Internet Addiction and its determinants among the Students of a Medical College in Kerala

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ABSTRACT

Introduction: Internet has literally percolated every aspect of human life today including social communication, education, research, health seeking, banking, business, shopping, administration, and entertainment, so much so that we cannot imagine our lives without internet. However, internet can be misused and excess internet use can be pathological and addictive. Younger population and especially college students are more vulnerable to this addiction because of their psychosocial and environmental characteristics. This internet addiction can lead to various psychological, physical, as well as social problems. Hence, in this background, the present study was conducted to find out the prevalence of internet addiction among medical students and also its determinants. Methodology: This was a cross-sectional study done at DM Wayanad Institute of Medical Sciences, Wayanad District, Kerala, between January and June 2018. All the undergraduate medical students of the college were the study subjects. Data were collected using a predesigned and pretested self-administered questionnaire (Young’s internet addiction test). Completed responses were obtained from a total of 729 students. Results: 5.5% were found to have no internet addiction and 94.5% were found to have internet addiction. 60.8%, 31.3%, and 2.5% were found to have mild, moderate and severe internet addiction, respectively. The prevalence of internet addiction was more among males compared to females, Part II, final phase students compared to other phase students, management quota students compared to other quota students, Christians compared to other religions, urban origin students compared to rural origin, and day scholars compared to hostelites. However, only sex, phase of MBBS, and place of origin were found to have a statistically significant association (P= <0.01, 0.026 and 0.049 respectively). There was a weak negative correlation (r = −0.117) between the percentage of marks obtained in previous university examination and IA scores, and the correlation was found to be statistically significant (P= <0.01). Conclusions: The prevalence of internet addiction among the study subjects was significantly more compared to other studies. Sex, phase of MBBS, and place of origin were found to have a statistically significant association with internet addiction. There was a negative correlation between the degree of internet addiction and academic performance.

Key words: Internet addiction, Kerala, medical college, students
it has been considered a subset of behavioral addictions and has drawn a considerable attention of researchers.[5] Although internet addiction has not been included in Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, internet gaming disorder has been included in the section of "condition for further study."[6]

Researchers have shown that younger population and especially college students are more vulnerable because of their psychosocial and environmental characteristics.[7,8] Several factors have been attributed to this vulnerability. First, students have larger proportion of unstructured time when they can use internet. Second, students may have unlimited access to internet provided by universities/colleges through Wi-Fi. Many times, students are encouraged by their teachers to use internet for academic purposes. Third, young students have more urge to use the latest gadgets, technologies, and applications available on internet. Fourth, young students have less parental control and censoring of what they do online. Fifth, being young, students have their own developmental needs. Among these important are developing a sense of identity and developing meaningful and intimate relationship.[9] Being a virtual mode of social interaction, internet allows its user to expand the range of emotions expressed towards others. This makes internet a suitable mode of social interactions rather than face-to-face interactions. Hence, many young students tend to make friendships and intimate relationships online.

This internet addiction can lead to various psychological, physical, as well as social problems including impaired function at work, impaired academic performance, sleep deprivation, poor dietary habits, headache, eye strain, social isolation, and relationship problems.[10,11] Internet addiction has also been found to be significantly associated with some psychiatric disorders such as alcohol abuse, attention deficit and hyperactivity, depression, and anxiety.[12] Researchers have tried to find out the determinants or risk factors associated with internet addiction, and it has been proposed that certain personal, familial, social characteristics, as well as certain internet-related factors are contributing toward internet addiction. Male gender, initial course years, permanently logged in status, peer influence and preference for virtual interaction with friends; and using the internet for chatting, pornography, making new friendships, getting into relationships online and shopping; and time spent on internet per day, mode of accessing internet, speed of internet, accessibility and intensity of information accessed online were some of the factors found to be associated with internet addiction.[4,14-16] There are hardly few studies conducted in this part of the country to assess internet addiction among medical students. In this background, the present study was conducted to find out the prevalence of internet addiction among medical students and also its determinants.

**Objectives**

The objectives of this study were as follows:
1. To find out the prevalence of internet addiction among medical students and
2. To find out the determinants of internet addiction.

