for measuring health status of the participants showed poor physical health score, mental health score, perceived health

score among the internet addicts. Whereas there was no statistically significant difference between the addicts & non-addicts in social, general health score & self-esteem score. There was significant difference among non-addicts vs mild and moderate addicts in anxiety score, depression score and anxiety-depression even-though no statistical difference was found among the various groups in pain & disability score. Similar finding have been found by Dong et al which suggested significant higher score in depression, anxiety, hostility, interpersonal sensitivity and psychotism. (18) A study conducted by Ceyhan and Ceyhan in their study of Turkish University students also reported that one of the predictors of problematic internet use was loneliness and depression.(19) A study in Kerala among junior doctors depicted that 13% had moderate internet addiction(20) whereas study in Chile showed 11.5% internet addiction among medical students.(21) A meta-analysis study published in 2018 shows that pooled prevalence of IA among medical students is 5 times than that of general population.(22) Mishra et al studied that severity of IA has deleterious effect on academic performance,(23) which is cause of concern for the society as it may affect quality of health care. Observations of present study are consistent with other national and international studies

Conclusion

The present study shows the prevalence of internet addiction and its association with health among medical undergraduates in eastern India where a good number of medical students are addicted to internet that requires timely remedial action. This study also displays the difference in Duke health score among the internet addicts and non-addicts which shows that addicts had poor physical, mental, perceived health score, anxiety, depression score. This leads to a conclusion that urgent remedial measures should be formulated for the current urgent issue

Recommendation

Educational institutions are to formulate strategies so that proper action can be taken. A comprehensive program consisting of recommendations like keeping mobile data off, avoid using internet at night, avoid during classes & lectures etc. should be prepared to increase awareness of the internet addiction among medical students and faculties of college. Strategies to detect students at risk should be inbuilt in

curriculum with appropriate counselling. Every attempt should be made to ensure that safe and healthy internet use must prevail in an educational institution premise

Limitation of the study

This study is limited by social desirability bias. The difference between the Duke health score does not reflect cause-effect relationship as it is limited by the study design.

Relevance of the study

This study is one of its kind in eastern India as it reflects the prevalence of internet addiction among future doctors and how they are likely to suffer from various health issues

Authors Contribution

All authors have contributed equally on this manuscript.

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Tables

TABLE 1 DISTRIBUTION OF RESPONDENTS ACCORDING TO THEIR IAT SCORE (N=201)

Degree of internet addiction	Number(n)	Percentage (%)
Not addicted (0-19)	52	25.87
Mild (20-49)	118	58.70
Moderate (50-79)	31	15.42
Severe (80-100)	0	0

TABLE 2 DISTRIBUTION OF RESPONDENTS ACCORDING TO DUKE’S HEALTH PROFILE (N=201)

Score	Mean	Standard deviation
Physical health score	70.24	20.31
Mental health score	68.90	18.23
Social health score	65.52	16.85
General health score	71.48	44.27
Perceived health score	71.94	29.33
Self-esteem score	76.25	16.59
Anxiety score	36.29	17.34
Depression score	34.71	19.92
Anxiety-depression score	34.38	18.12
Pain score	24.13	30.03
Disability score	5.97	18.41

TABLE 3 COMPARISON OF DUKE’S HEALTH PROFILE ACROSS VARIOUS INTERNET ADDICTS (N=201)

Duke’s health profile scores	Not addicted (mean + SD)	Mild addicted (mean + SD)	Moderate addicted (mean + SD)	p value
Physical health score	81.42+20.02	67+20.36	63.31+20.15	0.00*
Mental health score	78.16+18.36	67+18.28	61.87+18.33	0.00*
Social health score	63.87+16.44	66.58+16.88	64.06+16.85	0.54
General health score	74.27+13.21	72.33+44.38	64.06+44.34	0.48
Perceived health score	83.67+28.31	68.33+29.34	65.62+29.37	0.00*
Self-esteem score	75.44+16.17	76.33+16.61	77.18+16.53	0.89
Anxiety score	29.63+17.36	37.46+17.36	42.12+17.37	0.00*
Depression score	24.08+20.13	38.25+19.94	37.07+19.89	0.00*
Anxiety depression score	25.54+19.93	36.28+18.11	40.79+18.13	0.00*
Pain score	20.41+29.43	25.41+30.06	25.00+29.63	0.59
Disability score	3.06+18.71	7.5+18.46	4.68+18.45	0.32

*significant ANOVA test, post-hoc Tukey’s HSD shows significant difference between not addicted vs mild addicted also between not addicted vs moderate addicted. No significant difference was found between mild addicted vs moderate addicted internet user