



## A STUDY ON THE PREVALENCE OF INTERNET ADDICTION AND ASSOCIATED DEPRESSION AMONG MEDICAL STUDENTS OF A GOVERNMENT MEDICAL COLLEGE OF BIHAR

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**ABSTRACT** **BACKGROUND:** The use of internet in the modern day era has been on the rise and has affected the student population including the medical professionals and students. There is a concern about this that whether this is excessive amounting to addiction among the students and affecting their mental health.

**AIMS & OBJECTIVES:** To study the prevalence of internet addiction and associated depression among medical students using internet.

**MATERIALS AND METHODS:** A cross-sectional study was conducted with a sample size comprising of 260 medical students of Anugrah Narayan Medical College & Hospital, Gaya, Bihar after obtaining Ethical Committee approval. Students were assessed using a specially constructed semi-structured Performa, The Internet Addiction Test (IAT; Young, 1998) and Beck depression inventory (BDI). Data was evaluated using the Statistical Package for the Social Sciences (SPSS Inc. version 17.0).

**RESULTS:** of the total students who took part in the study, 202 (77.7%) were males and 58 (22.3%) were females. The mean age was 23 years. Of the total, about 30.4% were moderate (average) users and 14.6% was found to be addicts. Those with excessive use of internet had high scores on depression.

**CONCLUSION:** In the recent era of emerging massive internet use, we must guard against excessive internet use and be cautious regarding related psychopathology.

**KEYWORDS :** Medical students, Internet addiction, Depression

### INTRODUCTION:

Internet is the shorter form of the technical term 'Internet work', and its use began in the 1950s and 1960s with the development of computers. Its use has been rising ever since at an alarming rate in the last few decades and now it has exploded to the extent of becoming an integral part of our daily lives. The internet on one hand is used to facilitate research, for interpersonal communication, to seek information, business transactions while on the other hand; it is also used to indulge in pornography, chatting for long, and gambling.

In the field of medicine, it helps in practice of evidence based medicine, research and learning, access to medical and online databases, managing patients in remote areas, and academic and recreational purposes.[1] There have been concerns for its usage in excess for what is been labelled "internet addiction." Griffith considered it a subset of behaviour addiction. [2] Dr. Ivan Goldberg in 1995 gave the term "internet addiction" for pathological compulsive internet use. [3] Young proposed different types of internet addiction-net compulsions, cyber-sexual addiction, cyber-relationship addiction, information overload, and computer addiction. [4]

The prevalence of internet addiction varies from 1.5% to 25% in different populations. Surveys have shown a prevalence of 0.3-0.7% in the general population. [5] A recent study reported a prevalence of 0.7% among Indian adolescents. [6] Scherer found it to be 14% among the college-based population. [1]

Internet is being used extensively by adolescents and youth. Its problematic use is associated with various psychological symptoms [7] and various studies have shown a negative impact of internet addiction on psychological well-being of students. [8] Considering this, it is important to analyze the pattern of internet use among health undergraduates who are quiet vulnerable student population. Hence, we aimed to study its prevalence and relationship with depression among medical students of a medical college in Gaya, Bihar.

### MATERIALS AND METHODS:

The aim of the study was to study the prevalence of internet addiction and associated depression among medical students. It was a cross-sectional study carried out in a government medical college of Gaya, Bihar during the period of year 2015-2016. It included about 260 medical college students (aged 18-28 years) of both sexes having access to internet for the past 6 months who were willing to participate

in the study and gave their consent. Purposive sampling technique was used and a semi-structured Performa specially designed for the study along with the scales Internet Addiction Test (IAT) and Beck depression inventory (BDI) were distributed among the medical students of all batches first year to final year including the interns and necessary instructions were given.

The study was conducted after obtaining the approval from the ethical committee. Of the total 300 Performa distributed using random sampling technique, 40 could not be included in the study as they either did not give their consent to participate in the study or the Performa received were incomplete. Thus, a total of 260 students were finally included in the study.

### Tools used in the study were:

1. Semi-structured Performa that contained details of age, sex, gender, educational qualification, main purpose of using the internet (education, social networking, entertainment, online transactions).

2. The Internet Addiction Test (IAT; Young, 1998) [9] is a 20-item 5-point likert scale that measures the severity of self-reported compulsive use of the internet. Total internet addiction scores are calculated, with possible scores for the sum of 20 items ranging from 20 to 100. The marking for this questionnaire ranges from 20-100; the higher the marks are, the greater the dependence on the internet is. According to Young's criteria, total IAT scores 20-49 represent average users with complete control of their internet use, scores 50-79 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.

