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A Cross-Sectional Study to Assess the Gaming Disorder and Problematic Usage of Mobile Phones among College Students of Hubli-Dharwad

Anjana R Joshi[1], Dattatreya D Bant[2]

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Author's Affiliation:
[1]Post graduate; [2]Professor and Head, Department of Community Medicine, Karnataka Institute of Medical Sciences, Hubballi

Correspondence
Anjana R Joshi
joshianjana22@gmail.com

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ABSTRACT

Background: Gaming disorder has been included as a mental health disorder by WHO in ICD 11 revision. There is increased dependence on mobile phones, video games, and the internet among all age groups. Excessive use of mobile phones and gaming affects the physical, mental health and social life

Objectives: To assess the prevalence of gaming disorder and problematic usage of mobile phones, and to assess the common health problems faced after prolonged usage.

Materials and Methods: A cross-sectional study was conducted among 220 students of Hubli-Dharwad studying in various degree courses using a predesigned semi-structured questionnaire. The Ten-Item Internet Gaming Disorder Test (IGDT-10) scale and Problematic Usage of Mobile Phone (PUMP) scale were used in the study

Results: Out of 220 college students 52.3% were girls and 47.7% were boys. The mean game scoring was 2.11±2.18, and the mean problematic mobile usage score was 50.60±11.282, the prevalence of gaming disorder was 15%. The PUMP score was high among those who had gaming disorder. 74%of the participants complained one or the other health problems, most common being sleep disturbance.

Conclusion: The problematic mobile usage and gaming disorder is high among students. A proper supportive environment is needed in the college and also in their homes.

Keywords: Gaming disorder, problematic usage of mobile phones, college students, Excessive phone use

INTRODUCTION

Technology has been evolved in all the fields of life, now it has become an integral part of life. A mobile phone is considered as an important communication tool and became an integral part of the society, it is not only a communication device but it is also necessary -a social accessory [1]

In recent years, there has been an increased dependence on mobile phones among all age groups including kids to the elderly and resulting in harmful usage of mobile phones and gaming.

"**Problematic mobile phone use** is defined as any pattern of mobile phone use resulting in subjective distress or impairment in important areas of functioning."[2]

The gaming is common among all age groups; the normal gaming doesn't affect the health. Excessive gaming affects the physical as well as mental health.

In May 2013, **Internet gaming disorder** (IGD) was included in Section III of the DSM-5 as a condition warranting further study (American Psychiatric

Association, 2013). This marked the first occasion of Internet gaming being formally recognized as a mental health disorder, in psychiatric nomenclature[3].

The WHO included **Gaming Disorder** as a mental health condition in ICD 11th Revision this year (2018)[4]

According to the WHO definition, Gaming disorder[5] is defined 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."*

The behavior pattern must be of sufficient severity to result in significant impairment in personal, family, social, educational, occupational or other important areas of functioning and would normally have been evident for at least 12 months.

Excessive phone use and gaming also linked with many health problems both physical as well as mental health problems. excessive usage of phones also causing social problems such as negative effects on family and friends relationship, poor adjustment behavior, poor performance in academics.[6] It can be linked to visual abnormalities like eye strain, refractive errors headaches, obesity, and musculoskeletal pain such as pain in hands, wrists, back and neck, psychological problems such as anxiety, depression, obesity, sleeping disorders, and stress are on the rise.[6,7] Gaming disorder and problematic mobile use are becoming the major public health problem among youths. It is necessary to address these problems and proper actions need to be taken in this regard

The present study was conducted to assess the prevalence of Gaming Disorder and Problematic Usage of Mobile Phones and to assess the common health problems faced after prolonged usage of mobile phones among college students

METHODOLOGY

A cross sectional study was conducted among the students studying in various degree colleges of Hubli-Dharwad during July 2018. Convenient sample of 220 was taken as sample size.

