

## RESEARCH ARTICLE

# Prevalence of internet gaming disorder among medical students at medical college in Jamnagar, Gujarat

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## ABSTRACT

**Background:** Smartphone usage became drastically increased in the past two decades. Spending abnormally more time playing games can lead to development of internet gaming disorder (IGD) which leads to negative impact on health and lifestyle. **Aim and Objectives:** The aim of this study was to find out the prevalence of IGD and smartphone usage patterns in medical students. **Materials and Methods:** The study was held in M. P. Shah Government Medical College in Jamnagar. Total 206 1<sup>st</sup> year medical students were included for this study. Pre-validated self-made questionnaire and pre-structured IGD-20 questionnaire were used in this study. **Results:** The prevalence of IGD in medical students is 1.46%. In male population, the prevalence of IGD was higher (1.6%) compared to female population (1.23%). **Conclusion:** IGD can be a great disaster if remain unnoticed. It can change one's lifestyle gradually. Preventive measures such as parental locking system and strong rules for mobile phone use in university hours should be implied.

**KEY WORDS:** Internet Gaming Disorder; Prevalence; IGD-20; Questionnaire; Medical Students


## INTRODUCTION

Information technology became the integral part of one's lifestyle and smartphones are important part of it. Nowadays, it is hard to imagine to being separate from the technology world. Specifically speaking since past two decades, world became dramatically dependent on technology. In India after the campaigns such as "DIGITAL INDIA" and "BHARATNET," many services are made available electronically. Many currencies are now generated electronically and transactions are made online. Studies became online in the COVID-19 pandemic era and even people started working from home in many workstreams. Due to all these and many other situations, smartphone usage became drastically increased

in the past two decades. India had 750 million smartphone users in 2021 which will be increase to 1 billion by 2026. Smartphones, nowadays, are giving high competition to specific gaming consoles. Games such as PUBG (player unknown battle ground), Ludo, Subway surfer, Temple run, and Helix jump became quite popular in the past decade among young population. Many of these games are played online and cannot be paused or delayed. Spending abnormally more time playing games leads to development of internet gaming disorder (IGD) which leads to negative impact on health and lifestyle. The prevalence of IGD was 1.3–19.9% among the adolescent age group especially higher in male adolescents and adults.<sup>[1,2]</sup> With increasing smartphone users in India, the prevalence of IGD could potentially increase in future. The aim of this study was to find out prevalence of IGD in medical students.

## MATERIALS AND METHODS

The study was held in M. P. Shah Government Medical College in Jamnagar. The study duration of 5 months was

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taken. Total 206 1<sup>st</sup> year medical students were included for this study. Data collection was done after obtaining the approval letter from the ethical committee. Pre-validated self-made questionnaire and pre-structured IGD-20 questionnaire were used in this study.<sup>[3,4]</sup> After the obtaining well-informed written consent from each of the medical student, data collection was done through Google Form. All the necessary information for understand the questionnaire was provided to the students before taking their responses. We considered students between 18 and 25 of age and having internet enabled smartphones in this study. We have excluded the students who do not have smartphones (having not phone at all/having feature phones) or already having any kind of psychological disorders before the study.

In our study, we analyzed six components of gaming disorder from the scores of IGD 20 questionnaire. To test the internal reliability of this scale, Cronbach's alpha was used. In this study, we found internal consistency of 0.73 which means acceptable scale.

IGD-20 is an instrument containing 20 items, in which each item having five-point Likert scale (from 1-strongly disagree to five-strongly agree) to assess the severity of the disorder. This instrument is based on the nine criteria of IGD which is mentioned in DSM-5.<sup>[3,4]</sup> IGD-20 is reliable and validated tool for assessing IGD, because it contains practical questions based on salience, mood modification, tolerance, withdrawal symptoms, conflict, and relapse which are easier to understand and answer. The total score is calculated from sum of all 20 answers given and recorded out of 100 points. The cutoff score is 71 points which are based on the previous study done by Pontes and Griffith.<sup>[3,4]</sup> All the data were analyzed with IBM SPSS Statistics version 25.

