Original Article

Inter-relationship between Gaming Addiction, Emotional Intelligence, and Psychological Well-being of PlayerUnknown's Battlegrounds and Non-PlayerUnknown's Battlegrounds Online Mobile Game Players: A Comparative Cross-sectional Study

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Abstract

Introduction: Recently, increasing trend in popularity of online gaming has been seen worldwide. Online games such as PlayerUnknown's Battlegrounds (PUBG) and first-person shooter (FPS) games top the popularity chart among young population. Problematic Internet gaming is also being increasingly reported. The aim of this study was to evaluate the inter-relationship between gaming addiction, emotional intelligence (EI), and psychological well-being in players of PUBG and non-PUBG online shooter mobile games. **Materials and Methods:** Sixty-four male students (18–22 years) who had played either PUBG or non-PUBG FPS games for ≥3 h/week during the previous 6 months were included. Addictive potential of PUBG (played by $n = 33$) was compared with that of non-PUBG games (played by $n = 31$) using Gaming Addiction Scale (GAS). Psychological health and EI were assessed using Depression, Anxiety, and Stress Scale 21 (DASS-21) and Trait Emotional Intelligence Questionnaire-Short Form, respectively. **Results:** The prevalence of gaming addiction and psychological morbidity was significantly higher in PUBG compared to non-PUBG players. EI was comparable in both the groups. Correlational analysis in PUBG players showed a positive association between GAS and anxiety subscale and a negative association between EI and the depression and anxiety subscales. In non-PUBG players, a positive association between GAS and depression subscale and a negative association between EI and the depression, stress, and total DASS-21 scores was observed. **Conclusion:** These results suggest that addictive online gaming behavior has detrimental effect on the psychological well-being of players. Furthermore, EI has a potential protective impact against psychological morbidity in these subjects. Future studies may be planned to explore the influence of interventional EI training on psychological health and addictive gaming behavior of online gamers.

Keywords: Depression, Anxiety, and Stress Scale 21, first-person shooter online games, gaming addiction, PlayerUnknown's Battlegrounds, trait emotional intelligence

Introduction

An online game is one that is played partially or primarily through the Internet or any other computer network. There are many genres, such as first-person shooters (FPS), sports simulation, puzzles, real-time strategy, multiplayer online battle arena, multiplayer role-playing games, and battle royale games.

Online gaming has become one of the most popular leisure activities all across the globe.[1] The COVID-19 pandemic led to a further increase as these games are well-suited options for entertainment during a lockdown. However, along with increases in Internet game playing, reports of problematic gaming are also being increasingly reported.[2,3] Prior research conducted in various countries has shown the prevalence of gaming addiction ranging from 0.7% to

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27.5%.[4] Internet gaming disorder has been included in Section III of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) in 2013 as a "condition for further study." The World Health Organization included "gaming disorder" alongside "gambling disorder" under "Disorders Due to Addictive Behaviors" in the 11th revision of the International Classification of Diseases-11.[5]

The key components of psychological health are self-esteem, self-actualization, affect, and mood.[6] Prior studies have demonstrated increase in sleep disturbances, aggressive behavior, withdrawal symptoms, depression, anxiety, and deterioration of interpersonal relationships among problematic video gamers.[7-9] Social anxiety and lower life satisfaction have also been associated with more hours spent on gaming.[10]

Recently, researchers have postulated that emotional intelligence (EI) can influence the gaming behavior of an individual.[11,12] It is defined as one's inherent capability of recognizing, understanding, expressing, and regulating own emotions, as well as of others, helps in adapting to situations and achieving goals.[13] Lower EI scores were found to be associated with excessive online gaming, especially in younger groups. Frequent gamers with better EI did not exhibit such gaming-related disorder.[14] Moreover, higher EI has been associated with lower stress, better coping mechanisms,[15] and psychological well-being of an individual.[15,16]

Despite these emerging links between video gaming, EI, and psychological health, to the best of our knowledge, researchers have still not explored their interplay in a single study. There is a dearth of research on the relationship between different types of online mobile games and the psychological and emotional status of an individual. Currently, one of the most popular online games is PlayerUnknown's Battlegrounds (PUBG). This multiplayer game belongs to battle royale genre where players fight to remain the last alive. By December 2019, PUBG Mobile had been downloaded over 600 million times.[17] It has also become a very popular "eSport" wherein PUBG tournaments are held, often with cash rewards, and streamed over the Internet. Such streams have a huge viewership and are an escape from everyday life.[18] In India also, till the time it was banned by the government (in September 2020), PUBG was the most popular online game played by the youth. Another genre that is popular among youth across the world, is FPS games, such as Call of Duty and Counter Strike. Players play from the perspective of a protagonist engaging in fast-paced combat while navigating a three-dimensional environment.

