RESEARCH ARTICLE

A cross-sectional descriptive study of internet addiction among second MBBS students of a medical college in India

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ABSTRACT

Background: Internet addiction disorder is identified as a matter of grave concern likely to cause physical, psychological, and social issues. Hence, this survey was designed to study its degree and impact on second MBBS students of a medical college in India. Aims and Objectives: Objectives were to determine the degree of internet addiction, its effect on personal relationships, academics, psychological and physical health along with commonly accessed applications, and monthly expenditure. Materials and Methods: A cross-sectional survey was carried out wherein each participant was provided with a pre-validated questionnaire of which Young’s Internet Addiction Test (IAT) was a part. Results: Of 108 participants, the ratio of males to females was 1:1. According to the IAT score, regular use was noted in 28 students whereas mild and moderate addiction was observed in 53 and 27 students, respectively. Academic performance was most affected (3.71 ± 2.03 vs. 6.53 ± 2.49 vs. 9.15 ± 1.59) while personal relationships were least affected (1.43 ± 1.45 vs. 2.07 ± 1.59 vs. 2.96 ± 2.63) across all grades. Deleterious effect on physical and psychological health was seen with increasing grades of addiction which was statistically significant. Instagram, WhatsApp, YouTube, and Google were commonly accessed with majority (n = 94) of participants spending <500 INR monthly. Conclusion: Our study inferred that mild and moderate addiction was commonly seen in students and can be a potential cause for physical and psychosocial issues. Nonetheless, the situation can be managed by employing a combination of cognitive behavioral therapy, pharmacotherapy, and support group therapy.

KEY WORDS: Internet Addiction; Young’s Internet Addiction Questionnaire; MBBS Students; Mobile Phones

INTRODUCTION

Internet access has become a basic necessity since the past few decades. Use of internet is rampant across all age groups for work as well as pleasure, making it an important tool for education, entertainment, social networking, and communication. The availability of smartphones and pocket-friendly internet data packages aids easy access to the internet. However, this ease has its own problems which are being noticed by psychiatrists and psychologists across the globe. While most people are able to limit their internet usage, a progressive loss of this ability has been seen in some of them, a phenomenon is referred to as “Internet addiction.” Despite not being classified as a disorder in DSM-V, increased internet usage can lead to habituation, addiction, poor academic performance, as well as physical and social repercussions.

Various studies suggest that the prevalence of internet addiction in youngsters ranges between 2% and 18% across the world.
In India, there is an extensive usage of internet by the younger population, including students from various streams.[13] Medical students tend to spend a considerable amount of their time browsing the internet to fulfill academic requirements; in fact, a study from South India found the prevalence of internet addiction among medical students to be 61.4%.[2,14]

Hence, the present study was undertaken among the second year MBBS students at our institute to estimate the degree and impact of internet usage.

AIMS AND OBJECTIVES

• Primary objective of this study was to determine the degree of internet addiction and its effect on personal relationships, academic performance, and psychological and physical health

• Secondary objectives were to find demographic distinctions, commonly accessed websites or applications, average time spent per day, and average expenditure per month on internet usage.

MATERIALS AND METHODS

A cross-sectional study involving 108 second year MBBS students was undertaken at a medical college in Mumbai, India. Students were explained in detail the purpose of the study and those voluntarily giving written informed consent were included in the study.

The study period was from December 2019 to January 2020. Each participant was provided with a pre-validated questionnaire and Young’s Internet Addiction Test questionnaire (IAT).

The pre-validated questionnaire consisted of 16 descriptive questions pertaining to the demographics, frequently accessed websites/applications, expenditure, extent of internet use, and physical discomfort.

The IAT is a first validated instrument having 20 items with a 6-point Likert scale and scores ranging from 0 to 5 for each item, which measures the severity of self-reported compulsive use of the internet.[3] Total internet addiction scores were calculated, with possible scores for the sum of 20 items ranging from 0 to 100. The participants were given 20 min to complete the questionnaire, after which the questionnaire was collected and responses analyzed. A score of 0–30 has been graded as regular internet use, 31–49 as mild, 50–79 as moderate, and 80–100 as severe internet addiction. Scores are represented as mean ± standard deviation.

Ethical Declaration

Study was started after obtaining permission from the Institutional Ethics Committee of the hospital.

