



Internet Gaming Disorder Among Medical Students During Covid19 Pandemic

Dr. Chippy Joseph¹, Dr. Lakshmi KP^{2*}, Dr. Bindu Menon³

¹MD Resident, ²Assistant Professor, ³Professor and Head,

Department of Psychiatry, Amrita Institute of Medical Sciences and Research Center, Kochi, Kerala, India.

***Corresponding Author:**

Dr. Lakshmi KP

Assistant Professor, Psychiatry, Amrita Institute of Medical Sciences and Research Center, Kochi, Kerala, India

Type of Publication: Original Research Paper

Conflicts of Interest: Nil

Abstract

Background- Covid19 had caused significant disruption in the social functioning of people, especially the students. Lockdown and online education left many students with excessive use of internet for recreational and academic purposes, with many students getting addicted to internet gaming. There is however very little data on the prevalence of internet gaming disorder among the medical students, especially during the covid19 pandemic. This study aims to estimate the prevalence of internet gaming disorder among medical students during covid19 pandemic and also to estimate the student's perception of the influence of the pandemic on their internet use and in turn their academics.

Methods- A cross-sectional study was conducted on 100 medical students (undergraduates, interns and postgraduates) in a medical college, Kerala. After taking informed consent, they were given a questionnaire containing sociodemographic variables. Internet gaming disorder scale-short form was administered to assess the severity of the gaming disorder. To test the statistical significance of association of socio-demographic factors with Internet gaming disorder, Chi-square test was applied.

Results- 41% medical students had Internet gaming disorder. Prevalence of Internet gaming disorder was more among male students (p value 0.015) and among the postgraduate students (p value 0.003). 89% reported that their internet use had increased during Covid19 pandemic and 76% reported that it had affected their academics.

Conclusion- Nearly half of the medical students in this study had Internet gaming disorder. A closer look into internet gaming as a disorder is required, as this may silently impact the life and productivity of budding doctors.

Keywords: Internet gaming disorder, covid19, medical students

Introduction

The first case of COVID-19 in India was reported from Kerala. Thereafter the virus spread throughout the country causing significant turbulences in the functioning of society. COVID-19 pandemic has impacted the personal, social, and occupational life of students and has negatively affected their mental health. College going adolescents are highly vulnerable to the misuse of the internet especially by playing games. The increased and undisciplined use of internet by adolescents has led to the emergence of the concept of internet gaming addiction. During

COVID-19 pandemic, the psychological and environmental factors in the daily lives of medical students may leave them disproportionately vulnerable to internet addiction.

The concept of internet addiction has experienced significant debates over the years. WHO included internet gaming disorder in the chapter of substance and behavioural addiction in the 11th edition of the international classification of Diseases and related health problems (ICD-11) and "Internet gaming disorder" (IGD) is listed in the fifth edition of the (DSM Diagnostic and Statistical Manual of Mental

Disorders-5) appendix, as a condition that requires further study.[1] Meta analysis and systematic review conducted among college students in India by Joseph J reported an overall prevalence of Internet addiction as 19%. [2]

Multiple scales, questionnaires and instruments are developed over time to measure Internet gaming disorder. But the most commonly used reliable scale is the Internet gaming disorder scale- short form (IGDS9-SF) by Pointes and Griffiths,2015.[3] The scale consists of 9 items rated on a 5 point likert scale yielding a minimum of nine to a maximum of 45 points. The substantial data on the epidemiology of internet gaming disorder are voluminous across the globe. However, there is inconclusive evidence regarding the exact magnitude of the problem because the prevalence varies according to country and study context. A study conducted in six Asian countries reported that the prevalence of internet addiction varies from 5% to 21 %.[4] Internet gaming disorder is becoming increasingly detrimental to modern society, with serious consequences for daily functioning. Internet Gaming disorder may also be seen in medical students, as their life style changes, as imposed by the COVID-19 pandemic.[5]

The aim of our study is to assess the prevalence of internet gaming disorder among medical students during covid19 pandemic.

Materials and Methods

The study was a cross sectional study conducted in the 100 medical students (undergraduates, interns and postgraduates) in a medical college of Kerala during September 2021. It was approved by the scientific research and ethics committee of the institute. Students in a Medical College in Kerala, including undergraduates, house surgeons and postgraduates, were selected for the study. Subjects not willing to participate were excluded from the study. Written informed consent for the study was obtained from the participants. Socio-demographic details of subjects including age, gender, educational status, marital status were collected.

