



Prevalence of Internet Gaming Disorder Among Medical Students -A Cross-Sectional Study

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Type of Publication: Original Research Paper

Conflicts of Interest: Nil

Abstract

Background: Internet Gaming disorder, has been among the International Classification of Diseases (ICD-11) as a clinically recognizable and clinically significant syndrome. Health concerns associated with gaming behaviour are insufficient physical activity, unhealthy diet, problems with eyesight or hearing, musculoskeletal problems, sleep deprivation, aggressive behaviour, depression, and psychosocial functioning. During COVID-19 lockdown, Gaming disorder has increased among students. So, an attempt is made to know the prevalence of gaming disorder among Medical Students in the Indian context.

Materials and Methods: The nine-item Internet Gaming Disorder Scale– Short-Form (IGDS9-SF) questionnaire developed by Pontes and Griffiths was administered to first and second MBBS students of Andhra Medical College, Visakhapatnam in google forms. The responses were entered in excel and analyzed using SPSS version.

Results: Among 322 students who participated in the study, 225 (69.9%) were from 1st MBBS and 97 (30%) from 2nd MBBS. The mean age of the study participants is 18.91 with a standard deviation of 0.98. There were 148 male students and 174 female students. The mean score of IGDS9-SF among males is 17.66±6.41 and the mean score among females is 13.95±5.47. There is a significant difference among males compared to females with p-value of 0.0001 which implies internet gaming is significantly high among male students as compared to females. 2.5 % of the participants have internet gaming disorder when the cut-off score is taken as 32 and 17.4% when the cut-off is taken as 21.

Conclusion: The prevalence of internet gaming disorder among medical students is low but on the rise.

Keywords: IGDS9-SF, medical students

Introduction

Gaming disorder is defined in the 11th Revision of the International Classification of Diseases (ICD-11) as a pattern of gaming behavior (“digital-gaming” or “video-gaming”) characterized by impaired control over gaming, increasing priority given to gaming over other activities to the extent that gaming takes precedence over other interests and daily activities, and continuation or escalation of gaming despite the occurrence of negative consequences.¹ Health

concerns associated with gaming behavior are not limited to gaming disorder, but also include other aspects of health (e.g. insufficient physical activity, unhealthy diet, problems with eyesight or hearing, musculoskeletal problems, sleep deprivation, aggressive behavior, and depression) and psychosocial functioning.¹

Because of advanced technology, gaming devices are easily available on smartphones, tablets, or gaming consoles at an affordable price and thus have made

gaming more engaging, attractive, and accessible.² Playing digital games among adolescents and young adults has increased as a leisure activity.³ Although gaming is considered a harmless activity, in certain population adverse consequences of engaging in this behavior is noticed.⁴ Gaming could be harmful to physical and mental well-being and may also promote negative behaviors such as smoking and aggression.³

India is currently ranked fifth on the list of top countries by game downloads globally and research found that the prevalence of Gaming disorder was progressively increasing. Gaming has been recognized as a coping mechanism against stress by most students.¹

During the COVID-19 lockdown, Gaming disorder increased among the students.⁴ An attempt is made to know the prevalence of gaming disorder among Medical Students in the Indian context. This study will be helpful as it may add valuable information for further research.

Methodology:

Study setting and design: The present study is a cross-sectional study done among the Under Graduate Medical Students of Andhra Medical College, Visakhapatnam, Andhra Pradesh

Inclusion criteria: Students of first and second MBBS students who are willing to participate are included in the study.

Sample size: The estimated sample size was 334, with a prevalence of 3.6%,¹³ 2% absolute error at 95% confidence levels. The response rate was 96.4% (322).

Study tools and Data collection: The nine-item Internet Gaming Disorder Scale– Short-Form (IGDS9-SF) developed by Pontes and Griffiths

suggested by the DSM-5 is used as a study tool. The IGDS9-SF assesses symptoms and prevalence of IGD by examining both online and/or offline gaming activities occurring over a 12-month period. The scale produces final scores between 9 and 45. It is a five-point Likert scale with “Never” as 1 and “very Often” as 5 scores.

The studies done by Qin L, Cheng L *et.al*⁵ and Lucia, Monacis *et al*⁶, show that the cut-off IGDS9 score for classifying a person as having internet gaming disorder was 32 and 21 respectively. So, both these points are taken as cutoff points in our study.

