Original Article :

The Prevalence of Internet Gaming Disorder Among Medical Students at Umm Al-Qura University (UQU), Saudi Arabia. A cross-sectional study.

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Abstract

Background and Aims:
Internet gaming disorder (IGD) is a worldwide psychological illness that can cause substantial suffering and impairment of gamers' mental and physical health. Our study aimed to investigate the prevalence of IGD as well as the correlations between this disorder and gender, age and GPA among medical students at Umm Al-Qura University (UQU), Saudi Arabia.

Methods:
This was a comparative cross-sectional study conducted through an online survey between August 2022 and December 2022. The questionnaire was administered to male and female students across all years attending the Faculty of Medicine at Umm Al-Qura University, Saudi Arabia.

Results:
The sample included 351 responses from medical students, more than half of them male (58.1%). In our study, 14.5% of the participants had IGD, while 44% of people were at risk of getting this illness. There was a significant association between IGD and gender, with the male participants having twice as high a risk of developing it as the females.

Conclusions:
This study's findings show that medical students have a high rate of IGD, which has a significant relationship with gender, four times higher in males than in females. However, IGD did not significantly correlate with GPA or age. It is necessary to conduct more research on the topic of psychological distress of medical students with IGD.

Keywords:
Internet gaming disorder, medical students, prevalence.

Introduction

The previous 10 years have seen significant advancements in gaming technology, as well as an increase in the accessibility and affordability of high-speed internet[1]. As a result, internet gaming disorder (IGD) is now widely acknowledged as a psychological illness that causes substantial suffering and impairment[2]. In 2013, the American Psychiatric Association added IGD to the Diagnostic and Statistical Manual of Mental Disorders fifth edition (DSM-5) as a disease that needs more research and investigation. An individual is considered to have IGD if they experience five (or more) of the DSM-5's recommended criteria for the disease in one year: i) preoccupation with gaming, ii) withdrawal symptoms if gaming is not available, iii) tolerance , iv) unsuccessful attempts to control playing online games, v) loss of interest in hobbies due to playing online games, vi) continued excessive use of online games despite knowledge of the effects, vii) deception of others regarding the amount of time spent playing online games, viii) use of online games as a means of escaping unpleasant emotions, and ix) experience of negative effect[3]. In 2018, in its 11th revision of the International Classification of Diseases (ICD-11), the World Health Organization (WHO) classified gaming addiction as a disorder that should be recognized, diagnosed, and treated by healthcare providers at the community level[4].

While earlier research looked at the overall frequency of IGD generally, later research has emphasized the need to research IGD among university students[5,6]. To advance students' academic work, the Internet is now freely accessible on college campuses. However, this has made online gaming a widely available and often preferred activity, thus increasing the susceptibility of university students to develop IGD[6]. According to the research, the prevalence of IGD is estimated to be 3.05% worldwide and 1.6% among teenagers in Europe between the ages of 14 and 17 [7]. A survey of 7,022 first-year college students in Mexico discovered a 5.2% prevalence rate of IGD[6]. Medical students may be more susceptible to becoming addicted to online games than other university students because of the additional and particular difficulties they experience, a study was done among university students in the Middle East to calculate IGD prevalence among medical students, it ranged from 9.3% to 10.9%[8]. Two other studies on IGD were carried out in the Al-Qassim Region of Saudi Arabia, One used the video game addiction scale with students at international secondary schools in Buraydah, where 15.8% individuals were affected[9].

The 7-item Gaming Addiction Scale was used in the second study, which examined stress and gaming behavior in teenagers from the Al-Qassim region. According to the study5% of the teenagers in the school were gaming addicts[10]. Another study of 228 medical students in Riyadh, Saudi Arabia, showed an 8.8% prevalence of IGD[11] . Despite these studies, Saudi Arabian publications on this subject are limited, and thus the purpose of our study was to investigate the prevalence rate of IGD in medical students at Umm Al-Qura University (UQU), Saudi Arabia, as well as to investigate socio-demographic characteristics associated with IGD prevalence.

Methodology

An analytical cross-sectional study was conducted at Umm Al-Qura University College of Medicine between August 2022 and December 2022, utilizing an English-language online self-administered survey. Undergraduate medical students, including both male and female, across all years, were included in the target group. Students in the preparatory year and interns were not included. The sample size was determined using the Epi Info software version 2.1, keeping the confidence interval (CI) level at 95% with a 5% margin of error. According to the population size of 1,300 students, the study needed at least 297 participants. However, in case of data loss, the estimated sample size was 350 individuals. The questionnaire was distributed through a web form created through Google Forms and shared across various social media channels.

Material

An informed consent appeared on the cover page of the questionnaire, which was split into two sections. The first section asked about the participant's socio-demographic data including (age, GPA, gender, and academic year). The second part included the IGD 9-item Short Scale, consisting of nine yes or no questions. Every "yes" response receives one point on the scale, where a score of two to four suggests a risky gamer and a score of five or more suggests a gamer with IGD. The original survey was developed to assess IGD based on the DSM-5's recommended criteria.