PUBG is a recent game, and there are very few studies available regarding the prevalence of PUBG addiction and its effects. Reports about increased aggression and potential negative impact of PUBG on psychological well-being of school and college students have surfaced.[19] However, this cannot be accepted as a universal finding as some studies have shown positive aspects of online gaming, such as improved social skills.[20] Hence, more research for identification of the behavioral trends of online mobile gamers is required to aid in designing effective interventions for prevention of gaming addiction.

Therefore, the aim of the present study was to estimate and compare the prevalence of gaming addiction in players of PUBG and non-PUBG online shooter mobile games and to evaluate the inter-relationship between gaming addiction, emotional intelligence, and psychological well-being in the two study groups.

Materials and Methods

Study design

This was a cross-sectional study.

Study setting

This study was conducted in the Department of Physiology, Maulana Azad Medical College, New Delhi.

Sample size

The sample size was 64.

The study was conducted between May and September 2019 after approval from the Institutional Ethics Committee (F.17/IEC/MAMC/19/No. 121).

Subjects

Healthy male students pursuing undergraduate medical course in our institute were approached for inclusion. Participation was voluntary, and informed consent was obtained. A study form was administered as an intradepartmental level screening exercise, and 64 male students (out of 103 respondents) of our institute were recruited as subjects. Each subject was kept anonymous by keeping the consent forms separate, and strict confidentiality was maintained. The subjects were categorized into two groups: PUBG (n = 33) and non-PUBG (n = 31) player groups.

- "PUBG players" were subjects who had played PUBG Mobile game for ≥3 h per week in the previous 6 months and not played non-PUBG FPS games in that time frame
- "Non-PUBG players" were subjects who had played non-PUBG FPS-type mobile games for ≥3 h per week in the previous 6 months and not played PUBG in that time frame.

Those students who did not play the aforementioned video games on a mobile device or had played other video games such as puzzle, real-time strategy, arcade, racing, and sports simulation games for >1 h per week were excluded. Students with a diagnosed neurological, sleep-related, or psychiatric disorder or taking any prescribed medication were also excluded.

Study form (gaming)

The first question was whether the participant played online video games on mobile devices or not. If they responded "yes," they were asked which of the following genres they had played during the previous 6 months: PUBG, non-PUBG FPS games, or others (multiplayer online battle arena, real-time strategy,

massively multiplayer online role-playing, racing, or sports simulation games, etc.). The next question was related to the time (in hours) spent on each category of online games. The responses to these questions were used to separate the subjects into the two study groups.

Data collection

The subjects were asked to fill four pretested, self-report, paper-based questionnaires (in English): Study form, Game Addiction Scale (GAS), Depression, Anxiety, and Stress Scale 21 (DASS-21), and Trait Emotional Intelligence Questionnaire-Short Form (TEIQue-sf). The forms were administered and collected on the same day.

Measures

Study form

It included questions pertaining to age, sociodemographic factors, and the video gaming behavior, i.e. the age at which they started playing video games and the time (in hours) for which they played on a weekday and on a weekend.

