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ORIGINAL CONTRIBUTION

Relationship between Personality Traits and Aggression among Online Video Gamers

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Abstract— People of all sexes and age groups can find entertainment in playing online games. They play video games for entertainment, but too much gaming can result in addiction. Both beneficial and adverse psychological impacts can be attributed to gaming, but the adverse effects outweigh the positive effects significantly. The current study looked at the association between aggressiveness and personality traits among PUBG players who were university students. Buss Perry Aggression questionnaire with an alpha reliability of .78 and the Big five inventory with an alpha reliability of .63 were used to collect the data. The research was carried out using a cross-sectional research approach. Research data was gathered using the survey approach using the convenience sampling technique and data was collected through a google form. The number of PUBG players in the sample was 250. Correlation, t-test, and regression analysis were used to compute the results. It was hypothesized that males would be more aggressive than females. The results suggest that aggression differs significantly by gender. The findings a positive association between personality qualities and aggression (openness, conscientiousness, agreeableness, neuroticism, and extraversion). These results contribute to our understanding of the psychological impact on online video game players. The study's findings aid in resolving the PUBG player's psychological issues. Although the field has rapidly expanded over the last three to four years, a clear view of the association between the Big Five personality traits and video games may be achieved.

Index Terms— Aggression, Personality traits, PUBG players, Addiction, Violent video games, Psychological impact, Psychological issues

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Introduction

According to Müller et al., 2014 internet gaming has grown more prevalent and a significant component of daily life for adolescents and adults due to its attributes (free access, limitless use, intense engagement, and rapid rewards). Game addiction is a dangerous condition marked by excessive gaming and interference with daily activities. The most well-known entertainment game is PUBG game. There is a lot of violence in the video game PUBG. PUBG is a first-person shooter game that falls under the "Battle Royale" subgenre and is created and distributed by the small Korean company "Blue Moon" (Dadgee & Philips, 2019). PUBG gaming addiction is associated with aggression, several mental health issues, declining vision, weight gain, neck pain, and difficulty concentrating, among other symptoms. In addition to these physiological issues, game addiction can result in mental disease, hyperactivity, etc. Due to PUBG's accessibility on smartphones, players may now access it from anywhere in the world. Quality graphics, fresh challenges, accessibility, an intuitive control scheme, and

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real-time player engagement are some of the key factors contributing to PUBG's success (Al-Mansour, 2019). The live communication consists of proximity audio, in-game team voice chat and live text messaging.

Aggression is most frequently described as conduct driven by the desire to harm another person. Violence is a violent kind of aggressiveness to cause great harm, typically physical hurt or death (Allen & Anderson, 2017). The player of a violent video game actively chooses and acts as an aggressor; as a result, the player's behavioral repertoire is widened to encompass new and different hostile possibilities. Contrary to other forms of media violence, when engaging in a video game, a player takes on the role of a game character rather than just watching (Calvert & Tan, 1994). The following causes contribute to increased aggression: substance misuse, mood disorders, peer pressure, family pressure, and psychological issues. When a person is exposed to violent content in films, TV shows, video games, etc., they may experience physical and sexual abuse (Rao, 2016). One of the significant issues when discussing video games is that most of them feature aggressive elements (Motte, 2013). However, it has been noted that there is a statistically significant link between physical abuse and shooting and fighting video games (Dickmeis & Roe, 2019). Additionally, violent and competitive video games are positively connected with physical violence (Dickmeis & Roe, 2019). According to Carnagey et al. (2004), the research "demonstrates a righteous between violent video game use and rises in aggressive behaviour, aggressive thoughts, and levels of aggression and declines in prosocial behaviour, kindness, and sensitivity to aggression," according to the American Psychiatric Association (APA) Working Group on Violent Media, which conducted an analysis of 31 studies that were published between 2009 and 2015 and reached this conclusion. There are consistent positive associations between playing video games and aggression (Dominick, 1984; Fling et al., 1992; Lin & Lepper, 1987).

