



INTERNET ADDICTION AND ITS ASSOCIATION WITH PSYCHOPATHOLOGY IN UNDERGRADUATE STUDENTS OF MEDICAL COLLEGE IN CENTRAL INDIA: A CROSS SECTIONAL STUDY

Dr. Ketan R. Dagdiya	Assistant Professor, Department Of Community Medicine, Indira Gandhi Government Medical College, Nagpur - 440018.
Dr. Jyotsna S. Deshmukh*	Associate Professor, Department Of Community Medicine, Indira Gandhi Government Medical College, Nagpur - 440018. *Corresponding Author
Dr. Sneha Patil	Senior Resident, Department Of Community Medicine, Byramjee Jeejeebhoy Government Medical College, Pune - 411001.

ABSTRACT **Background:** In the last decade, there has been an explosive growth in the use of internet not only in world but also India. Hence, this study aims to study the prevalence of Internet addiction among undergraduate students by using Internet Addiction test, and health status by using Dukes health profile and association of internet addiction with psychopathology among undergraduate students of medical college, in Central India.

Methodology : Cross-sectional study was carried out at Medical college of Nagpur in Central India during the period of June to August 2015. Total 244 students of age group 18-23 years from 1st MBBS to final MBBS, both male and female and those using internet since 6 months were included. Those having psychological illnesses were excluded. Data was collected by using semi structured questionnaire including socio-demographic characteristics, Internet addiction test questionnaire and Dukes health profile. Data analysis was done by Epi info 7 and SPSS 20.

Results- Mean age of students in our study was 21.59 ± 1.09 years. As per Young's criteria, 4.92% were addicts with male predominance, 47.13% were possible addicts and rest were average users. Using Dukes health profile, among male there was significant relationship between internet addicts and mental score, anxiety score and disability score while in females there was significant relationship between addicts and physical score, social score, anxiety depression score and pain score.

Conclusions- Internet addiction is growing problem. Prevalence of internet addiction is 4.92%, also possible addicts is at alarming condition. Internet addiction is having psychological, physical, and social impact on students life.

KEYWORDS : Internet addiction test, Dukes Health Profile, Psychopathology.

INTRODUCTION

In the last decade, there has been an explosive growth of internet usage not only in world but also in India. Easy access and social networking are two of the several aspects of the Internet fostering addictive behavior.(1) The internet has become more accessible in homes, schools, colleges, libraries and internet cafes; access is further aided with the increasing affordability of home computers and high-speed connections over the last decade.(2) Social networking phenomenon, moving one step forward, has redefined human interaction and knowledge sharing, especially for paradoxically 'unsocialised' individuals by discarding the need for traditional interactive processes. Various motives for internet use include entertainment, information, gaining recognition and maintaining relationships, pathological internet use has been associated with social networking and online chatting, identified across the countries.(3) There were about 42 million active internet users in urban India in 2008 as compared to 5 million in 2000. The term "internet addiction" was proposed by Dr. Ivan Goldberg in 1995 for pathological compulsive internet use.(4) This technological tool is subject to the problem of overuse which has become apparent resulting in "Internet Addiction". Adolescence, mainly college going students are particularly vulnerable group for the problematic internet use.(5) The term "addiction" has generally been associated with substance use. However, problematic internet use is increasing day by day. It has been suggested that excessive internet use could represent addictive behaviour with mental health implications.(6) Recently, it has been reported that internet based activities such as gaming, chatting and pornography have been showing similar levels of addiction as those of drug and substance abuse.(7) Internet addiction (IA) has been described as an emerging behavior related to the development of new technologies.(8) Hence, this study aims to study the prevalence of Internet addiction among undergraduate students by using Internet Addiction test and health status by using Dukes health profile and association of internet addiction with psychopathology among undergraduate students of medical college in Central India.

AIMS AND OBJECTIVE -

- 1) To study the prevalence of Internet addiction among undergraduate students by using Internet Addiction Test.
- 2) To study the health status by using Dukes Health Profile.
- 3) To study association of internet addiction with psychopathology.

MATERIALS AND METHODS

A cross-sectional study was carried out in medical students belonging to medical colleges in the Nagpur city in Central India. The study period was June to August 2015. The study participants were selected by using simple random sampling. Data collection was done after approval of Institutional Ethical Committee. Written informed consent of each participant was taken. All medical students between age group of 18-22 years, both male and female, those who were using internet since last 6 months were included in this study. Those who didn't give valid consent and those who were not using internet were excluded from this study. Data collection was done by using pre-designed and pre-tested questionnaire.

