

## Association Of Anxiety And Quality Of Life With Internet Addiction Among Medical Students

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**Abstract:** Objective: Internet addiction is characterized by excessive or poorly controlled preoccupations, urges or behaviours regarding computer use and Internet access that lead to impairment or distress in individual's psychological state. This study was aimed to assess the frequency of internet addiction and its possible association with anxiety severity and quality of life among medical students. Methods: This was an observational, cross sectional, single-centred, self-assessable questionnaire based study administrated among 525 consenting medical students. The participants were assessed by proforma containing demographic details, variables related with internet use, questionnaires of IAT (Internet Addiction Test for Internet Use), BAI (Beck's Anxiety Inventory) and WHOQOL-BREF (World health organization quality of life assessment scale). Statistical data were analysed by Graph Pad InStat version 3.06 using Chi-square test and Mann-Whitney test. Results: Frequency of problematic users among medical students was 9.3 % with frequency of internet addiction 0.9%. Participants with problematic internet use were likely to experience high severity of anxiety ( $p < 0.0001$ ) and poorer quality of life in psychological ( $p = 0.01$ ) and environmental domain ( $p = 0.03$ ). Conclusion: Participants with problematic internet use were more likely to experience anxiety symptoms and poor quality of life and vice a versa. [Dr.Nidhi N NJIRM 2016; 7(5):9-13]

**Key Words:** Anxiety, Internet Addiction, Quality of Life

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**Introduction:** There has been an explosive growth in the use of internet not only in India but also worldwide in the last decade. There were about 243 million active internet users in urban India in July 2014<sup>1</sup> as compared to 149 million in 2013<sup>2</sup> and 45 million in 2008<sup>3</sup>. The internet is used by some to facilitate research, to seek information, for interpersonal communication, and for business transactions. On the other hand, it can be used by some to indulge in pornography, excessive gaming, chatting for long hours, and even gambling. There have been growing concerns worldwide for what has been labeled as "INTERNET ADDICTION" and this term was first introduced by Dr. Ivan Goldberg<sup>4</sup> in 1995 to describe 'pathological and compulsive use of internet'.

Kimberly Young<sup>5</sup>, a well know researcher in this field, describes Internet addiction as follows: "Internet addiction is defined as any online-related, compulsive behaviour which interferes with normal living and causes severe stress on family, friends, loved ones, and one's work environment. Internet addiction has been called Internet dependency and Internet compulsivity. By any name, it is a compulsive behaviour that completely dominates the addict's life." Young modified the DSM-IV diagnostic criteria for pathological gambling to construct diagnostic criteria for pathological Internet use, which she defined as 5 or more of 8 characteristic symptoms present in the

preceding 6 months. She further divided Internet addiction into 5 subtypes depending on the particular component of use to which it was directed addiction, namely: (1) cybersexual addiction; (2) cyber-relational addiction; (3) net compulsions; (4) information overload; and (5) computer addiction<sup>6</sup>.

Another important researcher in this area is Mark Griffiths<sup>7</sup> who suggested the following six basic components of Internet addiction. His components are based on the general criteria of DSM IV: 1.Saliency 2.Mood modification 3.Tolerance 4. Withdrawal symptoms 5.Conflict and 6.Relapse.

Previous studies<sup>8</sup> about Internet addiction have investigated several associated psychological variables such as shyness, loneliness, self-consciousness, anxiety, depression, and interpersonal relations.

One is at greater risk of Internet addiction if<sup>9</sup>:

- Suffer from anxiety as some may use the Internet to distract self from their worries and fears.
- Any other addictions :Many Internet addicts suffer from other addictions, such as drugs, alcohol, gambling, and sex.
- Poor social support : Internet addicts often use social networking sites, instant messaging, or online gaming as a safe way of establishing new relationships and more confidently relating to others.

•An unhappy person :Some might be wondering where they fit in and the Internet could feel more comfortable than real-life friends.

Internet addiction results in personal, family, academic, financial, and occupational problems that are characteristic of other addictions. Individuals suffering from Internet addiction spend more time in solitary seclusion, spend less time with real people in their lives, and are often viewed as socially awkward. Arguments may result due to the volume of time spent on-line. Those suffering from Internet addiction may attempt to conceal the amount of time spent on-line, which results in distrust and the disturbance of quality in once stable relationships<sup>10</sup>.

Some suffering from Internet addiction may create on-line personas or profiles where they are able to alter their identities and pretend to be someone other than himself or herself. Those at highest risk for creation of a secret life are those who suffer from low-self esteem feelings of inadequacy, and fear of disapproval. Such negative self-concepts lead to clinical problems of depression and anxiety.

Many persons who attempt to quit their Internet use experience withdrawal including: anger, depression, relief, mood swings, anxiety, fear, irritability, sadness, loneliness, boredom, restlessness, procrastination, and upset stomach. Being addicted to the Internet can also cause physical discomfort or medical problems such as: Carpal Tunnel Syndrome, dry eyes, backaches, severe headaches, eating irregularities, (such as skipping meals), failure to attend to personal hygiene, and sleep disturbance<sup>11,12</sup>.