According to Anderson et al. (2010), playing violent video games not only has a significant impact on aggression, aggression-related cognition, and aggression effect, but it also has a negative impact on prosocial attitude and empathy. Video game addiction leads to a variety of pathological behaviors, including preoccupation, loss of control, and communication with others and with oneself (Lemmens, Valkenburg & Peter, 2011). Violent video game play has direct effects on an individual's aggression in a good family environment. In contrast, it has both direct and indirect impacts on the individual's aggression in a low-income family environment (Shao & Wangon, 2019). Additionally, the American Psychological Association's working group on violent media has stated that a violent video game addiction decreases empathy and increases aggressive behaviour, thoughts, and emotions. According to Yao et al. (2019), playing video games frequently causes moral disengagement, disinhibition, and increases in the four aggressive qualities (physical aggression, verbal aggression, anger, and hostility). A substantial amount of research has discovered that exposure to violent video games (VVGE) is linked to an increase in hostility in people of all ages (Gentile, Bender, & Anderson, 2017; Greitemeyer, 2018; Krahé, 2014; Velez et al., 2016). Although some recent studies have not identified a substantial link between VVGE and aggression (Ferguson & Kilburn, 2010; McCarthy et al., 2016; Pan et al., 2018) but experimental, cross-sectional, and longitudinal investigations, have generally revealed a fairly strong association. For instance, the majority of the studies in this field have revealed that violent video games decrease empathic feelings and helping actions while increasing negative emotions, anger, physical sensations, and aggressive behaviors (Hasan, Bègue, & Bushman, 2012; Verheijen et al., 2018). Prior studies have explored the relationship between violent video games and aggression, but few studies can be found regarding PUBG addicts and the relationship between personality traits and aggression. So in the present study, the researcher examines the relationship between the big five personality traits and the aggression of PUBG players.

The personality is made up of integrated psychological traits and structures that have an impact on how one interacts with intrapsychic, physical, and environmental factors as well as on adaptability (Larsen & Buss, 2005). Mental health is significantly influenced by our personality. Second, by indirectly affecting a person's objective well-being, for as by acting how they physically respond to stress (Kodl et al., 2004). Second, personality traits impact the objective health of psychoactive offenders and are a significant risk factor (Felitti et al., 1998). According to Thompson ER (2008), the process of online game addiction was partially explained by personality variables. Extraversion, openness, conscientiousness, agreeableness, and neuroticism are the five broad personality traits used to describe human personality. Each individual has a distinct personality that is shaped by the interaction of several qualities. Temperament qualities and personality traits are thought to be significant factors that could contribute to the creation and sustaining of digital games (Brand et al., 2016; Dieris-Hirche et al., 2020; Mihara & Higuchi, 2017; Munno et al., 2017). According to Wang et al. (2015), gaming addiction was highly correlated with low conscientiousness and reduced openness to experience. Positive correlations between neuroticism and video game addiction and a negative correlation with conscientiousness (Wittek et al., 2016). According to Reyes et al. (2019), pathological gaming was negatively connected with the other Big Five personality traits (extraversion, openness to experience, agreeableness, and conscientiousness). However, neuroticism was positively correlated with pathological gaming. Additionally, they discovered that conscientiousness was the best predictor of pathological gaming. De Hesselle et al. (2020) found that gamers who are more agreeable, extroverted, and conscientious tend to play less. This study provides insight into the many personality traits that PUBG addicts possess. The results of this study assist us in identifying the personality traits that dominate PUBG addicts. People with different personality traits have different levels of relationship with aggression. So it would be crucial to compare whether those who used to play PUBG have any differences in personality features from the general population.