Game Addiction Scale

This scale was developed and published by Lemmens *et al*.[21] Two versions are available, a 7-item scale and a 21-item scale (with 3 questions in each of the 7 domains). These are based on the following seven criteria suggested in DSM: (i) salience (if the person plays games excessively and becomes preoccupied with them and has cravings when not playing), (ii) tolerance (if the person gradually increases the time he spends on games), (iii) mood modification (if playing games affects the mood of the person, for example, a relaxing effect), (iv) withdrawal (if abstinence causes symptoms like irritability), (v) relapse (if there is tendency of falling back to the same patterns of game play after a period of control), (vi) conflict (arguments, lies, and deception due to excessive gaming), and (vii) problems (if excessive playing jeopardizes work, job, or relationships). GAS has been used and found suitable for individuals across a wide age span (14–90 years).[22] Both the versions gave similar and reliable results and are available freely. Hence, we used the 7-item scale which comprises seven questions pertaining to gaming behavior during the previous 6 months. Each question is scored on a Likert scale ranging from 1 – never, 2 – rarely, 3 – sometimes, 4 – often, to 5 – very often. A criterion is considered met if the response is "sometimes" or higher. According to the polythetic format, a person is an addict if four or more out of the seven criteria are met, whereas, according to the monothetic format, all the criteria must be met. We have provided the results using both the formats. The total score of GAS is obtained by adding up all the responses. The range of score is 7–35, with higher scores indicative of addictive gaming-related behavior[21]

Depression Anxiety and Stress Scale 21

DASS-21 can identify and estimate the severity of depression, anxiety, and stress. It has 21 questions with 7 items for each of the 3 subscales; for example, "I could not seem to experience any positive feeling at all" (depression), "I was aware of dryness of my mouth" (anxiety), and "I found it hard to wind down" (stress). The questions are responded on a four-point Likert scale ranging from 0 (did not apply to me at all over the last week) to 3 (applied to me very much or most of the time over the past week). Since DASS-21 is a short version of the 42-item DASS, the responses for each subscale were summed then doubled. The scores of the three subscales were added to get the total score as well. The severity of the three subscales was graded as per standard guidelines.[23]

Trait Emotional Intelligence Questionnaire-Short Form

TEIQue-sf is a freely available self-report measure of trait EI. This short version is based on the 153-item long form. The items correspond to one of the four components (well-being, self-control, sociability, and emotionality) or contribute to the global trait EI score. Each item is scored on a Likert scale ranging from 1 (completely disagree) to 7 (completely agree). Half of the responses on the questionnaire were scored directly (e.g. "I can deal effectively with people") and half were reverse scored (e.g. "I generally do not find life enjoyable"), and the global trait EI score was calculated by adding them up. The range of scores is from 30 to 210.[24]

Statistical analysis

SPSS version 22.0 for Windows (SPSS Inc., Chicago, Illinois, USA) was used for data analysis. Lilliefors-corrected Kolmogorov–Smirnov test was used to check Gaussian fit of data. Pearson's correlation was used for test–retest reliability analysis of gaming questionnaire. Cronbach's alpha internal consistency coefficients for all the measures were calculated. The gaming characteristics of the subjects have been expressed as median (interquartile range). The scores of GAS, DASS-21, and TEIQue-sf have been described in the form of mean and standard deviation (SD). The comparison between the two groups was done using the unpaired Student's *t*-test assuming equal variances (based on Levene's test). The inter-relationship between the scores was studied using Pearson's correlation. $P < 0.05$ was considered statistically significant for all analyses.

Results

Test–retest reliability of gaming questionnaire was acceptable ($r = 0.78$). The mean age of the subjects was similar in the PUBG (18.7 ± 0.8 years) and non-PUBG (18.6 ± 0.8 years) groups. Sociodemographic profile of the subjects was also comparable in both the groups [Table 1].

The gaming characteristics of subjects in the two groups are given in Table 2. There was a statistically significant (P=0.016) difference between the mean age at which the subjects in the two study groups started video gaming. There was no significant difference ($P > 0.05$) in the median number of hours spent by the subjects on gaming per week or during weekdays or weekends.

The Cronbach's α for the three questionnaires GAS, DASS-21, and TEIQue-sf was 0.79, 0.88, and 0.85, respectively. Significantly higher mean scores of GAS, DASS-21 (total), and anxiety subscales ($P < 0.05$) as well as of depression

subscale ($P < 0.01$) were self-reported by the PUBG group subjects as compared to the non-PUBG group. The difference between global TEIQue-sf scores of the two groups was not statistically significant [Table 3].