Statistical Analysis

The data obtained from pre-validated questionnaire was analyzed as numbers and percentages while Young’s IAT was analyzed using unpaired $t$-test and ANOVA test in R software.

RESULTS

Out of 150 second MBBS students, responses of 108 students were received and analyzed. The students belonged to the age group of 19–20 years and the male-to-female ratio was 1:1 (54,54). The overall average score of internet addiction was 40.09 ± 14.36 (41.57 ± 13.5 in males and 38.61 ± 15.15 in females) without any significant difference based on gender [Table 1].

Regular use of internet was noted in 28 students (mean score of 23.07 ± 6.35) while 53 and 27 had mild (39.42 ± 5.19) and severe use (40.66 ± 1.54) respectively.

Table 1: Baseline average scores ($n=108$

<table>
<thead>
<tr>
<th>Variables</th>
<th>Groups</th>
<th>$n$ (%)</th>
<th>Mean score±SD</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>19 years</td>
<td>53 (49)</td>
<td>40.88±14.31</td>
<td>0.66</td>
</tr>
<tr>
<td></td>
<td>20 years</td>
<td>55 (40)</td>
<td>39.72±14.06</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>54 (50)</td>
<td>41.57±13.51</td>
<td>0.34</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>54 (50)</td>
<td>38.91±14.74</td>
<td></td>
</tr>
<tr>
<td>Residence</td>
<td>Rural</td>
<td>44 (41)</td>
<td>37.62±16.62</td>
<td>0.09</td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>64 (59)</td>
<td>42.16±12.23</td>
<td></td>
</tr>
<tr>
<td>Devices</td>
<td>1 (mobile phones)</td>
<td>98 (91)</td>
<td>40.66±14.54</td>
<td>0.38</td>
</tr>
<tr>
<td></td>
<td>&gt;1 (mobile phones, laptops, tablets)</td>
<td>10 (9)</td>
<td>36.51±8.83</td>
<td></td>
</tr>
<tr>
<td>Access to</td>
<td>Mobile data</td>
<td>55 (51)</td>
<td>38.52±15.94</td>
<td>0.20</td>
</tr>
<tr>
<td>internet</td>
<td>Wi-Fi network</td>
<td>53 (49)</td>
<td>42.07±11.91</td>
<td></td>
</tr>
<tr>
<td>Location of access</td>
<td>College</td>
<td>10 (9)</td>
<td>40.55±18.03</td>
<td>0.83</td>
</tr>
<tr>
<td></td>
<td>Home</td>
<td>88 (83)</td>
<td>39.92±13.65</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Both</td>
<td>10 (8)</td>
<td>42.91±16.16</td>
<td></td>
</tr>
<tr>
<td>Daily hours spent on internet</td>
<td>0–4</td>
<td>71 (66)</td>
<td>39.21±13.71</td>
<td>0.31</td>
</tr>
<tr>
<td></td>
<td>&gt;4</td>
<td>37 (34)</td>
<td>42.21±14.97</td>
<td></td>
</tr>
<tr>
<td>Days of maximum internet use</td>
<td>Weekdays</td>
<td>29 (27)</td>
<td>46.17±14.68</td>
<td>0.008</td>
</tr>
<tr>
<td></td>
<td>Weekends</td>
<td>79 (73)</td>
<td>38.11±13.40</td>
<td></td>
</tr>
<tr>
<td>Years online</td>
<td>&lt;5</td>
<td>59 (54)</td>
<td>38.24±13.81</td>
<td>0.09</td>
</tr>
<tr>
<td></td>
<td>≥5</td>
<td>49 (45)</td>
<td>42.83±14.23</td>
<td></td>
</tr>
<tr>
<td>Monthly expenditure for internet access in INR</td>
<td>&lt;500</td>
<td>94 (87)</td>
<td>40.04±14.29</td>
<td>0.65</td>
</tr>
<tr>
<td></td>
<td>≥500</td>
<td>14 (13)</td>
<td>41.91±13.63</td>
<td></td>
</tr>
<tr>
<td>Body pain or discomfort</td>
<td>Yes</td>
<td>62 (57)</td>
<td>40.82±13.45</td>
<td>0.64</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>46 (43)</td>
<td>39.52±15.11</td>
<td></td>
</tr>
<tr>
<td>Attempted to reduce internet use</td>
<td>Yes</td>
<td>93 (86)</td>
<td>40.12±14.13</td>
<td>0.61</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>15 (14)</td>
<td>42.21±14.48</td>
<td></td>
</tr>
</tbody>
</table>