The Internet Addiction Test (IAT; Young, 1998) is a 20-item 5-point Likert scale that measures the severity of self-reported compulsive use of the internet. Total internet addiction scores was calculated, with possible scores for the sum of 20 items ranging from 20 to 100. The scale showed very good internal consistency, with an alpha coefficient of 0.93. According to Young's criteria, total IAT scores 20-39 represent average users with complete control of their internet use, scores 40-79 represent over-users with frequent problems caused by their internet use, and scores 80-100 represent internet addicts with significant problems caused by their internet use.(9) Young's IAT is the only available test whose psychometric properties have been tested by Widyanto and McMurrin.(10) The Duke Health Profile is a 17-item generic questionnaire instrument designed to measure adult self-reported functional health status. There are 11 scales with maximum score for each scale being 100 and minimum being 0. Six scales (i.e., physical health, mental health, social health, general health, perceived health, and self-esteem) measure function, with high scores indicating better health. Five scales (i.e., anxiety, depression, anxiety-depression, pain disability) measure dysfunction, with high scores indicating greater dysfunction.(11)

RESULTS-

The study questionnaire was administered and responses were obtained from 244 medical students.

Table 1- Distribution of study subjects according to sociodemographic characteristics

Sociodemographic characteristics		Number (N=244)	Percentage
Gender	Males	138	56.56
	Females	106	43.44
Study year	First MBBS	70	28.68
	Second MBBS	68	27.86
	Third MBBS	106	43.44
Socioeconomic status	Upper Class	190	77.87
	Upper middle	42	17.21
	Lower middle	8	3.28
	Upper lower	4	1.64

Out of 244 students, 138 (56.56%) were males and 106 (43.44%) were females. The mean age of the students was 21.59 ± 1.09 years. First MBBS students were 70(28.68%), Second MBBS were 68(27.86%) and Third MBBS were 106(43.44%). Out of 244, majority 190(77.87%) belongs to Upper socioeconomic class as per BG Prasad scale.

Table 2-Gender wise distribution of Internet Addiction Test score

Score	Pattern	Males n(%)	Females n(%)	Total n(%)
20-49	Average user	77 (55.80)	40 (37.74)	117 (47.95)
50-79	Possible addict	53(38.41)	62 (58.49)	115 (47.13)
80-100	Addicts	8(5.80)	4(3.77)	12(4.92)
Total		138(100)	106 (100)	244 (100)

Using Young's original criteria, Internet Addiction Test score was calculated. Depending on the IAT score, the internet users were divided into groups such as average users 117(47.95%), possible addicts 115(47.13%) and addicts 12(4.92%). Prevalence of internet addiction was significantly more among male student as compared to female students. (Chi square value is 9.709 and p value is 0.0077). The prevalence of possible addict is also alarming. It is more in female 62(58.49%) as compared to male 53(38.41%).(Chi square value = 9.661 and p value = 0.001)

Table 3- Association of Internet addiction and psychopathology

Variables	Gender	Average users	Possible addicts	Addicts	Kruskal wallis test	
					Chi square	P value
Physical score	Male	80	80	85	0.805	0.669
	Female	80	70	85	7.463	0.024*
Mental score	Male	70	80	65	6.303	0.043*
	Female	80	80	85	0.644	0.725
Social score	Male	80	80	60	4.690	0.096
	Female	80	70	85	13.65	0.011*
General health score	Male	80	80	73	2.572	0.276
	Female	80	80	85	1.226	0.542
Perceived health score	Male	100	100	75	0.700	0.705
	Female	100	100	100	2.393	0.302
Self esteem score	Male	90	80	95	3.279	0.194
	Female	80	80	75	0.236	0.889
Anxiety score	Male	33.32	24.99	33.32	6.329	0.042*
	Female	25.98	25.98	20.82	0.400	0.819
Depression score	Male	30	30	25	0.009	0.995
	Female	30	30	15	3.526	0.17
AD score	Male	28.56	14.28	28.56	2.283	0.319
	Female	21.42	28.56	17.85	12.853	0.002*
Pain score	Male	50	50	50	1.531	0.465
	Female	00	50	00	28.225	0.001*
Disability score	Male	00	00	00	7.462	0.024*
	Female	00	00	00	0.342	0.843

Using Kruskal wallis test, the mental score, anxiety score, disability score was found to be statistically significant between three groups of male students. Similarly among female students, the physical score, social score, anxiety depression score and pain score was found to be statistically significant between three groups.

DISCUSSION

A dramatic change did take place in the mid-late 1990s and early 2000s. Rapid growth of the Internet has been accompanied by questions about its impact, both positive and negative, on society and users.(2)

In the present study mean age of students was 21.59 ± 1.09 years.