Using the polythetic format, 13 (39.4%) subjects were found to be addicted in PUBG and 5 (16.1%) subjects in the non-PUBG group. Using the monothetic format, 2 (6.1%) subjects were addicted in only the PUBG group [Figure 1].

The prevalence of symptoms of depression, anxiety, and stress among the PUBG players was 48.5%, 81.8%, and 42.4%, respectively. The severity of symptoms of anxiety was found to be the highest among these players, with approximately half (48.5%) of the subjects perceiving severe or extremely severe anxiety. In the depression and stress subscales, symptoms of mild-to-moderate severity were predominantly reported by 42.4% and 33.3% of the subjects, respectively.

The prevalence of symptoms of depression, anxiety, and stress among the non-PUBG players was 22.6%, 58.1%, and 22.6%, respectively. The severity of symptoms of anxiety was found to be the highest among these players, with approximately one-fourth (22.5%) of the subjects perceiving severe or very severe anxiety. In the depression and stress subscales, symptoms of mild-to-moderate severity were predominantly reported by 22.6% and 12.9% of the subjects, respectively.

Figure 2 shows a comparison of the results of the depression, anxiety, and stress scales in the two groups.

Anxiety had a significant positive correlation with GAS, depression ($P < 0.05$ in both), and stress ($P < 0.001$) and a significant negative correlation with TEIQue-sf ($P < 0.05$) in PUBG players. TEIQue-sf also had a significant negative correlation with depression scores ($P < 0.01$) in these subjects. Depression and stress subscale scores were also significantly correlated ($P < 0.01$) in this study group [Table 4a].

Depression had a significant positive correlation with GAS and stress ($P < 0.05$ in both) and a significant negative correlation with TEIQue-sf ($P < 0.001$) in non-PUBG players. TEIQue-sf

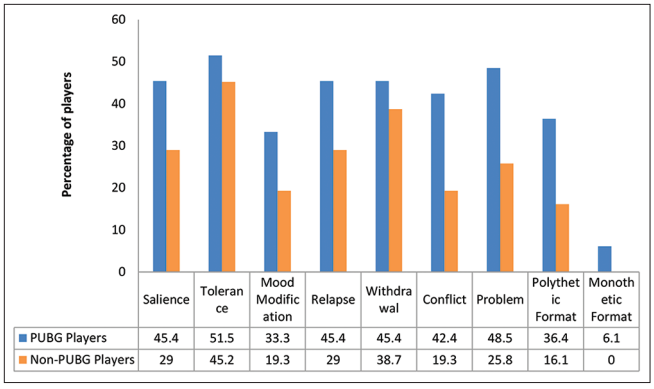

Figure 1: Percentage of Players Meeting Game Addiction Scale Criteria in PlayerUnknown's Battlegrounds and non-PlayerUnknown's Battlegrounds study groups

Table 1: Sociodemographic characteristics of the subjects in the PlayerUnknown's Battlegrounds and non-PlayerUnknown's Battlegrounds groups

Variable	PUBG ($n=33$),	Non-PUBG ($n=31$)
Belongs to		
Delhi/NCR	17	16
Other states	16	15
Stays		
In college hostel/PG	22	17
At home	11	14
Family type		
Nuclear family	26	24
Joint family	7	7
Number of siblings		
None	3	2
One	21	14
Two or more	9	5
Education of parents		
Higher secondary or less	3	4
Graduate	9	15
Professional	21	12
Monthly family income (₹)		
<100,000	5	5
100,000-300,000	16	14
>300,000	12	12

Values are frequency of subjects in each subcategory of a particular variable

Table 2: Gaming characteristics of the subjects in the PlayerUnknown's Battlegrounds and non-PlayerUnknown's Battlegrounds groups

Gaming behavior	PUBG ($n=33$)	Non-PUBG ($n=31$)
Age at which started playing video games (years)	12 (10-15)	10 (8-13)*
Gaming h/weekday	1.50 (1.00-2.00)	1.00 (0.75-2.00)
Gaming h/weekend	2.50 (1.38-4.00)	2.50 (2.00-3.50)
Gaming h/week	13.00 (8.00-18.00)	11.00 (7.00-16.50)