Numbers in parenthesis represent number of students in the respective groups
Table 2: Grades of addiction

<table>
<thead>
<tr>
<th>Severity</th>
<th>Regular use (n=28)</th>
<th>Mild addiction (n=53)</th>
<th>Moderate addiction (n=27)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IAT score (Mean±SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>23.80±4.37</td>
<td>38.58±5.20</td>
<td>60.00±9.10</td>
</tr>
<tr>
<td>Female</td>
<td>22.67±7.32</td>
<td>39.18±5.28</td>
<td>58.21±7.39</td>
</tr>
<tr>
<td>Total</td>
<td>23.07±6.35</td>
<td>39.42±5.19</td>
<td>59.07±8.15</td>
</tr>
</tbody>
</table>

Table 3: Average scores for psychological health, physical health, personal relationships, and academics

<table>
<thead>
<tr>
<th>Aspects</th>
<th>Overall (n=108)</th>
<th>Regular use (n=28)</th>
<th>Mild addiction (n=53)</th>
<th>Moderate addiction (n=27)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical well-being</td>
<td>3.07±1.59</td>
<td>1.32±1.15</td>
<td>2.25±1.31</td>
<td>3.07±1.59</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Personal relationships</td>
<td>2.96±2.64</td>
<td>1.43±1.45</td>
<td>2.07±1.59</td>
<td>2.96±2.63</td>
<td>0.01</td>
</tr>
<tr>
<td>Academic performance</td>
<td>6.45±2.91</td>
<td>3.71±2.03</td>
<td>6.53±2.49</td>
<td>9.15±1.59</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Psychological health</td>
<td>28.04±9.88</td>
<td>16.89±4.28</td>
<td>27.39±4.28</td>
<td>40.85±6.39</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

P<0.05 represents statistically significant difference between groups

DISCUSSION

The use of internet has been increasing rapidly in modern society and many studies have been carried out on the rising problem of internet addiction.

Internet addiction usually is described as an impulse control disorder that is very similar to pathological gambling. In our study, the students belonged to the age group of 19–20 years and the male-to-female ratio was 1:1 (54:54). There was no significant difference in overall average score of internet addiction based on gender.

Regular use of internet was noted in 28 students while 53 and 27 had mild and moderate internet addiction, respectively. No student showed severe addiction. In the present study, it was observed that academic performance was most affected (3.71 ± 2.03 vs. 6.53 ± 2.49 vs. 9.15 ± 1.59) while personal relationships were least affected (1.43 ± 1.45 vs. 2.07 ± 1.59 vs. 2.96 ± 2.63) across all grades of internet addiction. Effect on physical (1.32 ± 1.15 vs. 2.25 ± 1.31 vs. 3.07 ± 1.59) and psychological health (16.89 ± 4.28 vs. 27.39 ± 4.28 vs. 40.85 ± 6.39) was also statistically significant.

In addition to the above, it was observed that students of both urban and rural residence had almost similar level of addiction (42.1 ± 12.2 vs. 37.6 ± 16.6). Internet was accessed through both mobile data and Wi-Fi (n=55 vs 53) and the most commonly used device was mobile phone (n=98); usage was more at home or in hostel than at the university and was higher on weekends as compared to weekdays (n=79 vs 29). Most of our participants spent up to 4 h a day on internet (n = 71 vs 37; range 1–14 h/day). Moreover, a higher score was observed in students using the internet for 5 years or more. Participants with relatively higher scores also complained of physical pain and discomfort after prolonged internet use. The common websites or applications accessed included Instagram, WhatsApp, YouTube, Google, Netflix, Amazon Prime, Snapchat, Facebook, and PUBG, in descending order. A majority (n = 94) had an expenditure of <500 INR every month over it, ranging from INR 322.5 to INR 2500.

A positive finding was the desire and attempt to reduce internet time, as stated by 93 out of 108 students.