The criteria to differentiate disordered gamers from non-disordered gamers, the participants who have endorsed at least five out of nine criteria by taking into account answers as ‘5: Very Often’².

Data collection and Analysis: A pre-tested self-administered questionnaire was sent in google form to medical students. Data was entered in excel and analyzed using SPSS version 17. Independent sample–t-test was done to calculate the difference between means. A P-Value of <0.05 was considered to be significant.

Ethical consideration: The study was done after approval from the Institutional Ethics Committee. Informed Consent form from participants was obtained online.

Results:

A total of 322 students participated in the study of which 69.9% were from 1stMBBS and 30% from 2nd MBBS. The mean age of the study participants is 18.91 with a standard deviation of 0.98. There were 148 male students and 174 female students in the study. The mean age among males is 18.96 ±0.99 and the mean age of females is 18.86±0.97.

Table.1 Frequency of IGDSF-9 score across various variables

Variable	N	Mean	Std. Deviation	P-Value
Gender				
Male	148	17.6	6.4	0.0001

Female	174	13.9	5.4	
Year of study 1stMBBS	225	15.6	6.30334	0.776
2ndMBBS	97	15.8144	5.97273	
Place of residence				
Hostel	206	15.7	5.9	0.69
Day scholar	116	15.4	6.5	

The mean score among males is 17.66 ± 6.41 and the mean score among females is 13.95 ± 5.47 . There is a significant difference among males compared to females with a p-value of 0.0001, which implies internet gaming is significantly high among male students as compared to females.

The mean IGDSF-9 scores among 1st MBBS is 15.60 ± 6.3 and the mean IGDSF-9 scores among 2nd MBBS is 15.8144 ± 5.97 . There is no significant difference in the IGDSF-9 total scores between 1st and 2nd MBBS students.

The mean IGDSF-9 score among hostelers is 15.76 ± 5.99 and the mean IGDSF-9 score among day scholars is 15.48 ± 6.55 . There is no significant difference in the mean IGDSF-9 score according to the residence of the students.

TABLE 2 IGDS9-SF WITH A TOTAL SCORE OF 32 AS CUT OFF

		Frequency	Percent
Valid	<32	314	97.5
	>=32	8	2.5
	Total	322	100.0

2.5 % of the participants have internet gaming disorder.

TABLE -3 IGDS9-SF WITH A TOTAL SCORE OF 21 AS CUT OFF

		Frequency	Percent
Valid	<=21	266	82.6
	>21	56	17.4
	Total	322	100

In the current study, 17.4% of the students are having IGD when the cut-off score is taken as 21. This proportion is high and validation of the questionnaire in India is required

TABLE:4 RESPONSES OF THE PARTICIPANTS TO THE IGDS9-SF

	Never (1)	Rarely (2)	Sometimes (3)	Often (4)	Very Often (5)	Total (100)
1 Do you feel preoccupied with your gaming behavior? (Some examples: Do you think about previous gaming activity or anticipate the next gaming session? Do you think gaming has become the dominant activity in your daily life?)	140 (43.5)	75 (23.3)	81 (25.2)	13 (4)	13 (4)	322 (100)
2 Do you feel more irritability, anxiety, or even sadness when you try to either reduce or stop your gaming activity?	199 (61.8)	71 (22)	33 (10.2)	12 (3.7)	7 (2.2)	322 (100)
3 Do you feel the need to spend an increasing amount of time engaged in gaming in order to achieve satisfaction or pleasure?	162 (50.3)	81 (25.2)	47 (14.6)	24 (7.5)	8 (2.5)	322 (100)
4 Do you systematically fail when trying to control or cease your gaming activity?	199 (61.8)	49 (15.2)	44 (13.7)	22 (6.8)	8 (2.5)	322 (100)
5 Have you lost interest in previous hobbies and other entertainment activities as a result of your engagement with the game?	194 (60.2)	55 (17.1)	40 (12.4)	28 (8.7)	5 (1.6)	322 (100)
6 Have you continued your gaming activity despite knowing it was causing problems between you and other people?	228 (70.8)	33 (10.2)	38 (11.8)	13 (4)	10 (3.1)	322 (100)
7 Have you deceived any of your family members, therapists, or others because of the amount of your gaming activity?	278 (86.3)	22 (6.8)	16 (5)	5 (1.6)	1 (0.3)	322 (100)
8 Do you play in order to temporarily escape or relieve a negative mood (e.g., helplessness, guilt, anxiety)?	73 (22.7)	62 (19.3)	113 (35.1)	46 (14.3)	28 (8.7)	322 (100)
9 Have you jeopardized or lost an important relationship, job, or educational or career opportunity	286 (88.8)	18 (5.6)	9 (2.8)	7 (2.2)	2 (0.6)	322 (100)

because of your gaming activity?