Rational

The most popular entertainment habit today is playing the PUBG game. It is the most important medium. A dangerous disorder known as "game addiction" is characterized by excessive gaming and disruptions to daily functioning. The current study intends to examine how people who play PUBG behave aggressively, have suicidal thoughts, and are depressed. Game addiction is associated with depression, suicide, and aggressiveness. Participants in the study are people who play PUBG. These results contribute to our understanding of PUBG's psychological impact. The study's findings aid in resolving the PUBG player's psychological issues. Although the field has rapidly expanded over the last three to four years, a clear view of the association between the Big Five personality traits and video games may be achieved. The purpose of the current study is to investigate how the Big Five personality traits and video games are related.

Objectives

The objectives of this research are:

- To examine the relationship between personality traits and level of aggression among PUBG players.
- To investigate the aggression level based on of gender in PUBG players.

Literature Review

Barthelemy and Lounsbury (2009), the goal of this study was to ascertain whether aggression contributes incremental validity to academic achievement prediction beyond the big five personality characteristics. The findings of this study showed that aggression does, contribute incremental validity above and beyond the big five personality traits. The study also showed a strong relationship between academic achievement and the big five personality traits. More precisely, in the current sample, there is a strong correlation between conscientiousness, openness, agreeableness, and emotional stability. Conscientiousness, openness, and aggression are significantly connected with grades when aggression is included in the statistical model.

According to findings, online game addiction is adversely connected with self-control and positively correlated with aggressive and narcissistic personality traits (p 0.001). Additionally, a multiple regression study showed that a person's narcissistic personality traits, aggression, self-control, interpersonal interaction, and career might all be used to predict the degree of their online game addiction. However, the model could only account for 20% of the variation in behavioral outcomes (Kim, 2008).

Comparative analysis was done to see whether male and female athletes differed in their levels of aggression. One hundred (N=100) Peshawar residents made up the sample. The current study used the Buss & Perry Aggression Questionnaire (AQ) to gauge the aggressiveness of sports players. It was predicted that male athletes would score higher on the aggression scale than female athletes. The findings demonstrate a noteworthy distinction between male and female athletes (Hayat Muhammad, 2019).

Owens and MacMullin (1995) examined research on how aggressive conduct varies by gender. Boys and girls are roughly equally aggressive vocally, while boys are more physically and girls are more indirectly aggressive when compared to their total aggression ratings. Girls employ greater indirect aggression as a percentage of their overall aggressiveness scores. Boys are physically more aggressive. Direct verbal hostility is equally prevalent between the sexes.

Sneha et al. (2020) examined the differences between PUBG users and non-addicts in three personality traits: neuroticism, openness to experience, and agreeableness. Results revealed that levels of neuroticism and openness did not statistically differ between PUBG users and non-addicts. In addition, studies showed that PUBG players are less amicable than non-addicts. Additionally, aggressive and competitive online gaming has a good correlation with actual violence (Dickmeis & Roe, 2019).

Anderson and Bushman (2002) proposed the GAM, which includes three paths: person and situation inputs, internal emotional and cognitive processes, and assessment and decision-making. According to the GAM, when confronted with the same situation, people with different personality characteristics may take different emotional and cognitive paths (Anderson & Bushman, 2002). As a result, while some people may exhibit aggressive impulses and behaviors, others may not (Zhang et al., 2017). People with higher levels of neuroticism, for example, are more likely to have painful and irrational thoughts. They may then display aggressive behavior. People who are more agreeable, on the other hand, are less inclined to display violent behavior (Quan et al., 2021). According to Dam et al. (2021) neuroticism was positively correlated with aggression, while openness to experience and conscientiousness were negatively correlated with aggression. While agreeableness and aggression were negatively correlated (Dinić & Wertag, 2018), and according to Sharpe & Desai (2001) extraversion was positively related to aggression.

H1: There will be a positive correlation between extroversion and aggression.

H2: There will be a negative correlation between agreeableness and aggression.

H3: There will be a positive correlation between conscientiousness and aggression.

H4: There will be a positive correlation between neuroticism and aggression.

H5: There will be a negative correlation between openness and aggression.
H6: Aggression will be higher in male PUBG players than in female PUBG players.
H7: The number of hours spent playing PUBG will significantly predict aggression among video gamers.