After obtaining the list of degree colleges of Hubli-Dharwad City, the colleges were selected by lottery method, the class was selected randomly and all the students of the class were included in the study. The permission was taken from the respective college principal. Written consent was taken from the study participants. A predesigned semi-structured self-administered questionnaire was used for the study consisting of demographic characters, information about gaming, Ten item Internet Gaming Disorder Test (IGDT) scale for assessment of gaming disorder [8], Problematic Usage of Mobile Phone(PUMP) scale for assessment of problematic mobile usage[2], Health problems after prolonged usage

PUMP SCALE QUESTIONNAIRE[2]: The PUMP Scale is based on the criteria of substance use disorders assessing ten criteria such as tolerance, withdrawal, craving, social or interpersonal problems due to mobile phone usage, knowledge about physical hazard due to the usage of mobile phones, physical and psychological problems, using for longer time than intended, great deal of time spent, activities given up or reduced and failure fulfilling role obligations. The questionnaire consisted of about twenty question with two questions under each criterion. The responses were Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree with scores ranging from 5 to1. The higher score indicates the higher problematic usage.

Internet Gaming Disorder Test Scale[8]: The Ten-Item Internet Gaming Disorder Test (IGDT-10) is a short screening instrument developed to assess Internet gaming disorder (IGD) as proposed in the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5) which was developed by Király, O., Griffiths, M. D., & Demetrovics, Z

The 3-point Likert scale is used in the questionnaire, during scoring the IGDT-10 items were recoded into a "yes" (1) and "no" (0) format to resemble the dichotomous structure of IGD in DSM-5. DSM-5 considers the case clinically relevant if five or more criteria are met. The criteria assessed were Preoccupation, continuation, negative consequences, escape, tolerance, loss of control, giving up other activities, deception, and withdrawal symptom[9]

Data analysis: The data was entered in MS Excel and analyzed using SPSS 21. Suitable descriptive and inferential statistics were used for the study. P-value of <0.05 was considered statistically significant. Prevalence Odds Ratio was calculated using binary logistic regression.

RESULTS

Socio-demographic characters: The study included 47.7 % of the male students and 52.3% of the female students. The majority (63.6%) of the students stayed in Hostel whereas 36.4% of them stayed in

Table 1: Course and characteristics of gaming

Variable	Frequency (%)
Course	
BA	28 (0.127)
B.Com	41 (0.186)
BE	45 (0.205)
B.Sc	40 (0.182)
Medical	45 (0.205)
Diploma	21 (0.095)
Playing games	
Yes	177 (80.5)
No	43 (19.5)
Total	220 (100)
Platform for playing games	
Mobile phones	136 (76.8)
Laptop	23 (13)
Tab	11 (6.2)
Cyber shops	7 (4)
Reasons for playing games	
Avoid loneliness	65 (36.7)
Fun time with friends	59 (33.3)
Improves skills	53 (30)
Type of games	
Action/ adventurous	69 (38.9)
Entertaining	58 (32.8)
Educational	46 (26)
Health related	4 (2.3)
Duration of game play	
<1 hour	117 (66.1)
>1 hour	40 (22.6)
Throughout the day	20 (11.3)

Table 2: Comparison between the Gaming Disorders with PUMP & IGDT score

	Gaming disorder	N	Mean	Standard Deviation	P value
PUMP score	No	187	49.93	11.220	0.036
	Yes	33	54.39	11.040	

the house. The mean age of the study participants is 19.23± 1.76 years.

The main platform for gaming was Mobile phones, the main reason for playing was to avoid loneliness and the majority of them played adventurous or action games.

The mean IGDT score was 2.11±2.18. The mean problematic usage of mobile phone was 50.6±11.28. The IGDT score and PUMP score were positively correlated with the correlation coefficient of 0.212 and p-value 0.002(Table 2)

As per the IGDT scale DSM criteria for the gaming disorder, the prevalence was 15% with a higher prevalence among males (19%). Students staying in the hostel and owning personal mobile phones have higher odds (Prevalence OR) of getting affected by Gaming disorder. (Table 3) The course which they were studying and gender had no effect on the gaming disorder (Table 3)

The excessive mobile phone usage and gaming resulted in various health problems. Majority of the students reported sleep disturbance and headache as the most common health problem (Table 4)

DISCUSSION

In the present study, the majority of the study participants had mobile phones, irrespective of gender and course they are studying.