To assess the severity of the internet gaming disorder, Internet gaming disorder scale-short form (IGDS9-SF) was administered. It is a self reported screening measure based on the Diagnostic and Statistical Manual of mental Disorders (DSM-5) criteria. The

scale consists of 9 items rated on a 5 point likert scale ranging from 1 (never) to 5 (very often) yielding a minimum of 9 to a maximum of 45 points. Total scores can be obtained by summing up all responses given to all 9 items of the IGDS9-SF with higher scores being indicative of a higher degree of Internet Gaming Disorder.[3] The cutoff score of 21 was taken for diagnosing IGD.[6] The IGDS9-SF had shown adequate construct and criterion validity, as well as an excellent reliability with an internal consistency coefficient (cronbach's alpha) of 0.88.[7]

Nine questions in IGDS9-SF include 1) preoccupation with online/offline gaming; 2) experience of unpleasant symptoms when gaming is taken away; 3) the need to spend increasing amounts of time engaged in games; 4) unsuccessful attempts to control participation in games; 5) loss of interest in previous hobbies and entertainment as a result of, and with the exception of, games; 6) continued excessive use of games despite knowledge of psychosocial problems; 7) deceiving family members, therapists, or others regarding the amount of gaming; 8) use of games to escape or relieve negative moods; and 9) jeopardizing or losing a significant relationship, job, or education or career opportunity because of participation in game. According to the Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5), the clinical diagnosis of IGD requires the endorsement of at least five (or more) of the following above criteria.[8]

This study was completed in one month with a sample size of 100 participants. The data was analyzed using SPSS software. As there were no studies done previously on this topic at that time, a pilot study was conducted with 10 participants, sample size came to 25 with 95% confidence and 20% error.

Results

100 medical students (Interns, undergraduates, postgraduates) were analyzed for the study. The prevalence of internet gaming disorder was found to be 41%. IGDS9-SF scale was used in this study and the responses of participants are given in Table 1. 65% were aged between 20-25 years, 23% were aged between 25-30 years, 9% were less than 20 and 3% were more than 30 years. Among the study population, 56 were female participants and the remaining 44 were males. The majority of the

participants (41%) were undergraduates followed by 35% interns and 24% postgraduate students. The distribution of Internet Gaming Disorder with various socio-demographic variables is given in Table 2. Internet gaming disorder was more prevalent among males in our study and this was statistically significant (p value 0.015). Similarly, there was a statistically significant association between the

internet gaming disorder and the educational status, with more prevalence of internet gaming disorder among postgraduate students (p value 0.003). 89% reported that their internet use has increased compared to their internet use prior to COVID-19 pandemic and 76% reported that it has affected their academics.