Values are median (IQR). *P<0.05. IQR: Interquartile range, PUBG: PlayerUnknown's Battlegrounds

Table 3: Descriptive statistics of gaming addiction, psychological well-being, and trait emotional intelligence of PlayerUnknown's Battlegrounds and non-PlayerUnknown's Battlegrounds players

Variable	PUBG ($n=33$)	Non-PUBG ($n=31$)	P
GAS	16.4±4.8	13.5±3.9	0.011*
Depression	9.8±6.5	5.8±4.6	0.006**
Anxiety	13.3±6.5	9.2±6.0	0.011*
Stress	14.7±7.6	11.1±7.6	0.065
DASS-21 (total)	37.8±17.1	26.1±14.3	0.005**
TEIQue-sf	139.2±23.6	148.4±21.9	0.111

Values are mean±SD. *P<0.05, **P<0.01 between the two study groups. GAS: Game Addiction Scale, DASS-21: Depression, Anxiety, and Stress Scale 21, TEIQue-sf: Trait Emotional Intelligence Questionnaire-Short Form, PUBG: PlayerUnknown's Battlegrounds, SD: Standard deviation

Table 4a: Correlation of gaming addiction, psychological well-being, and trait emotional intelligence of the subjects in the PlayerUnknown's Battlegrounds group ($n=33$)

	1	2	3	4	5	6
GAS						
r	-	0.212	0.387*	0.121	0.207	−0.204
P		0.236	0.026	0.501	0.248	0.256
Depression						
r	0.212	-	0.445**	0.475**	0.018	−0.502**
P	0.236		0.010	0.005	0.920	0.003
Anxiety						
r	0.387*	0.445**	-	0.684**	0.220	−0.402*
P	0.026	0.010		0.000	0.219	0.020
Stress						
r	0.121	0.475**	0.684**	-	0.215	−0.142
P	0.501	0.005	0.000		0.228	0.432
DASS-21						
r	0.207	0.018	0.220	0.215	-	−0.009
P	0.248	0.920	0.219	0.228		0.961
TEIQue-sf						
r	−0.204	−0.502**	−0.402*	−0.142	−0.009	-
P	0.256	0.003	0.020	0.432	0.961	

GAS: Game Addiction Scale, DASS-21: Depression, Anxiety, and Stress Scale 21, TEIQue-sf: Trait Emotional Intelligence Questionnaire-Short Form. *P<0.05, **P<0.01

Table 4b: Correlation of gaming addiction, psychological well-being, and trait emotional intelligence of the subjects in the non-PlayerUnknown's Battlegrounds group ($n=31$)

	1	2	3	4	5	6
GAS						
r	-	0.365*	0.180	0.024	0.233	−0.266
P		0.043	0.332	0.896	0.207	0.148
Depression						
r	0.365*	-	0.283	0.357*	0.565**	−0.593**
P	0.043		0.124	0.049	0.001	0.000
Anxiety						
r	0.180	0.283	-	0.574**	0.716**	-0.281
P	0.332	0.124		0.001	0.000	0.125
Stress						
r	0.024	0.357*	0.574**	-	0.791**	−0.525**
P	0.896	0.049	0.001		0.000	0.002
DASS-21						
r	0.233	0.565**	0.716**	0.791**	-	−0.652**
P	0.207	0.001	0.000	0.000		0.000
TEIQue-sf						
r	−0.266	−0.593**	−0.281	−0.525**	−0.652**	-
P	0.148	0.000	0.125	0.002	0.000	

GAS: Game Addiction Scale, DASS-21: Depression, Anxiety, and Stress Scale 21, TEIQue-sf: Trait Emotional Intelligence Questionnaire-Short Form, *P<0.05, **P<0.01

also had a significant negative correlation with stress ($P < 0.01$) and total DASS-21 scores ($P < 0.001$) in these subjects. Anxiety and stress subscale scores were also significantly correlated ($P < 0.01$) in this study group [Table 4b].