23% of the participants often play in order to temporarily escape or relieve a negative mood. Around 10% of the students often lost interest in other entertainment activities because of their engagement with internet games and 10% of the participants feel that they need to spend more time gaming to achieve satisfaction or pleasure.

Our study results show 1.2% of the participants were disordered gamers².

Discussion:

The mean age of the students in our study is comparable to a study done in Nepal by Shreshta *et al*³; The mean age of the participants was 20.85 years. Out of the total participants, 52.3% were females. Most of the students (87.5%) were living with their families during this pandemic lockdown period. In another study done in New Delhi among medical students by Singh S *et al*⁷, the mean age is 22.7 but they've also included postgraduates.

In our study, the mean score among males is 17.66 ± 6.41 and the mean score among females is 13.95 ± 5.47 . Our results are similar to the study done by Al Asqah *et al*⁸, at King Saudh University, Riyadh, Saudi Arabia, where the prevalence of IGD was higher among males (10.1%) compared to females (6.3%) and the difference is statistically significant. In India, a study conducted by Agarwal *et al*⁴, among medical and dental undergraduate students showed the prevalence of IGD was higher among males (16%) compared to females (5%) and the difference is significant.

The mean IGDSF-9 scores among hostelers is 15.76 ± 5.99 and the mean IGDSF-9 scores among day scholars is 15.48 ± 6.55 . There is no significant difference in the mean IGDSF-9 scores according to the residence. These results can imply that there is unrestricted access to the internet and online games equally among Day scholars and Hostellers.

In the current study, 2.5 % of the participants have internet gaming disorder.

Similar results were found in the study done by Siste K, Hanafi E *et al*⁹; in Indonesia, among the 639 respondents, the prevalence rate of internet gaming disorder was 2.03%. In another study done in Peshawar medical college¹⁰, Islamabad, Pakistan, the prevalence of internet gaming disorder is 1.5%.

In a study done by Al Asqah *et al*⁸, at King Saudh University, Riyadh, Saudi Arabia, the prevalence of

IGD was 8.8% which was much higher than the prevalence of IGD in the current study. The prevalence of gaming disorder was 8.5% among 260 internet gaming users in a study done by Shrestha, Met *et al*³; in Nepal during the period of COVID-19 Lockdown.

The current study shows 1.2% of the participants are disordered gamers. These results are different from a study done by S Singh *et al*⁷; where the disordered gamers were 3.6%.

Based on the study "Validation of the Internet Gaming Disorder Scale – Short- Form (IGDS9-SF) in an Italian-speaking sample"¹² the ROC curve analysis showed, a first empirically optimal cut-off of 21 points was yielded for diagnosing IGD with the brief version of the scale. This was adopted into the current study with a cut-off of 21 score which showed 17.4% of the students with Internet Gaming Disorder.

Conclusion And Recommendation: The prevalence of internet gaming disorder among medical students is 2.5% which is lesser than most of the studies done in other developed countries. With a cut-off of 32 it showed a low (2.5%) proportion of gaming disorder and with a cut-off of 21, it showed a significant proportion (17.4%) of IGD. Hence there should be studies to validate IGDSF-9 in the Indian context.

Internet gaming disorder was significantly higher among males as compared with females in almost all the studies. There is no significant difference of internet gaming disorder in the domain of year of study" and "residence.

The prevalence of internet gaming disorder among medical students is low. However, they should be alert to the amount of time they spend on gaming activities, particularly when it is to the exclusion of other daily activities, as well as to any changes in their physical or psychological health and social functioning.

Acknowledgments: The completion of the study could not have been possible without the participation of the MEDICAL STUDENTS whose responses had been a tremendous contribution to the study.

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