Table-1: Response of various participants to the Questions of IGDS9-SF scale

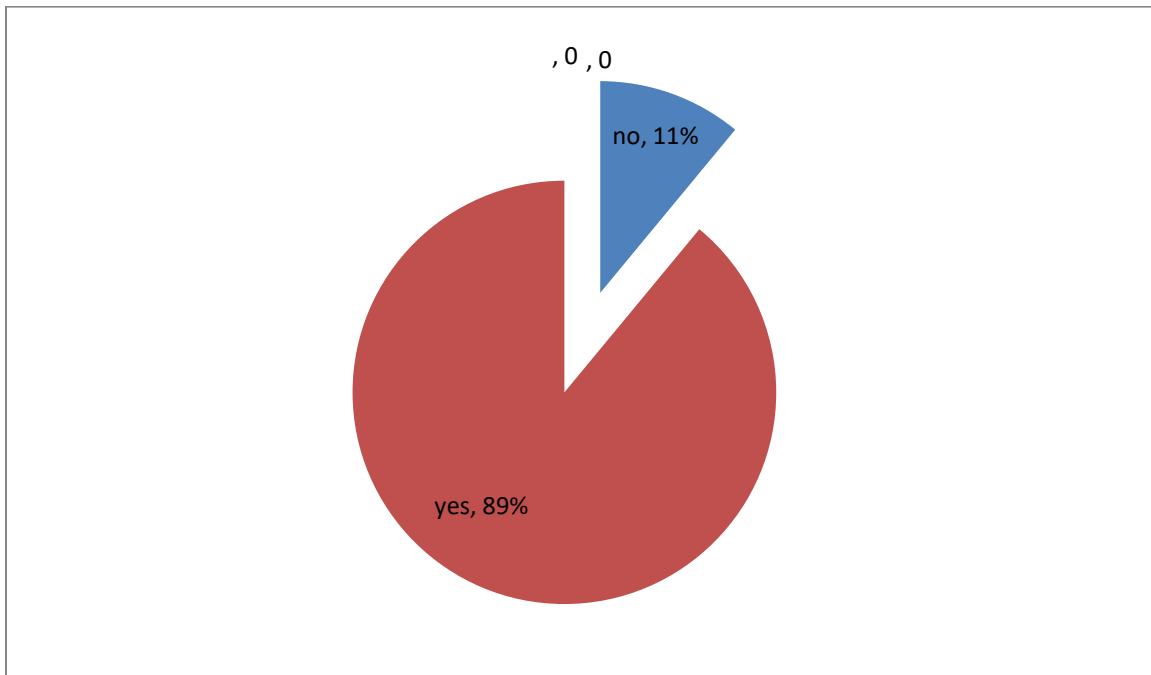
| 100 participants | | Response to IGD scale by participants | | | | |
|------------------|--|---------------------------------------|---------|---------|---------|---------|
| SL No: | IGD SCALE | 1 | 2 | 3 | 4 | 5 |
| 1 | Have you spend a lot of time thinking about games or planned gaming | 30(30%) | 22(22%) | 13(13%) | 13(13%) | 13(13%) |
| 2 | Did you get annoyed,uneasy or upset when you couldn't play | 43(43%) | 22(22%) | 11(11%) | 10(10%) | 14(14%) |
| 3 | Have you felt the need to play more and more? | 28(28%) | 20(20%) | 26(26%) | 17(17%) | 9(9%) |
| 4 | Have you tried to cutdown on gaming without succeeding | 39(39%) | 13(13%) | 16(16%) | 17(17%) | 15(15%) |
| 5 | Have you lost interest in previous hobbies and leisure activities because of gaming? | 54(54%) | 11(11%) | 12(12%) | 11(11%) | 12(12%) |
| 6 | Did u continue to play even though it created problems on you? | 44(44%) | 17(17%) | 12(12%) | 12(12%) | 14(14%) |
| 7 | Have you lied to family members, therapists or others about how much you have played? | 50(50%) | 12(12%) | 13(13%) | 13(13%) | 11(11%) |
| 8 | Did you play to reduce negative feelings? | 31(31%) | 28(28%) | 4(4%) | 20(20%) | 16(16%) |
| 9 | Have you risked or ruined an important relationship,job, or career opportunity because of gaming | 55(55%) | 10(10%) | 10(10%) | 14(14%) | 11(11%) |

Table 2: Association of Internet Gaming Disorder with various socio-demographic variables

