

Prevalence of Internet Gaming Disorder (IGD) in University Students and its Relationship with Depression

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Abstract

Introduction: Internet gaming disorder (IGD) is the emerging disorder in adolescents. The most common motivators behind IGD is coping with stressors, escapism, control over one's life, excitement and challenges.

Aims: The current study was done with the aims: 1) To find the prevalence of IGD in university students 2) To find the prevalence of depression among university students 3) To find the association of IGD with depression among university students.

Settings and Design: A descriptive research design was used to collect data from a private university. Setting of the study was food court of the selected university.

Methods and Material: A total of 91 college students were recruited from a selected university. Purposive sampling method was used to collect the data. Internet Gaming Disorder addiction was checked with the help of DSM-5 criteria. Depression was checked with the help of PHQ-9 questionnaire.

Statistical Analysis Used: Chi-square was used to check the association between IGD and depression.

Results: Twenty-one (23%) respondents were found to have IGD. Out of 21 respondents who had IGD, 9 were having mild depression, 4 were having moderate and 3 were having severe depression. Out of 70 respondents who did not suffer from IGD, 28 showed no signs of depression, 36 had mild depression and only 6 reported moderate depression. None of them had severe depression. The results demonstrated that internet gaming disorder was significantly associated with depression ($p < 0.005$).

Conclusions: Majority of the respondents having IGD had also reported co-morbid depression on PHQ-9 questionnaire. Thus depression needs to be identified and treated in clients suffering with Internet gaming disorder.

Key words: Internet Gaming Disorder (IGD), Depression

Introduction

The digital world was still in past, is changing dramatically now and will be changing rapidly then. In the past two decades, owing to exponential growth in technology and digital usage, internet gaming has become one of the most popular online activities. Despite its entertainment purpose, excessive engagement in online gaming can cause devastating effect on an individual's health.^[1] In 2013 *Diagnostic and Statistical Manual of*

Mental Disorders, 5th edition (DSM-5) has labeled it as separate entity 'Internet Gaming Disorder' (IGD) with the definition 'persistent and recurrent use of internet to engage in games, often with other players, which leads to clinically significant distress or impairment.'^[2] Moreover, 'Gaming Disorder' has been included as a mental health disorder in International classification of diseases 11th revision (ICD-11) by World Health Organization. ^[3] Internet gaming disorder is a growing

public health threat that usually affects the adolescents and young adults across the globe and causing a significant decline in an individual's well-being not only to physical, psychological but also to social and occupational functioning. [4]

Prevalence of Internet Gaming Disorder is increasing worldwide and has been estimated to be between 0.7-27.5 percent. It varies across countries and regions due to difference in various sample characteristics and screening tools being used. As per previous researches, Internet Gaming Disorder is found to be more prevalent in Asian countries than western ones. [5, 6] Further, one of the market surveys quotes India as one of the top five countries for downloading games globally. Also, India being a country with largest youth population and fastest growing smartphone user base, new insights regarding India are being uncovered continuously that it would exceed other countries and become biggest gaming market in future. This would result into more vulnerability to dangers associated with online gaming especially to adolescents in overall population of India [7, 8, 9, 10] The available literature suggests that Internet Gaming Disorder is more prevalent in males and in adolescents brought up by divorced parents and reared up in broken homes. It is reported that increasing age, low self-esteem and poor daily life satisfaction usually cause more severe online gaming addiction particularly among males. [11, 12, 13, 14]

The predictive factors associated with problematic online gaming are not well established. However, researchers state that Individual factors (gender and age), social interactive factors (family atmosphere, social anxiety and self-esteem), cognitive factors and psychopathological conditions deeply influence the development of Internet Gaming Disorder. Depression, ADHD, anxiety and impulsivity are considered as the strongest risk factors. [15, 16] Also, an individual with higher psychopathology is more prone to online gaming addictions in an attempt to escape through emotional difficulties. [17, 18, 19] Furthermore, Addicted gamers often exhibit more irritability, aggression, low mood, and confusion between real and virtual world.

Problematic gaming is also associated with low academic performance and substance abuse. [20]

In India, there is a scarcity of studies regarding prevalence and associated factors with digital gaming despite of the fact that internet usage is rising day by day in the country. Therefore, exploring the field of research regarding online gaming disorders will provide necessary hub of knowledge in an order to formulate health policies to prevent and treat Internet Gaming Disorder. With this background, present study was conducted to know Internet Gaming Disorder prevalence among university students and its association with depression.