**Table 1: Demographic characteristics of medical students**

Variables	Male	Female	Total
Gender	125 (60.68%)	81 (39.32%)	206 (100%)
Age-mean (SD)	18.95 (0.99)	19.05 (0.97)	18.99 (0.98)

**Table 2: Internet gaming disorder-20 score among medical students**

IGD score	Male (%)	Female (%)	Total (%)
<71	123 (98.4)	80 (98.77)	203 (98.54)
>71	2 (1.6)	1 (1.23)	3 (1.46)

IGD: Internet gaming disorder

**Table 3: Six factors analysis summary of IGD-20 in medical students**

IGD-20 score	Salience	Mood modification	Tolerance	Withdrawal symptoms	Conflict	Relapse
Mean	5.40	7.34	5.27	4.58	10.24	5.57
SD	2.52	2.49	2.36	2.22	3.18	2.60
Cronbach's alpha	0.70	0.27	0.67	0.79	0.48	0.73

IGD: Internet gaming disorder

## RESULTS

The findings of the present study are summarized in Tables 1-6.

## DISCUSSION

In this study, out of 206 medical students, 125 males (60.68%) and 81 females (39.32%) took participation. Mean age of males and females was 18.95 and 19.05, respectively. In this study, we found that out of total study population of 206 students, 203 (98.54%) students were having IGD score less than cutoff value of 71, and remaining 3 (1.46%) students were having IGD score more than 71.

In our study, we find out that the prevalence of IGD in medical students is 1.46%. In male population, the prevalence of IGD was higher (1.6%) compared to female population (1.23%). Various previous studies showing various prevalence of IGD ranging from 0.7% to 27.5%.<sup>[5]</sup> Savanthe and Savolu found 10% prevalence of IGD in Kurnool medical students.<sup>[6]</sup> Rehbein *et al.* had 1.16% prevalence of IGD in German adolescents.<sup>[7]</sup> Bisht *et al.* had 23% prevalence of IGD in college students.<sup>[8]</sup> Taechoyotin *et al.* found out 5.4% IGD prevalence in secondary school students in Thailand.<sup>[9]</sup>

We analyzed the smartphone usage patterns in students. We found that smartphone usage hours per day were higher in IGD students (4.17) compared to non-IGD students (2.96). Social media usage was also high in IGD students (2.83) compared to non-IGD students (1.65). Finally, gaming hours per day were also found higher in IGD students (2.17) compared to non-IGD students (0.87). In this study, we found that online games were more preferred by IGD students (66.67%) which mainly include PUBG. Various type of games were preferred by medical students which include mainly PUBG, ludo, subway surfers, candy crush, and clash royale. Out of 206, 16 (7.77%) students were not preferring any type (online/offline) of digital games.

## Study Limitations

In our study, there were certain limitations in term of study population which was limited to particular medical students aged between 18 and 25. Furthermore, we included self-response questionnaire which may involve recall bias. In this study, randomization was not done.

**Table 4:** Smartphone usage pattern in medical students

Usage pattern	Total	IGD	NIGD
Smartphone usage/day (h)	2.98	4.17	2.96
Social media usage/day (h)	1.67	2.83	1.65
Gaming/day (h)	0.89	2.17	0.87

IGD: Internet gaming disorder

**Table 5:** Type of mode of gaming preferred by medical students

Type of mode of gaming	Total (%)	IGD (%)	NIGD (%)
Online	108 (52.42)	2 (66.67)	106 (52.22)
Offline	82 (39.81)	1 (33.33)	81 (39.90)
Not preferred at all	16 (7.77)	0 (0)	16 (7.88)
Total	206 (100)	3 (100)	203 (100)

**Table 6:** Various games preferred by medical students

Name of the game	Total
Ludo	40 (19.42)
PUBG	34 (16.50)
Subway surfers	28 (13.59)
Candy crush	26 (12.62)
Clash royale	15 (7.28)
Temple run	12 (5.83)
Others	35 (16.99)
Not preferred at all	16 (7.77)
Total	206 (100)

PUBG: Player unknown battle ground

## CONCLUSION

At present, IGD prevalence number may be looked smaller, but, in future, it can be a great disaster if remain unnoticed. IGD can also be involved as a co factor with other psychological disorders like depression.<sup>[8]</sup> It can change one's lifestyle gradually. Low mood and procrastination can develop in students which impact their study and social life. Early detection of abnormal usage and monitoring of portable

digital devices usage time should be implied. Preventive measures such as parental locking system and strong rules for mobile phone use in university hours should be implied.

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