Ethical considerations

The Biomedical Research Ethics Committee at Umm Al-Qura University's College of Medicine reviewed and approved this study with an ethical approval number (HAPO-02-K-012-2022-09-1213). Before completing the questionnaire, all participants provided their informed consent. No names or phone numbers were requested to ensure the participants' data confidentiality.

Statistical analysis

The study's data was first entered into a Microsoft Excel spreadsheet and later analyzed using IBM SPSS Statistics for Mac, version 26. Descriptive statistics, such as frequencies and percentages, were utilized to describe numerical and categorical variables. To assess the significance relationship among different IGD groups and gender, a chi-squared test was selected. Additionally, a one-way Anova was conducted to examine the association between the IGD groups, grade point average (GPA), and age. A statistical significance level of less than 0.05 was used to consider a significant data.

Results

A total number of 351 medical students at Umm Al-Qura University were included in the study. The mean age was 21.26 ± 1.57. More than half of the respondents were male (58.1%). Students of different academic years were included: 18.5% were second-year students, 20.8% third-year students, 19.9% fourth-year students, 22.5% fifth-year students, and 18.2% sixth-year students. Most respondents had a GPA of between 3.00 and 3.99 (87.7%). Additional demographic data are demonstrated in Table 1.

Table 1. Socio-demographic characteristics of study participants

Characteristic		Frequency	Percentage
Gender	Male	204	58.1%
	Female	147	41.9%
Academic Year	2nd year	65	18.5%
	3rd year	73	20.8%
	4th year	70	19.9%
	5th year	79	22.5%
	6th year	64	18.2%
GPA	<1.99	2	0.6%
	2.00 – 2.99	12	3.4%
	3.00-3.99	308	87.7%
	4.00	29	8.3%

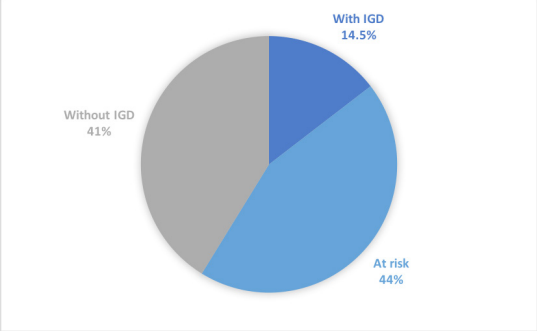


Figure 1. IGD status among the included participants

As shown in Figure 1, 14.5% of our participants scored 5 or more on the IGD scale 9, which is suggestive of their having IGD. Furthermore, 44% had a score of two to four, meaning they are at risk of developing IGD, while 41% had a score of less than 2, suggesting they are free of IGD. The IGD scale has nine components that assess different features of the disorder; detailed data on the participants' answers to the IGD scale 9 are included in Table 2.

As shown in Table 2, IGD was almost four times more common in the male participants, while the risk of developing IGD was twice as high among the males. Therefore, IGD and gender have a significant association (P < .001). The mean age of individuals with IGD was (21.37, SD = ± 1.612); the mean age of those at risk of developing IGD was (21.21, SD = ± 1.610); and the mean age of those without risk was (21.26, SD = ± 1.510). With (P_{Value} = 0.815), Age and IGD were not significantly associated with each other. The mean GPA of students with IGD was (3.08, SD± 0.337); the mean GPA of those at risk of developing IGD was (3.01, SD = ± 0.350); and the mean GPA of individuals without risk was (3.05, SD = ± 0.448). With (P Value = 0.443), GPA and IGD were not significantly associated with each other.

Table 2. IGD status in association with demographic characteristics of the participants

Demographic characteristics	IGD status			P-value
	IGD patients	At risk of IGD	Without IGD	
Gender				
Male	40, 19.6%	102, 50.0%	62, 30.4%	0.001*
Female	11, 7.5%	54, 36.7%	82, 55.8%	
Academic year				
2nd year	10, 19,6%	29, 18.6%	26, 18.1%	
3rd year	9, 17.6%	35, 22.4%	29, 20.1%	0.887
4th year	8, 15.7%	32, 20.5%	30, 20.8%	
5th year	11, 21,6%	34, 21.8%	34, 23.6%	
6th year	13, 25.5%	26, 16.7%	25, 17.4%	

* Crosstabs was used. The difference is considered significant at a p-value ≤ 0.05.