3. Beck's Depression Inventory (BDI-II, 1996): Beck's Depression Inventory is a widely used, validated instrument for measuring depression. It is a self-rated scale, in which individuals rate their own symptoms of depression. It provides a fast, efficient way to assess depression in either a clinical or non-clinical environment and takes just 5-10 minutes to complete. The test contains 21 items, which assess depressive symptoms on a likert scale of 0-3. Each item is a list of four statements arranged in increasing severity about a particular symptom of depression. Interpretation of scores is done using the following interpretive ranges: 0-13 - minimal depression; 14-28 - mild depression; and 29-63 - severe depression. Higher total scores indicate more severe depressive symptoms. [10]

**Statistical analysis:**

In this study, the data was evaluated using the Statistical Package for the Social Sciences (SPSS Inc. version 17.0). The Statistical techniques used for analyzing data were frequencies, percentages and correlations. The statistical significance value was set at  $p < 0.05$ .

**RESULTS:**

In the present study, out of 260 medical students, 202 (77.7%) were males and 58 (22.3%) were females. The mean age was 23 years. Of the total, about 30.4% were moderate (average) users. Using Young's original criteria, 14.6% were found to be addicts. Most common main purpose of using the internet was social networking followed by entertainment. Also, those with excessive internet use had high scores on depression rating scale (BDI-II).

**Table 1. Students group and the Internet usage:**

Level of Internet use	Scores Range on IAT	Number of students	F%
Mild	0-49	143	55.0%
Moderate	50-79	79	30.4%
Severe	80-100	38	14.6%
Total		260	100%

Table 1 reveals that out of 260 medical students 55% scored for mild internet usage, where as 30.4% had moderate scores and 14.6% were found to have severe grade on IAT.

**Table 2. Showing depression scores of students on BDI:**

Level of Internet use	Scores Range on BDI	Number of students	F%
Minimal	0-13	154	59.2%
Mild-Moderate	14-28	78	30.0 %
Severe	29-63	28	10.8%
Total		260	100%

Table 2 reveals that out of 260 medical students 78 (30%) had mild-moderate depression while 10.8% had severe depression.

**Table 3. Shows Pearson's Correlation Coefficient(r) between Internet Addiction and Depression of the sample population:**

Variables Self-regulation	Depression
Internet Addiction	
$r = .807^* (p < 0.001)$	

\*.  $P < 0.05$  Level of significance

Table 3 shows a significant positive correlation between internet addiction and depression in medical students. Hence, more the internet addiction, more the depression.

**DISCUSSION:**

The overall prevalence of internet addiction (representing severe addiction) in our study was 14.6% which is in accordance with most studies that have assessed internet addiction in student population. A study on university students in India reported a prevalence of 18.88%. [11] Internet addiction is more common in males than in females as evident by various studies. [6,12] The study also reported that internet addiction was associated with psychiatric symptoms of depression.

Many studies have suggested that internet addiction is associated with loneliness, depression, anxiety, stress, and low self-esteem and life satisfaction. [13] These findings are in accordance with the previous studies stating that there is a strong association between psychiatric symptoms and internet addiction. [14] Studies done in past have shown an increased risk of internet addiction among males, those using internet continuously, having higher emotional ties, and psychological distress.

A number of studies have across the world has been done till date, especially targeting internet addiction in adolescents. Although most of the literature is available from abroad, India has lesser contributions regarding the same despite its large population and increasing levels of computer and internet use. Data is even scarce when it comes to special population like medical students as in our study.

The current study is a preliminary step in understanding the extent of internet addiction and its effects among medical college students in the

state of Bihar. Studies done previously, have concluded the importance of assessment of depression in these population. Though it is not clear whether depression precedes the development of internet abuse or it is its consequence, yet assessment of the same is imperative. [12, 13]

**Limitations:**

The students were selected from only one medical college, and hence the results cannot be generalized and further studies taking different medical colleges from all parts of India are needed.

**CONCLUSION:**

As a result of expanding technology, Internet addiction is a new disorder and much about it remains unknown. The important issue is whether it is a distinct entity or simply a symptom of other psychiatric illnesses. It is also unclear what the most effective treatment strategies are. As considered by the DSM-5 task force, by placing the disorder in the appendix of the manual, more light needs to be thrown by systematic research, [17]. Studies have started pouring in from different parts of the world, generating important data and our study is a contributor for the same by highlighting its prevalence and associated depression among bright and elite class of medical students.

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