**MATERIALS AND METHODS**

This was a cross-sectional study done at DM Wayanad Institute of Medical Sciences, Wayanad District, Kerala, between January and June 2018. All the undergraduate medical students of the college (i.e., Phase I MBBS to interns) willing to participate in the study were the study subjects. After obtaining approval from the college administration, the students were approached individually in their hostel rooms and briefed about the purpose of the study. Participation in the study was voluntary. Oral informed consent was taken from the subjects and data were collected using a predesigned and pretested self-administered questionnaire, the first part of which had questions pertaining to basic sociodemographic details and possible factors contributing to internet addiction and the second part was the Young’s internet addiction test. IAT is a 20-item, 6-point Likert scale with scores ranging from 0 to 5 for each item, which measures the severity of self-reported compulsive use of the internet. Scores of all the 20 items were added up to obtain the final score which ranges from 0 to 100. Interpretation of the scores is as follows: 0–19→ Normal, 20–49→ mild addiction, 50–79→ moderate addiction, and 80–100→ severe addiction.[17] Completed responses were obtained from a total of 729 students. The respondents were asked not to mention their names for maintaining anonymity and also to encourage participation and elicit truthful response. Data were kept confidential.

Data were entered into MS Excel and analyzed using the Statistical Package for the Social Sciences v21.0. Descriptive statistics such as mean and percentage and also inferential statistics like Chi-square test to find out association and correlation were used.

**RESULTS**

The total number of subjects were 729, of which 251 (34.4%) were male and 478 (65.6%) females. 134 (18.4%), 168 (23%), 166 (22.8%), 132 (18.1%), and 129 (17.7%) were from Phase I, Phase II, Phase III Part I, Phase III Part II, and internship respectively. The mean age of the subjects was 21.66 ± 1.59 years.

Out of 729 students, 40 (5.5%) were found to have no internet addiction and 689 (94.5%) were found to have internet addiction. 443 (60.8%), 228 (31.3%), and 18 (2.5%) were found to have mild, moderate, and severe internet addiction, respectively [Graph 1]. The prevalence of mild and severe...
internet addiction was more among females, whereas moderate internet addiction was more among males [Graph 2]. The prevalence of mild internet addiction was highest among Phase I students, moderate addiction among Phase III, Part I, and severe addiction among Phase III Part II students [Graph 3]. The prevalence of mild internet addiction was highest among the management quota students and moderate and severe addiction among NRI quota students [Graph 4]. The prevalence of mild internet addiction was highest among the Hindus and moderate and severe addiction among Christians [Graph 5]. The prevalence of mild and moderate addiction was highest among urban origin students and severe addiction among rural origin students [Graph 6]. The prevalence of mild and severe addiction was highest among hostelites and moderate addiction among day scholars [Graph 7].

The prevalence of internet addiction was more among males compared to females, Part II, final phase students compared to other phase students, management quota students compared to other quota students, Christians compared to other religions, urban origin students compared to rural origin students, and day scholars compared to hostelites. However, only sex, phase of MBBS, and place of origin were found to have a statistically significant association ($P<0.01$, 0.026 and 0.049 respectively) [Table 1].

The average duration spent on internet/day by the subjects was $205.75 \pm 10.22$ min and the average amount spent on internet/month was $\₹ 211.3 \pm 12.05$. Most of the subjects were accessing internet using their mobile phones (96.84%), followed by laptop (23.46%), desktop (3.97%), and others (0.69%) [Table 2]. The highest proportion of the time spent on internet usage was on social networking (55.93%), followed by communication (21.81%), to gain knowledge (20.58%) and others (1.63%) [Table 3].

There was a weak negative correlation ($r = -0.117$) between the percentage of marks obtained in previous university examination and IA scores, and the correlation was found to be statistically significant ($P<0.01$) which means that more the degree of internet addiction worse would be academic performance [Table 4].
DISCUSSION

The prevalence of internet addiction among the study subjects was 94.5% which is more compared to other studies 58.87% and 76.84%. The probable reason for this difference could be the differences in the sociodemographic statuses of the study subjects. Furthermore, the entry into the market of a private telecom service provider which has been providing internet services at very low prices since late 2016 could be another contributory factor. 60.8%, 31.3%, and 2.5% of the subjects were found to have mild, moderate, and severe internet addiction respectively. Chaudhari et al. and Subhaprada et al.

Graph 5: Stacked bar graph comparing grades of internet addiction between different religions

Graph 6: Stacked bar graph comparing grades of internet addiction between the places of origin

Graph 7: Stacked bar graph comparing grades of internet addiction between the current residences

Graph 8: Correlation between the percentage of marks obtained in previous university examination and IA scores