Aim of the Study

- 1) To find the prevalence of Internet Gaming Disorder in college students
- 2) To find the prevalence of depression
- 3) To find the association of Internet Gaming Disorder with depression, if any

Materials and Methods

Setting & Participants

A total of 91 college students were recruited from a selected university. The setting of the study was Food court of the selected university. Purposive sampling method was used to collect the data. For the present study, those students were enrolled who gave the consent for the study and who met the inclusion criteria which was: a) The volunteer college students studying in undergraduate program of any stream b) Students using mobile phones or/and laptops and also having access to internet since last one year.

The design of the study was descriptive research design.

Tools

1. Socio-demographic Performa: A socio-demographic performa was used.
2. PHQ-9: PHQ-9^[21] is a subset of Patient health

questionnaire. PHQ is a self-report version of Primary Care Evaluation of Mental Disorders (PRIME-MD). The PHQ-9, a tool specific to depression, simply scores each of the 9 DSM-IV criteria based on the mood module from the original PRIME-MD. PHQ-9 total score for the nine items ranges from 0 to 27. Scores of 5, 10, 15 and 20 represent cut points for mild, moderate, moderately severe and severe depression, respectively.

3. IGD Assessment tool: Internet gaming disorder was assessed by the researchers according to DSM-5

criteria by clinical interview.^[24] There were nine items related to gaming behavior. Participants were supposed to respond in Yes or No. For every “Yes”, score of 1 was given. Any participant having score 5 or more was categorized as having IGD. The data so generated was subjected to statistical analysis.

The assessment was made on the basis of above instruments and scales, supplemented with a clinical interview.

Results

Table 1: Socio-Demographic Characteristics of Participants

VARIABLE	N=91	%age
Gender		
- Male	30	33
- Female	61	67
Type of Family		
- Nuclear	69	76
- Joint	22	24
Type of residence		
- Urban	4	4
- Semi-urban	68	75
- Rural	19	21

The socio-demographic characteristics are shown in Table 1. Majority of the participants were females (67%), having a nuclear family (76%) and residing in semi-urban areas (75%).

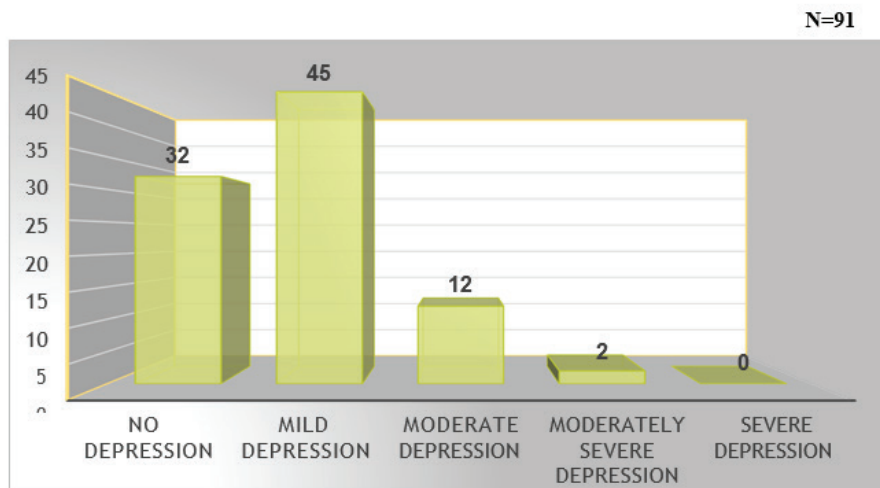


Fig. 1 Depression in College Students

Fig. 1 shows the results of PHQ-9 assessment in college students. Out of 91 participants, 45 students were found to have mild depression, 12 moderate and 2

were having moderately severe depression. None of the student had severe depression.