A number of studies have been conducted across the world, especially among adolescents with respect to internet addiction. In studies that focus on younger people, prevalence of internet addiction estimates range from 0.9 to 38%.<sup>13,14,15,16,17</sup>

This study is a preliminary step toward understanding the extent of internet addiction among college students in India. By studying the association of internet usage and its effects on human behavior, we can formulate interventions like setting boundaries and detecting early warning signs of underlying psychopathology at the earliest.

The objectives of present study is to assess frequency of Internet Addiction and association of Anxiety severity and quality of life with Internet Addiction

among medical students and also to know about correlation between Anxiety severity with severity of Internet Addiction among medical students and to compare above stated parameters among medical students with Internet Addiction and without Internet Addiction.

**Methods:** In the present study 525 students were enrolled from Medical College including MBBS students, interns and postgraduate students from time period from October 2014 –March 2015 after prior approval from local ethics committee (Institutional Review Board / Human Ethics Committee ) for conducting the study.

Purpose of study was explained to all the participants and written informed consent was taken from them. They were given a proforma containing details of demographics (name, age, gender, weight, height), designation, purpose of using the internet (by choosing among the options like education, entertainment, news, gaming or social networking), monthly total expenditure, money spent per month on internet, place of access (home, cybercafé, or college ), the time of day when the internet is accessed the most , the average duration of use per day, time spent on other extracurricular activities per day and addiction of any substance(tea/coffee/others). Presence or absence of past history and family history of psychiatric illness was also included in the proforma.

The proforma further included the self-assessable questionnaire which was based on following scales.

1) The Internet Addiction Test (IAT; Young, 1998)<sup>18</sup> which is a 20-item 5-point likert scale that measures the severity of self-reported compulsive use of the internet. Total internet addiction scores were calculated, with possible scores for the sum of 20 items ranging from 20 to 100.

According to Young's criteria, total IAT scores 20-49 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.

2) The Beck Anxiety Inventory (BAI),<sup>19</sup> created by Aaron T. Beck, MD, and colleagues, is a 21-item multiple-choice self-report inventory that measures the severity

of an anxiety in adults and adolescents. The values for each item are summed yielding an overall or total score for all 21 symptoms that can range between 0 and 63 points. The values for each item are summed yielding an overall or total score for all 21 symptoms that can range between 0 and 63 points. A total score of 0 - 7 is interpreted as a "Minimal" level of anxiety; 8 - 15 as "Mild"; 16 -25 as "Moderate", and; 26 - 63 as "Severe".

3) WHOQOL-BREF<sup>20</sup> is the short version of the WHOQOL 100 . : It is a self-report questionnaire that contains 26 items of WHOQOL-BREF (World Health Organization Quality of Life) assessment scale for assessment of person’s quality of life in physical health, psychological, social relationship and environment domains. A higher score indicates a higher QOL. Qualitative data were expressed as percentages and quantitative data were expressed as mean ± standard deviation. The statistical analysis was done with Graph Pad. InStat version 3.06 (San Diego, California, US).

Proportions of participants were compared by using Chi-square test while scores of IAT, BECK’S Anxiety Inventory and WHOQOL-BREF was compared by using Mann-Whitney test or Kruskal-Wallis test followed by Dunn’s post-hoc multiple comparisons. A p value of < 0.05 was considered statistically significant. Statistical co-relation between internet addiction and above stated psychiatric variables were assessed by spearman’s rank correlation.

**Result:** Participants were grouped into 2 groups; Non-problematic use of internet (IAT score < 50 i.e. average online users and less than that) and Problematic use of internet (IAT score ≥ 50 i.e moderate internet users and internet addicts).

Frequency of problematic users among students was 9.3 % with frequency of internet addiction 0.9%. Males were more likely to experience internet addiction than females.

The main purpose of using the internet in medical students were for social networking (81.5%) and for education (81.3%) followed by entertainment (72.2%) and then the other purposes. About 96.2 % of the medical students were using mobile phones to access the internet.

Problematic internet users were using internet for longer duration of years and spend more hours daily using internet than normal users.

There was a statistically significant relationship between the total monthly expenditure and monthly cost of internet services among the problematic internet users which was of the higher cost compared to non-problematic internet users.

There was significant association between high speed of internet and problematic internet use was seen in our study, high speed helps in fast downloading and easy accessibility so one may become more prone to internet addiction.

Participants with problematic internet use were likely to experience high severity of anxiety (p<0.0001). Severity of anxiety is positively correlated with internet addiction (r<sup>2</sup>= 0.085, p<0.0001).

The participants with problematic internet use had a poorer quality of life in psychological (p= 0.01) and environmental domain (p=0.03) of WHOQOL-BREF as compared to non- problematic group.