The majority of the study participants (80.5%) had a habit of playing games in their mobiles which means there is a rise in the trend of mobile phone usage and also playing games on their phones.

The college students are fond of newer technologies, easily get addicted to the games and these gadgets. The majority of the study participants like to play adventurous and action games.

The majority of the study participants played games to avoid loneliness, which shows that family support and friends are needed for adolescents and young individuals

Even the problematic usage of mobile phones score was on the higher side which is an alarming sign as it results in both physical and mental health problems. The PUMP score was high among those who had gaming disorder, and even the score was positively correlated which indicates that those who tend to play the games end up in problematic mobile use.

Staying away from home, owning a personal mobile were the major key factors which make the students to get addicted to mobiles and gaming. Gender and the course which they were studying had no affect on gaming, which means the prevalence of gaming disorder did not differ much among girls and boys and also the course. Most of the study participants experienced one or the other health problem after prolonged mobile phone use sleep disturbance being the commonest followed by Headache.

In the present study, the mean Problematic usage of mobile phone score was 50.60±11.282 whereas in a study by Waheed Iqbal, Amjad Mahmood Khan[12] in Pakistan among medical students during 2017 the mean score was 56.33±15.92 and in a study by Balaji Arumugam[13] in Chennai was 59±13.

In the present study headache and sleep disturbance was the most common health problem after prolonged usage, similar to this headache was found to be the commonest symptom (51.47%) followed by irritability/anger (50.79%) in a study Jayanti P Acharya[2] in Hyderabad among college students.

Table 3: Association between the demographic characters and the gaming disorder

	Gaming disorder Absent	Gaming disorder present	P value	Prevalence OR (95%CI)
Gender				
Female	102 (88.70)	13 (11.30)	0.108	Reference
Male	85 (80.95)	20 (19.05)		0.542(0.255-1.153)
Owning a mobile phone				
No personal mobile phone	13 (61.9)	8 (38.1)	0.00183*	Reference
Personal mobile	174 (87.4)	25 (12.6)		4.283(1.615-11.3)*
Residence				
Home	74 (92.5)	6 (7.5)	0.0185*	Reference
Hostel	113 (80.7)	27 (19.3)		2.947(1.161-7.483)*
Course				
MBBS	38 (84.4)	7 (15.6)	0.248	Reference
BA	22 (78.6)	6 (21.4)		1.481(0.441-4.966)
B.com	38 (92.7)	3 (7.3)		0.429 (0.103-1.782)
BE	38 (84.4)	7 (15.6)		1.000 (0.320-3.127)
B. Sc	36 (90)	4 (10)		0.603 (0.163-2.236)
Diploma	15 (71.4)	6 (28.6)		2.171 (0.626-7.530)

*significant (p value<0.05)

Table 4: Health problems reported after prolonged usage

Health Problems in the previous month	Cases (%)
None	57 (25.9)
Sleep disturbances	52 (23.6)
Headache	46 (20.9)
Lack of concentration	23 (10.5)
Visual impairment	27 (12.3)
Altered feeding habits	18 (8.2)
Depression/stress	7 (3.2)
Physical inactivity	26 (11.8)

CONCLUSION

The present study concluded that the Gaming disorder and problematic usage of mobile phones are emerging as a public health problem among college students irrespective of gender. Staying away from the families, lack of family and friends support are the main reasons for the increase in the mobile usage. The excessive usage results in various health problems. The more studies are needed to identify the problem and solutions for the same.

Recommendations: Creating a good family environment with adequate psychological support and organizing the extracurricular and sports events in the colleges, and good friendly environment in the hostels, weekly outings with the family and friends make the young generation helps them to avoid their loneliness and also helps in better social behavior rather than getting addicted to the mobile phones and gaming.

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