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The surveys from the United States and Europe, as mentioned by Weinstein and Lejoeux in their review, have indicated prevalence rates varying between 1.5% and 8.2%. Other reports place the internet addiction prevalence rates between 6% and 18.5%. In this study, out of one hundred and eight 2nd year medical students, regular use of internet was noted in 28 students (25.9%) while 53 (49%) and 27 (25%) had mild and moderate internet addiction, respectively. Similar findings were noted by Paul et al. in their study involving 596 non-medical college students, of which 259 (43.5%) were regular internet users, while 246 (41.3%) had mild and 91 (15.2%) had moderate addiction. A study by Athulya et al. also portrayed the same trend wherein among the 381 medical student participants, 149 (63.7%) had mild, 83 (35.5%) had moderate, and 2 (0.8%) had severe addiction. In contrast, severe internet addiction was not observed in our study. According to our findings, the risk of internet addiction did not vary with gender. Most of the studies suggest that males...
have a higher likelihood of developing internet addiction with this pattern being similar for medical as well as non-medical students.[5,14,23,24] Cultural diversity might be the reason for these differences in findings in use of internet between the genders as the forementioned studies have been done in different parts of the world.[10] In our study, students of both urban and rural residences had similar levels of internet addiction. Similar findings by Athulya et al. indicate that irrespective of their basic residence, medical students have more internet usage because of their academic requirements.[14] We found that the level of addiction increased with years spent online. In line with the study undertaken by Chaudhari et al., mobile phones were the most commonly used device and internet was accessed through both mobile data and Wi-Fi networks.[25] Internet was accessed more at home than college probably because the students had leisure time there. In contrast, studies by Goel et al. and Jain et al. done in non-medical students showed highest internet usage at the university which could be because of lesser monitoring, easy accessibility, and peer group environment.[12,13] Similar to another study by Vizcaino et al., our study showed more usage on weekends than on weekdays by students.[26] According to our data, most of our participants spent <4 h a day on internet and had an expenditure of <500 INR every month over it which was comparable to the study by Chaudhari et al.[25] 93 out of 108 students in our study attempted to reduce non-academic internet use probably because it affected their focus and concentration. Deleterious effects on physical well-being, personal relationships, academics, and psychological health were seen which increased with higher scores of addiction. In other studies as well, association with physical ailments such as carpal tunnel syndrome, dry eyes, frequent headaches, muscle soreness, and disruption of sleep cycle was observed along with an adverse impact on academic performance.[26-32] Several psychological issues, such as decreased self-control, anxiety, low self-esteem, and depression, occurred with prolonged internet use.[33-35] All these can lead to a vicious cycle of worsened internet addiction over time. An adverse scenario such as this necessitates some reliable solutions. An in-depth knowledge about the risk factors is equally important some of which may be lack of parental guidance, failing interpersonal relations, and social isolation with deteriorating mental health.[37] A scarcity of safe, hygienic, and economical spaces such as public parks, libraries, community, and recreation centers are potential risk factors as well, consequently leading to time being invariably spent on handheld devices for entertainment and work. Since internet addiction is accompanied by neuropsychiatric manifestations such as depression and anxiety, the use of selective serotonin reuptake inhibitors in such cases have been proven to be beneficial.[36-40] Another promising modality of treatment of internet addiction is cognitive behavior therapy (CBT) which seeks to modify thought patterns that lead to problematic behaviors, and provides individuals with healthy sustainable coping mechanisms. Dialectical behavior therapy, which is an off-shoot of CBT, also is deemed effective, as it addresses the emotional aspect as well.[41] Non-pharmacological modalities for the internet addicts that are being tried include support groups, family therapy, and other external stoppers. However, the efficacy of these measures has not been clinically documented.[42]

Strengths
Apart from Young’s questionnaire which is commonly used in other studies related to internet addiction, we have as well as studied other parameters including demographics, devices used, expenditure, time spent by students, and as well as the effect on their physical and mental well-being.

Limitations
Only the second year MBBS students were part of this study. There is a possibility that a different spectrum of internet addiction could be observed among the students from the other academic years due to difference in the academic pressure, peer pressure, and acclimatization with the environment, among many other factors. Lesser internet addiction might have been observed in the first year students due to them being exposed to a whole new environment and in the third year students due to increased academic pressure.

CONCLUSION
The present study conducted in the second year MBBS students located in the metropolitan city in India showed that majority of students were mildly addicted to the internet while none demonstrated severe internet addiction. Their physical well-being, academic performance, personal relationships, and psychological health were affected to a great extent, worsening with increasing scores of addiction. A ray of light is interventions such as pharmacotherapy and CBT alone or in combination that needs to adapt on a pre-emptive basis to prevent the myriad issues associated with internet addiction.

REFERENCES


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