Krishnamurthy and Kumar conducted a study in college students in Bengaluru found the mean age as $19.2 (\pm 2.4)$ years which was similar to our study.(1) While Chakraborti, et al. found mean age of the participants was $20.41 (\pm 1.64)$ years.(3)

In our study prevalence of addicts was more 4.92%, and possible addicts were 47.13%. Study conducted by Chakraborti, et al. in medical students found that 80.6% students were moderate(average) users, and 19.4% were problem(possible addicts) users.(3) Nath K et al. conducted a study in medical students and found that 0.5% were addicts, 46.3% were possible addicts.(12) In an Iranian study, by Ghamari F et al. the prevalence of internet addiction was reported to be 10.8% in medical students.(13) Sharma P et al. conducted study in school children and found prevalence of internet addiction to be 3.96% in boys and 1.62% of girls.(14).Tsai HF et al. found that 17.9% of Taiwanese students had internet addiction by Chinese Internet Addiction Scale-Revision.(15) Overall score, irrespective of gender only social score(p value=0.011) was significantly associated with addicts in this study. But there is significant relationship between mental score, anxiety score and disability score and addiction in male students only, while there was significant relationship between physical score, social score, anxiety depression score and pain score and addicts in female students. Study conducted by Goel, et al.2013 found that addicts have poor mental, physical, and mental health score. No significant relationship was found between self-esteem score and internet addiction. Addicts had high anxiety, depression, and anxiety depression score.(4) While Subhasree Mishra observed that there is no statistically significant correlation between IAT score and psychopathologies.(16)

CONCLUSION -

In the last one decade, internet has become an integral part of our life. Internet addiction is growing problem, which has psychological, physical, and social impact on students life, and requires preventive strategies as well as therapeutic interventions. Prevalence of Internet addiction was 4.92% with male predominance and significant relationship of social score with addicts. This finding can be utilized for conducting research to assess internet addiction and psychopathological effect among medical students.

Strength

Internet addiction test and Dukes health profile are easy and cost effective method to assess the internet addiction and psychopathologies arising from it among the students studying professional courses.

REFERENCES

- Krishnamurthy S, Chetlapalli SK. Internet addiction: Prevalence and risk factors: A cross-sectional study among college students in Bengaluru, the Silicon Valley of India. *Indian J Public Health*. 2015;59(2):115–21.
- Al-hantoushi MN, Al-abdullateef SH. Internet addiction among secondary school students in riyyadh city, its prevalence, correlates and relation to depression: a questionnaire survey. *Int J Med Sci Public Heal*. 2014;3(1).
- Chakraborti A, Ray P, Islam M, Mallick A. Medical undergraduates and pathological internet use: Interplay of stressful life events and resilience. *J Heal Spec*. 2016;4(1):56.
- Goel D, Subramanyam A, Kamath R. IR. A study on the prevalence of internet addiction and its association with psychopathology in Indian adolescents. *Indian J Psychiatry*. 2013;55(2):140–3.
- Panicker J, Sachdev R. Relations Among Loneliness, Depression, Anxiety, Stress and Problematic Internet Use. *Int J Res Applied, Nat Soc Sci*. 2014;2(9):1–10.
- Sharma A, Sahu R, Kasar P, Sharma R. Internet addiction among professional courses students: A study from central India. *Int J Med Sci Public Heal*. 2014;3(8):1.
- Kwon M, Kim D-J, Cho H, Yang S. The smartphone addiction scale: development and validation of a short version for adolescents. *PLoS One*. 2013;8(12):e83558.
- Berner JE, Santander J, Contreras AM, Gómez T. Description of internet addiction among Chilean medical students: A cross-sectional study. *Acad Psychiatry*. 2014;38(1):11–4.
- Young K. Internet Addiction: The Emergence of a New Clinical Disorder. *1(3) 237-244*. 2009. *Cyberpsychol & Behav*. 2009;1(3):237–44.
- Pramanik T, Sherpa MT, Shrestha R. Internet addiction in a group of medical students: a cross sectional study. *Nepal Med Coll J*. 2012;14(1):46–8.
- Schuntermann MF. The Duke Health Profile (DUKE). *Rehabilitation (Stuttg)*. 1997;36(1):1–XIV.
- Nath K, Naskar S, Victor R. A cross-sectional study on the prevalence, risk factors, and Ill effects of internet addiction among medical students in northeastern India. *Prim Care Disord*. 2016;18(2):1–6.
- Ghamari F, Mohammadbeigi A, Mohammadalehi N, Hashiani A. Internet addiction and modeling its risk factors in medical students, Iran. *Indian J Psychol Med*. 2011 Jul 1;33(2):158–62.
- Sharma, Payal, Bharti, Anup, De Sousa, Avinash, Shah N. Internet addiction and its association with psychopathology : a study in school children from Mumbai, India. *Natl J Community Med*. 2016;7(1):2–5.
- Tsai HF, Cheng SH, Yeh TL, Shih C-C, Chen KC, Yang YC, et al. The risk factors of Internet addiction--a survey of university freshmen. *Psychiatry Res*. 2009 May;167(3):294–9.
- Subhasree Mishra. A correlative study to assess the internet addiction and psychopathologies among the students of SOA University Bhubaneswar'n. *IOSR J Nurs Heal Sci*. 2015;4(1):66–9.