Discussion

The primary aim of this study was to estimate and compare the prevalence of gaming addiction in players of different types of online games as well as to evaluate and compare the inter-relationship between gaming addiction, EI, and psychological well-being in them. For this, we recruited players of only PUBG or non-PUBG FPS subgenres of online games as subjects. We chose these games as they are currently the most popular online games being played by male youth in the Indian subcontinent. Moreover, they have players who tend to preferentially play either one of them only.[25]

Our study shows that players of non-PUBG online games started gaming at a significantly younger age as compared to the PUBG players. However, time spent in gaming and sociodemographic profile were comparable in both the study groups, possibly attributable to the fact that all subjects were undergraduate medical students in the same institute and therefore had similar time available for recreational pastimes.

PUBG players had significantly higher GAS scores compared to non-PUBG group players, indicating higher addictive potential of PUBG. For each of the seven criteria of GAS, the percentage of players "meeting" them was also higher in the PUBG players. Our data further indicated that almost two-fifths of the PUBG players were addicted based on the polythetic format, in contrast with less than one-fifth of the non-PUBG players. Based on monothetic format, the prevalence of gaming addiction decreased remarkably to <10% in PUBG players and zero non-PUBG players. This variance is expected because of the difference in definition.[21] Our results are in conformity with various previous researches, in which a remarkably high number of addicted players, ranging from 16% to 39%, were reported.[1,3,12] When monothetic format was applied by the researchers, it was found that only 1.8% of the respondents could be categorized as addicted.[26] It is noteworthy that almost 50% of the PUBG gamers in our study met the core addiction criteria of excessive preoccupation, craving, withdrawal, and neglecting of other important chores. In the non-PUBG group, one-fourth to half of the subjects met these criteria, thereby indicating that this genre too has an addictive potential. Our study is probably one of the first few studies, in which the prevalence of gaming addiction has been compared among PUBG and FPS genres of online mobile games.

Psychological health data of the present study demonstrate that subjects in the PUBG group scored significantly higher than non-PUBG subjects on DASS-21 and its depression and anxiety subscales. The number of subjects who scored above the normal range on depression and stress subscales was also comparatively higher in the PUBG group. Although the majority were categorized as mild or moderate, it is an alarming trend. The severity of symptoms of anxiety was highest, with approximately one-fourth and half of the subjects perceiving them as severe or extremely severe in the non-PUBG and PUBG groups, respectively. The high prevalence of anxiety in both the study groups points toward the detrimental effects of online mobile gaming on mental health, irrespective of the type of game played. Increase in gaming and virtual interaction is many times at the cost of actual social interaction and sports. The gamers start isolating themselves and focus entirely on in-game achievements.[14] It may also become a medium for arousal and reward and an escape mechanism. This puts them at risk of developing addiction and can have detrimental effects on psychological health.[27] A positive correlation between gaming addiction and depression was found in non-PUBG players. Furthermore, a positive correlation between gaming addiction and anxiety