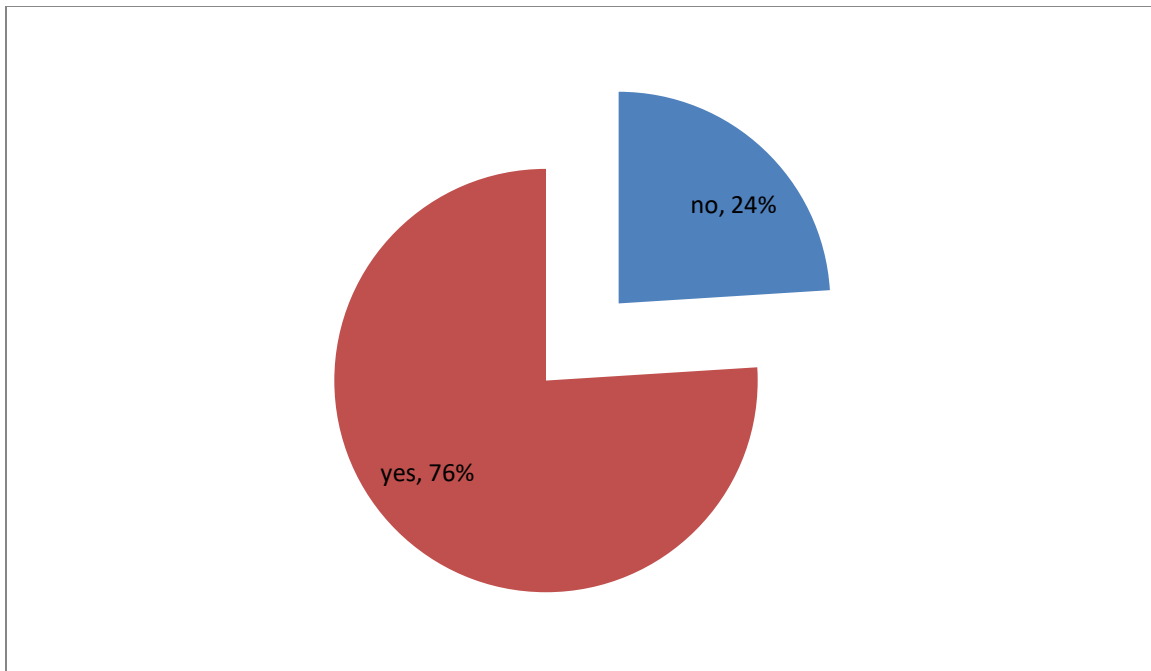
| Socio-demographic variables | | Internet gaming disorder | | | | p value |
|-----------------------------|----------------|--------------------------|-------|----|-------|---------|
| | | Yes | | No | | |
| | | n | % | n | % | |
| Age | <20years | 2 | 22.2% | 7 | 77.8% | 0.506 |
| | 20-25years | 21 | 32.3% | 44 | 67.7% | |
| | 25-30years | 16 | 69.6% | 7 | 30.4% | |
| | >30years | 2 | 66.7% | 1 | 33.3% | |
| Sex | Female | 17 | 30.4% | 39 | 69.6% | 0.013* |
| | Male | 24 | 54.5% | 20 | 45.5% | |
| Educational status | Interns | 11 | 31.4% | 24 | 68.6% | 0.003* |
| | Undergraduates | 13 | 31.7% | 28 | 68.3% | |
| | Postgraduates | 17 | 70.8% | 7 | 29.2% | |
| Marital status | Single | 37 | 40.2% | 55 | 59.8% | 0.589 |
| | Married | 4 | 50% | 4 | 50% | |

*p value less than 0.05 was considered statistically significant

Graph 1: Percentage of participants reporting that their internet use has increased compared to their use prior to COVID-19 pandemic



Graph 2: Percentage of participants reporting that their internet use has affected their academics during COVID-19 pandemic



Discussion

Research on Internet gaming disorder among medical students during COVID-19 pandemic has not been done extensively, especially in the southern part of India. In our study, we have surveyed the prevalence

of internet gaming disorder among medical students during covid19 pandemic. 100 medical students (Interns, undergraduates, postgraduates) were analyzed during COVID-19 pandemic and the prevalence of Internet gaming disorder was noted to be 41%. Studies done by Chaudari B et al and

Sharma et al reported a prevalence of internet addiction as 58.87% and 42.7% respectively among medical and other professional college students in India.[9,7] Meta analysis conducted by Zhang MWB et al reported that internet addiction was five times more common in the medical professionals than in general students.[10] A study by B Lakshmi Dorai et al done in Tamilnadu reported the prevalence of internet addiction among medical college students as 46.7%.[11] This study further confirms the high prevalence of internet gaming disorder in medical college students and the need for a serious inspection of its impact on the budding doctors. It can hamper their academic performance as well as the service they provide to the population.

In this study, the majority of participants were between 20-25 years of age. When socio-demographic variables were compared with internet gaming disorder, there was significant association found with respect to gender and educational status, but the association with age group and marital status were not statistically significant. Students of younger age were more prone to internet gaming disorder. This may be explained by the fact that they tend to use the internet excessively due to poor self-control and less parental supervision. Internet Gaming disorder was more prevalent in postgraduates in our study (p value 0.003), which may be explained based on the increased stress and responsibilities they have. This aspect was not evaluated in previous studies; hence the comparison cannot be done. This study showed a higher prevalence of Internet gaming disorder in males than females (p value 0.015), but a study done by Lakshmi Dorai et al reported higher number of females addicted to internet than males.[11] But they studied internet addiction but our study was on Internet gaming disorder. In our study, Internet Gaming Disorder was more prevalent among married medical students compared to unmarried medical students. This may lead to problems in their relationships and also can harm their marriage life. However, this finding needs further research as it was not statistically significant.