**Table 1 : Overall Analysis To Find Out Proportion Of Study Subjects Falling In The Category Of Internet Addicts On The Basis Of Scoring System Adapted For Study (N=525)**

Scoring Interval *	Pattern	No. of Students (525)	Males (245)	Females (280)	Percentage (%)
<20	Less than average	180	62	118	34.3%
20-49	Average user	296	150	146	56.4%
50-79	Moderate user / Possible addict	44	30	14	8.4%
80-100	Addict	05	03	02	0.9%

\*Scoring is based on Internet Addiction Test (IAT)

**Discussion:** Our study showed that 44 out of 525 participants (8.4%) were at risk with moderate use of internet and five out of 525 participants (0.9%) were addicted users, so 49 out of 525 participants (9.3%) were considered problematic internet users with frequency of internet addiction 0.9%. In the studies

conducted by Goel et al<sup>15</sup> and VenkataVenu Gopala Raju Srijampana et al<sup>16</sup>, it was also found that the prevalence of internet addicts was 0.7% and 0.4% respectively among students which is consistent with our own results. The prevalence of internet addiction

**Table 2: Association Of Internet Addiction (Based On IAT Scores) With Anxiety Severity (BAI Scores) And Quality Of Life (WHOQOL-BREF Score).**

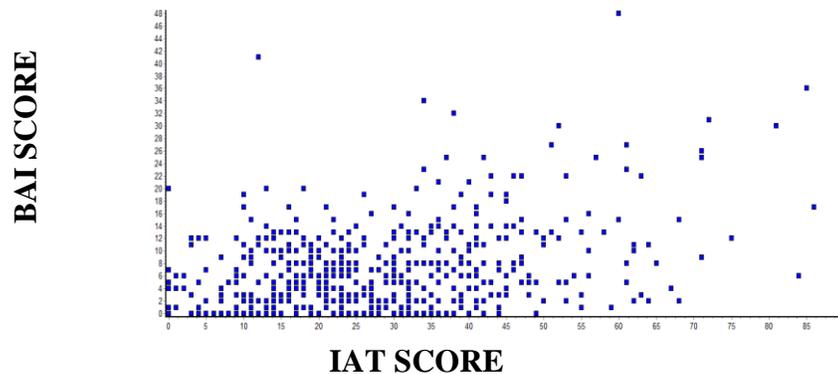
	Non Problematic use of Internet IAT Score < 50 N=476	Problematic use of Internet IAT Score ≥ 50 N=49	p value
BAI Score	6.45± 5.84	13.77±10.60	p<0.0001
WHOQOL-BREF			
Physical health	54.98±9.65	52.33±10.60	p=0.08
Psychological	61.99±11.44	57.65±13.21	p = 0.01
Social relationship	67.43±15.40	63.26±20.19	p < 0.05
Environmental	71.31±12.95	67.60±15.03	p=0.03

in other studies was found between 3.5% - 17.2%<sup>17,21</sup>. It must be noted that comparing these studies was a difficult task because of differences in study populations, applied tools, cut off points and differences in social and cultural contexts.

**Table 3 : Association Of Severity Of Anxiety (BAI Scores) With Internet Addiction (IAT Scores) And Quality Of Life (WHOQOL-BREF Score).**

	BAI < 8 N = 313	BAI ≥ 8 N = 212	P value
IAT	24.37 ± 14.28	33.11 ± 17.40	p< 0.0001
WHOQOL-BREF			
Physical health	56.02 ± 9.42	52.84 ± 10.32	p = 0.0025
Psychological	62.67 ± 11.52	59.98 ± 11.74	p = 0.0088
Social relationship	69.45 ± 14.42	63.63 ± 17.43	p < 0.0001
Environmental	72.54 ± 12.90	68.63 ± 13.30	p = 0.0025

Correlating the IAT score with BAI score in figure 1, there is significant correlation between them ( $r^2 = 0.085$ ,  $p < 0.0001$ ).



In consistent with earlier study<sup>16,17,18,19</sup>, Internet addiction was found more frequent among males in our study also and the problematic users were using internet for prime purpose of social networking and entertainment. In our study, we found that there was significant association between internet addiction and anxiety symptoms and a positive co-relation was also seen between them. This finding is in consistent with finding in other study<sup>20</sup>. The participants with problematic internet use had a poorer quality of life in psychological and environmental domain as compared to non- problematic group and similar finding was also seen in previous study<sup>23</sup>. Our study suggested that as the severity of anxiety increases, the

chances of internet addiction also increases and quality of life in all the domains of WHOQOL-BREF decreases.

**Conclusion:** Participants with problematic internet use are more likely to experience anxiety symptoms and quality of life and vice a versa. As the severity of anxiety increases, the chances of internet addiction also increases and quality of life in all the domains of WHOQOL-BREF decreases.

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