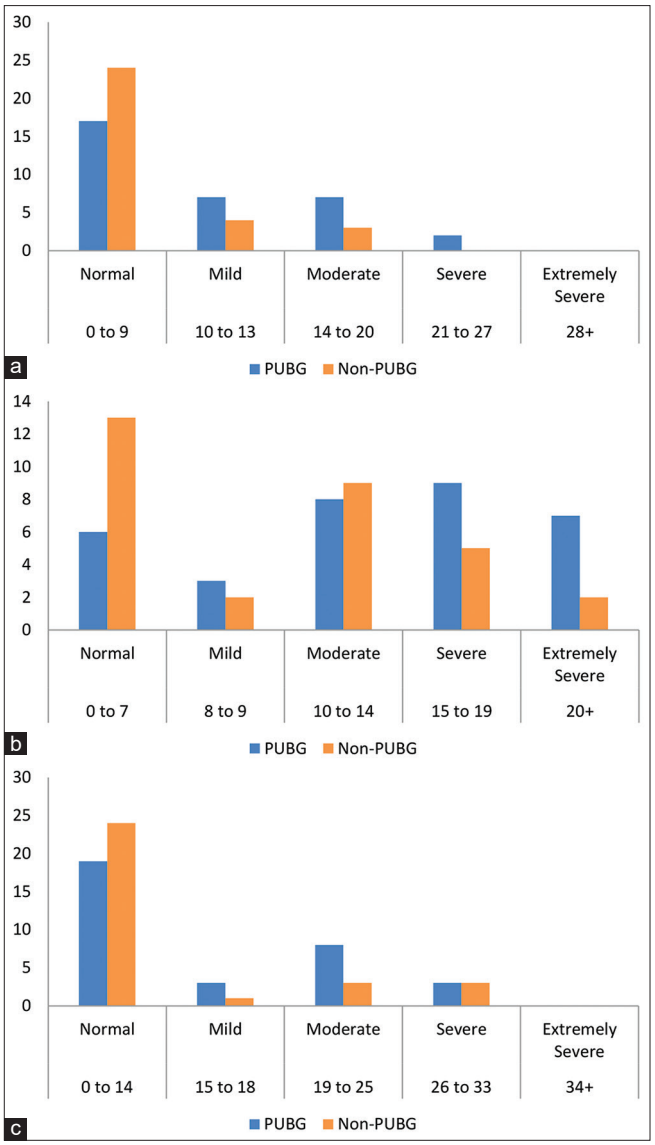

Figure 2: Comparison of prevalence and severity of depression, anxiety, and stress in PlayerUnknown's Battlegrounds and non-PlayerUnknown's Battlegrounds players (a-c, respectively), y-axis represents number of players

was found in PUBG players. Our findings corroborate with previous research which has demonstrated that online gamers strive hard to score higher for admiration in virtual gaming communities.[9,10] In this pursuit, they may even suffer from sleep disturbances, leading to increased anxiety.[2-4]

In the present study, PUBG and non-PUBG players had similar TEIQue-sf scores, indicating that the EI of both the groups was comparable. Prior research has shown that EI is affected by environmental factors,[11] is modifiable, and can be subjected to learning process.[15] Since all subjects had similar sociodemographic background and were students in the same institute, it may have partly influenced our EI findings.

The results of correlational analysis in our study did not show any significant association between TEIQue-sf and GAS scores in either PUBG or non-PUBG players. These

results are in contradiction to a previous study, in which a negative correlation between emotional competence and excessive online gaming was reported.[12] Few other studies have associated lower scores on EI with excessive online gaming, especially in younger groups.[11] However, we observed that trait EI scores and depression and anxiety subscale scores were significantly negatively associated in PUBG players. A significant negative association between trait EI scores and total DASS-21 and depression and stress subscale scores was also seen among non-PUBG group subjects. These results indicate that EI may have a protective role against psychological morbidity in potential online game addicts. To our knowledge, this is one of the first studies to have explored the inter-relationship between gaming addiction, EI, and psychological well-being in players of two different types of online games in a single study.

Our findings provide insights into the comparative prevalence of gaming addiction and psychological morbidity in PUBG and FPS non-PUBG online mobile game players. It also sheds some light on their relationship with EI. However, our study sample was limited and narrow in terms of age, gender, and sociodemographic status. Hence, more studies are required for statistical validation in a larger population. Nevertheless, since we have taken recent and two of the most popular online game subgenres, this study assumes relevance in the contemporary world. Moreover, considering the fact that trait EI is modifiable and likely has a protective role against addiction and psychological morbidity, appropriate measures can be developed for improvement of EI.

Conclusion

Our results indicate a high prevalence of gaming addiction and psychological morbidity among both PUBG and FPS non-PUBG online mobile game players. Our results further illustrated that playing different online games had a similar influence on gaming addiction, psychological well-being, and EI of gamers as well as on the inter-relationship between these variables in them. However, it is noteworthy that the extent to which these parameters were impacted was significantly different in both the study groups. The prevalence of gaming addiction and symptoms and the severity of depression, anxiety, and stress were significantly higher in PUBG players than in non-PUBG players. Overall, these findings suggest that having higher addictive gaming behavior may adversely affect psychological well-being. On the contrary, it may also be that poorer psychological health can be associated with an enhanced predilection for developing gaming addiction. Furthermore, a negative correlation of trait EI with DASS-21 subscales is indicative of the potential protective effect of EI against psychological morbidity. Future studies may be planned to see the influence of interventional EI training workshops on psychological health and addictive gaming behavior of online gamers.

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Conflicts of interest

There are no conflicts of interest.

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