The findings of our study will provide valuable input to the policy makers and medical health professionals worldwide to provide prevention based interventions for excessive use of internet among medical students. Further studies are needed to see if personality traits have any correlation with internet gaming disorder

and also to study the prevalence of internet gaming disorder among non medical students.

Due to the cross sectional study design, no causal inference can be made regarding the observed associations. The data was collected through a self reported questionnaire and hence there is a potential recall bias. The prevalence of internet gaming disorder was assessed only among medical students who might affect the external validity. The occurrence among other educational settings was not assessed in this study.

References

1. Kocsis RN. Book Review: Diagnostic and Statistical Manual of Mental Disorders: Fifth Edition (DSM-5). *Int J Offender Ther Comp Criminol.* 2013;57(12):1546–8.
2. Joseph J, Varghese A, Vr V, Dhandapani M, Grover S, Sharma S, Khakha D, Mann S, Varkey BP. Prevalence of internet addiction among college students in the Indian setting: a systematic review and meta-analysis. *Gen Psychiatr.* 2021 Aug 20;34(4):e100496. doi: 10.1136/gpsych-2021-100496. PMID: 34504996; PMCID: PMC8381302.
3. Pontes HM, Griffiths MD. Measuring DSM-5 internet gaming disorder: Development and validation of a short psychometric scale. *Computers in human behavior.* 2015 Apr 1;45:137-43.
4. Mak KK, Lai CM, Watanabe H, Kim DI, Bahar N, Ramos M, Young KS, Ho RC, Aum NR, Cheng C. Epidemiology of internet behaviors and addiction among adolescents in six Asian countries. *Cyberpsychol Behav Soc Netw.* 2014 Nov;17(11):720-8. doi: 10.1089/cyber.2014.0139. PMID: 25405785.
5. Oka T, Hamamura T, Miyake Y, Kobayashi N, Honjo M, Kawato M, Kubo T, Chiba T. Prevalence and risk factors of internet gaming disorder and problematic internet use before and during the COVID-19 pandemic: A large online survey of Japanese adults. *J Psychiatr Res.* 2021 Oct;142:218-225. doi: 10.1016/j.jpsychires.2021.07.054. Epub 2021 Aug 4. Erratum in: *J Psychiatr Res.* 2022 Apr;148:275-276. PMID: 34385071.
6. Monacis L, Palo V, Griffiths MD, Sinatra M. Validation of the Internet Gaming Disorder Scale

- Short-Form (IGDS9-SF) in an Italian-speaking sample. *J Behav Addict*. 2016 Dec;5(4):683-690. doi: 10.1556/2006.5.2016.083. Epub 2016 Nov 23. PMID: 27876422; PMCID: PMC5370374.
7. 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(9):1069
 8. Qin L, Cheng L, Hu M, Liu Q, Tong J, Hao W, Luo T, Liao Y. Clarification of the Cut-off Score for Nine-Item Internet Gaming Disorder Scale-Short Form (IGDS9-SF) in a Chinese Context. *Front Psychiatry*. 2020 May 25;11:470. doi: 10.3389/fpsy.2020.00470. PMID: 32528331; PMCID: PMC7262730.
 9. Chaudhari B, Menon P, Saldanha D, Tewari A, Bhattacharya L. Internet addiction and its determinants among medical students. *Ind Psychiatry J*. 2015 Jul-Dec;24(2):158-62. doi: 10.4103/0972-6748.181729. PMID: 27212820; PMCID: PMC4866343.
 10. Zhang MWB, Lim RBC, Lee C, Ho RCM. Prevalence of Internet Addiction in Medical Students: a Meta-analysis. *Acad Psychiatry*. 2018 Feb;42(1):88-93. doi: 10.1007/s40596-017-0794-1. Epub 2017 Aug 28. PMID: 28849574.
 11. DoraiB L, Alex SS, Pradeep C. Prevalence of internet addiction and its relationship with disordered eating among medical college students in south India: a cross-sectional study. *Kerala Journal of Psychiatry* 2021; 34(2):142-148.