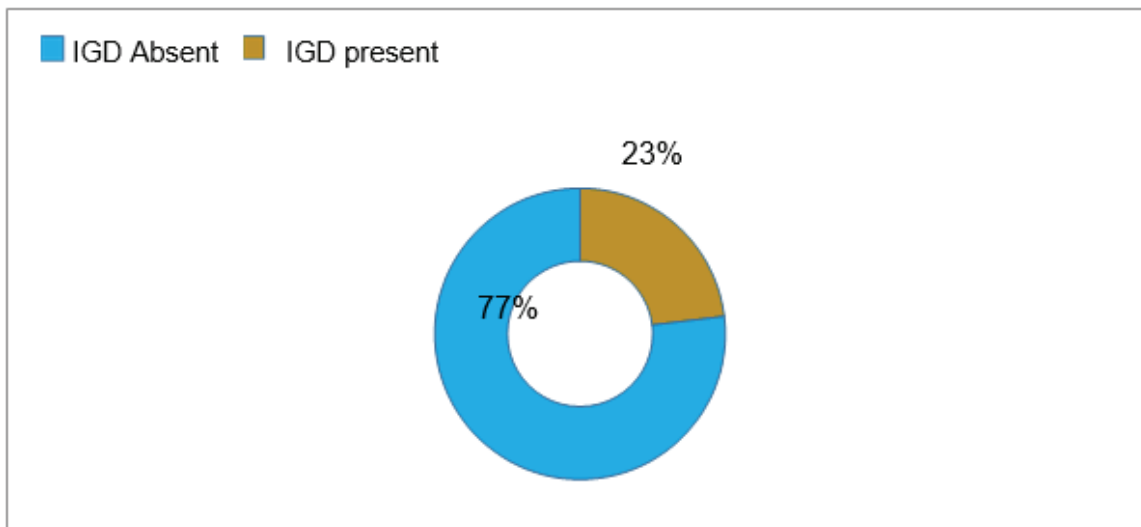


Fig. 2 Prevalence of Internet Gaming Disorder among College Students

Fig. 2 shows the prevalence of Internet gaming Disorder among college students. 21 (23%) students were having Internet gaming disorder out of 91 participants.

Table 2. Association between Internet gaming disorder and Depression among college students

N=91

Internet Gaming Disorder (n)	No Depression (n)	Mild Depression (n)	Moderate Depression (n)	Moderately severe Depression (n)	Total (N)	Chi Square
IGD Present	5	9	4	3	21	13.021* (p 0.005)
IGD Absent	28	36	6	0	70	
Total	33	45	10	3	91	

Table 2 depicts that out of 33 students who did not have depression, 28 students were also not having IGD. Similarly, students with mild depression also have less cases of IGD. Out of 10 students who had moderate depression, 4 were having co- morbid IGD. All the students who were having moderately severe depression

also had co-morbid IGD. Chi-square analysis found that there is a significant association between Depression and IGD.

Discussion

The current study, to the best of our knowledge,

is the first study to report prevalence of IGD and its association with depression among university students in India. This study found that overall prevalence of IGD was 23% in students of university. Similarly, a review literature conducted by Mihara and Higuchi found a prevalence of IGD ranging from 0.7 % to 27.5%.^[5] In contrast to developed countries where the prevalence of IGD is reported only between 0.3%-1% by Przybylski AK et al.^[25] It is hypothesized that unlike the western countries, students of Asian countries face more academic and societal competition. Thus, digital gaming provides an escape into a virtual world where they can relieve stress from such competitions.^[10, 26]

Individuals with internet addiction exhibit more psychopathology, as revealed by Yen J et al.^[27] For instance, Whang et al,^[28] found significant association between degree of depression, anxiety and problematic internet use. A systemic review on the association between disordered online gaming and mental health issues found the correlation of 92% between anxiety and IGD, 89% between depression and IGD, and 85% between ADHD and IGD.^[29] Hence , Depression is considered as a co-morbid psychiatric symptom of disordered digital gaming. Similarly, in current study, relationship between IGD and depression was also examined and it was found to be significantly associated (p value ≤ 0.005) as majority of the respondents had reported co-morbid depression on PHQ-9 questionnaire. These results are in line with the existing researches on relationship between pathologic internet gaming and psychiatric symptoms.^[30, 31, 32,33,34] The literature has consistently demonstrated that online game addicts report more depression, loneliness, anxiety and lower psychological well-being.^[28, 35]

Furthermore, in past , it was proposed by investigators that an individual with depression use Internet excessively as the means of self-medicating and Internet addiction itself can lead to depression symptoms because of social isolation resulting from spending much time in online gaming, which, in turn, causes undermined psychological health.^[36, 37] Achab et al^[38] compared the characteristics of addict vs non-

addict online gamers and found significantly higher rates of irritability, emotional changes , low mood since online gaming onset. In addition to this, online gaming disorders and depression may share common risk factors, like, genes, environmental, educational, deficit social support, stress coping skills, and each might serve to aggravate of severity of other.^[36,39] However, more researchers are needed to explicate the common mechanism underlying IGD and depression.^[40]

Conclusions

In conclusion, this research demonstrated the most recent prevalence of Internet gaming disorder and its association with depression in University students of India. It shows continuous increase in prevalence of digital gaming and has strong association between depression and IGD. Thus depression needs to be identified and treated in clients. Furthermore, the direction of relation between IGD and depression needs to be explored.

Limitation

- Sample size was small
- Randomization was not done

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Nil

Conflicts of Interest

There are no conflicts of interest.

Ethical Clearance: taken from institutional review board

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