Table 3. Breakdown of participants' answers to the IGD scale 9

Variable	IGD (n=51)	At risk (n=156)	Without IGD (n=144)
	(n, %)	(n, %)	(n, %)
1- Assessment of preoccupation Have you spent a lot of time thinking about games or planned gaming?	47, 92.2%	96, 61.5%	5, 3.5%
2- Assessment of withdrawal Did you get annoyed, uneasy or upset when you couldn't play?	40, 78.4%	58, 37.2 %	1, 0.7%

Variable	IGD (n=51)	At risk (n=156)	Without IGD (n=144)
	(n, %)	(n, %)	(n, %)
3- Assessment of tolerance Have you felt the need to play more and more?	49, 96.1%	80, 51.3%	2, 1.4%
4- Assessment of loss of control Have you tried to cut down on gaming without succeeding?	31, 60.8%	20, 12.8%	2, 1.4%
5- Assessment of giving up other activities Have you lost interest in previous hobbies and leisure activities because of gaming?	33, 64.7%	35, 22.4%	1, 0.7%
6- Assessment of continuation Did you continue to play even though it created problems for you?	37, 72.5%	35, 22.4%	1, 0.7%
7- Assessment of deception Have you lied to family members, therapists or others about how much you have played?	31, 60.8%	30, 19.2%	1, 0.7%
8- Assessment of escape Did you play to reduce negative feelings?	47, 92.2%	109, 69.9%	44, 30.6%
9- Assessment of negative consequences Have you risked or ruined an important relationship, job, education or career opportunity because of gaming?	26, 51.0%	18, 11.5%	0, 0.00%

Discussion

Little is known about IGD prevalence among undergraduate medical students. Thus, our aim of this investigation was to measure IGD prevalence among undergraduate medical students at Umm Al-Qura University. Our findings showed that IGD prevalence among our sample, based on the IGD 9-item Short Scale, was 14.5%. Our study showed a higher prevalence compared with a previously published study conducted at King Saud University (KSU), which revealed that 8.8% of undergraduate medical students had IGD[11]. Additionally, research done among Saudi adolescents reported a lower prevalence of 5%, baes on the 7-item Gaming Addiction Scale (GAS)[9]. Other studies done among Egyptian university students showed that 10.9% of medical students had IGD, using the same study tool that was used in our study, and a prevalence of 9.2% among high school students from Lebanon, applying the IGD-20 scale[8,12]. In addition, a study conducted in India involving undergraduate medical and dental students, using the same study tool that was used in our study, revealed a 9% IGD prevalence[13]. Similar to our result, a study conducted with Korean adults revealed that the IGD prevalence was 13.8%, by using the same study tool that was used in our study, and 14.6% among British adults,

using the Problematic Video Game Playing Scale[14,15]. The variation in prevalence across the different studies may be justified by the various IGD assessment scales, different universities, and population characteristics. Medical school can be a highly stressful environment for students for a variety of reasons, which include extensive curricula, multiple academic requirements, and frequent challenging exams on an array of subjects[16]. It has been suggested that psychological distress, such as depression and anxiety, raises the risk of Internet-related addictions, including IGD[15,17].

Age and IGD were not expected to be related in our study, because our sample included young individuals, but studies conducted among general population have discovered that IGD is significantly more likely to occur in younger age groups than in other age groups. The key explanation for this difference is that young people are still developing neurologically and psychologically, with less ability to control their moods and cognition processes, and thus they are more prone to acquire addiction habits[7,12,18].

Unexpectedly, regarding academic achievement, IGD and GPA did not statistically significantly correlate. The group of IGD students' average GPA was 3.08, and it was 3.05 for students without risk, a similar result as the KSU study [11]. However, the Egyptian study with university students found that 3.3% of those with IGD achieved excellent marks, compared to 8.3% of people who don't have IGD [8].

Finally, in this current study, a highly significant relationship was found between IGD and the participants' gender, with 19.6% of males developing IGD compared to 7.5% of females. Similarly, the study at KSU reported that IGD prevalence was 10.1% in males and 6.3% in females[11]. The Egyptian study also demonstrated a significant correlation between gender and IGD, with a higher prevalence among males[8]. Additionally, the Lebanese and Indian studies reported that males had a higher prevalence rate of IGD than females[12,13]. The higher prevalence rate of IGD among males could be associated with physiological mechanisms, as many neuroimaging studies have demonstrated that compared to women, men tend to experience increased cravings after playing online games[19]. One possible explanation for why fewer females are affected is that they may be less willing to participate in the predominantly male gaming community. A second reason, according to several studies, is that women may encounter online sexual harassment, which may have a negative impact on their motivation to play online games[20]. The limitations of this current study's including the study design,

which is cross-sectional and limited to undergraduate medical students at Umm Al-Qura University. Another limitation is the small sample size. We recommend conducting studies with larger sample sizes, on different populations, and involving students from other specialties.

Conclusion

This study's findings show that IGD prevalence among undergraduate medical students at Umm Al-Qura University is high, which could be related to a highly stressful environment. IGD is significantly associated with gender and is four times higher in men than women. However, no significant association was found between IGD and GPA or age. There is a need for more research on the topic of medical students' psychological distress with IGD.

Acknowledgement

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Conflict of interest

The authors declare that there are no conflicts of interests.

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Ethical approval

The study was approved by the Medical Ethics Committee of Umm Al-Qura University (ethical approval code: (HAPO-02-K-012-2022-09-1213).

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