Table 1: Factors associated with internet addiction

<table>
<thead>
<tr>
<th>Variables</th>
<th>IA present</th>
<th>IA absent</th>
<th>Total</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>248 (98.8)</td>
<td>3 (1.2)</td>
<td>251 (100)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Female</td>
<td>441 (92.3)</td>
<td>37 (7.7)</td>
<td>689 (100)</td>
<td></td>
</tr>
<tr>
<td>Phase of MBBS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>129 (96.3)</td>
<td>5 (3.7)</td>
<td>134 (100)</td>
<td>0.026</td>
</tr>
<tr>
<td>II</td>
<td>157 (93.5)</td>
<td>11 (6.5)</td>
<td>168 (100)</td>
<td></td>
</tr>
<tr>
<td>Part I, Final Phase</td>
<td>151 (91)</td>
<td>15 (9)</td>
<td>166 (100)</td>
<td></td>
</tr>
<tr>
<td>Part II, Final Phase</td>
<td>131 (99.2)</td>
<td>1 (0.8)</td>
<td>132 (100)</td>
<td></td>
</tr>
<tr>
<td>Internship</td>
<td>121 (93.8)</td>
<td>8 (6.2)</td>
<td>129 (100)</td>
<td></td>
</tr>
<tr>
<td>Quota of admission</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government</td>
<td>415 (94.3)</td>
<td>25 (4.7)</td>
<td>440 (100)</td>
<td>0.836*</td>
</tr>
<tr>
<td>Management</td>
<td>198 (95.2)</td>
<td>10 (4.8)</td>
<td>208 (100)</td>
<td></td>
</tr>
<tr>
<td>NRI</td>
<td>76 (93.8)</td>
<td>5 (6.2)</td>
<td>81 (100)</td>
<td></td>
</tr>
<tr>
<td>Religion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hindu</td>
<td>295 (93.1)</td>
<td>22 (6.9)</td>
<td>317 (100)</td>
<td>0.134*</td>
</tr>
<tr>
<td>Muslim</td>
<td>275 (94.5)</td>
<td>16 (5.5)</td>
<td>291 (100)</td>
<td></td>
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<tr>
<td>Christian</td>
<td>118 (98.3)</td>
<td>2 (1.7)</td>
<td>120 (100)</td>
<td></td>
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<tr>
<td>Others</td>
<td>1 (100)</td>
<td>0 (0)</td>
<td>1 (100)</td>
<td></td>
</tr>
<tr>
<td>Place of origin</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Rural</td>
<td>287 (92.6)</td>
<td>23 (7.4)</td>
<td>310 (100)</td>
<td>0.049</td>
</tr>
<tr>
<td>Urban</td>
<td>402 (95.9)</td>
<td>17 (4.1)</td>
<td>419 (100)</td>
<td></td>
</tr>
<tr>
<td>Current residence</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day scholar</td>
<td>4 (100)</td>
<td>0 (0)</td>
<td>4 (100)</td>
<td>1</td>
</tr>
<tr>
<td>Hostellite</td>
<td>685 (94.5)</td>
<td>40 (5.5)</td>
<td>725 (100)</td>
<td></td>
</tr>
</tbody>
</table>

*Fischer’s exact test was used as cells had expected frequencies <5
have also reported similar figures excepting that in both these studies there are no severe addicts.[18,19]

Internet addiction was more among males compared to females, Part II, final phase students compared to other phase students, management quota students compared to other quota students, Christians compared to other religions, urban origin students compared to rural origin subjects, and day scholars compared to hostellites. However, only sex, phase of MBBS, and place of origin were found to have a statistically significant association with internet addiction. Chaudhari et al. and Subhaprada et al. have also reported that the prevalence of internet addiction was more among males compared to females and the association as significant.[18,19]

There was a weak negative correlation between the percentage of marks obtained in previous university examination and IA scores. Subhaprada et al. have also reported a statistically significant association between the presence of internet addiction and adverse academic performance.[18,19]

The average duration spent on internet/day by the subjects was 205.75 ± 10.22 min. Sharma et al. have reported it as 77.4 (±75.06) mins/day per day.[8] The probable reason for this difference could be the differences in the sociodemographic statuses of the study subjects. Also, the entry into the market of a private telecom service provider which has been providing internet services at very low prices since late 2016 could be another contributory factor.

The limitation of the study was that since the study subjects were from a single college, the findings cannot be generalized to the medical students’ community of the country or world.

**CONCLUSIONS**

The prevalence of internet addiction among the study subjects was significantly more in the study subjects compared to other studies. Internet addiction was more among males compared to females, Part II, final phase students compared to other phase students, management quota students compared to other quota students, Christians compared to other religions, urban origin students compared to rural origin subjects, and day scholars compared to hostellites. However, only sex, phase of MBBS, and place of origin were found to have a statistically significant association with internet addiction.

The average duration spent on internet/day by the subjects was significantly more compared to other studies. There was a negative correlation between the degree of internet addiction and academic performance.

**CONFLICT OF INTEREST**

None declared

**SOURCE(S) OF FUNDING**

Nil

**ACKNOWLEDGEMENTS**

The authors would like to sincerely acknowledge the support provided by Professor and head, Department of Community Medicine and Management of the DMWIMS in conducting the study and also UG medical students of DMWIMS for their cooperation

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