Research Method

⊂ The current study was based on a cross-sectional research design. The sample of this research study consists of 250 PUBG players. The researcher selected the sample by using the convenience sampling technique. Research data was collected through a Google form. Participants who play PUBG, voluntarily participate in research, and are literate were included by the researcher, while the participants that don't play PUBG and are illiterate and unwilling to engage in the study were excluded.

Measures

The aggression of PUBG players was assessed by a 29-item scale called the Buss-Perry Aggression Questionnaire (Buss & Perry, 1992) measures four different elements of human aggression. There are two published versions in Spanish. A 5-point Likert-style scale (1 being uncharacteristic and 5 being extremely characteristic) was used to ask participants to rate each item. During a typical class day, the questionnaire was taken collectively in each course. While the Big Five personality inventory (Rammstedt et al., 2007) was used for personality assessment in under a minute: German and English versions of the Big Five Inventory's 10-item abbreviated form. 41; 203-212 of the Journal of Research in Personality. The BFI-10 asks respondents to reflect on their experiences from the previous week and assess how each statement applies to them. This scale has 10 elements and 5 possible responses. 1 = "Strongly Disagree," 2 = "Disagree," 3 = "Neutral," 4 = "Agree," and 5 = "Strongly Agree." Using the BFI-10 scales, score: Extraversion is rated as 1R–6, Agreeableness as 2R–7R, Conscientiousness as 3R–8, Neuroticism as 4R–9, and Openness as 5R–10 (R = item is reversed-scored). Each subscale consists of two items, with scores ranging from 0 to 10. The relationship between different personality traits and aggression was determined using the Pearson correlation moment. Regression analysis was also used. The gender differences in study variables were determined by using a t-test.

Results

Table I
Psychometric properties of study variables

Variables	N	No of item	α	Mean	SD
BPAQ	250	29	.84	88.14	16.25
BFI-10	250	10	.63	34.01	5.71

Note: BPAQ= Buss and Perry aggression questionnaire and BFI= Big Five inventory-10

Table I indicates the Buss and Perry aggression questionnaire and Big Five inventory-10 reliability, which is .84 and .63, respectively.

Table II
Correlation between personality traits (Agreeableness, Conscientiousness, Neuroticism, Openness, and Extraversion) and aggression

Variables	1	2	3	4	5	6
Agreeableness	1	.327**	.254**	.342**	.245**	.144**
Conscientiousness	---	---	.301**	.197*	.142*	.159*
Neuroticism	---	---	---	.212**	.153*	.142*
Openness	---	---	---	---	.282**	.150*
Extraversion	---	---	---	---	---	.048
BPAQ	---	---	---	---	---	1

Note. ***p<.001, **p<.01, *p<.05

Table II shows that the three Personality Traits (conscientiousness, neuroticism, and extraversion) have a weak positive correlation with aggression. In contrast, the other two personality trait (Agreeableness and Openness) have a negative correlation with aggression in university students who plays PUBG.

Table III
Mean, Standard Deviations, and *t*-values of PUBG players on BPAQ (*N*=250)

		Male (135)		Female (115)				95%CI	
Variables	N	M	SD	M	SD	*t* (298)	*ρ*	LL	UL
BPAQ	250	85.65	15.99	91.07	16.12	2.6	.008	-9.4	-1.4

Note: BPAQ= Buss and Perry aggression questionnaire, CI = Confidence Interval; LL = Lower Limit; UL = Upper Limit

Table III illustrates the result of the t-test for measuring differences in BPAQ between males and females. Results showed the mean, standard deviation, ρ value, and t-test value. It indicates that females score (M=91.07) high on BPQA compared to males (M=85.65).

Table IV
Linear regression coefficient of no of hours used in PUBG game on BPAQ

Variable	B	SE	β	t	ρ
Constant	80.976	2.276		35.58	.000
No. of hours used in PUBG game	3.967	1.052	.218	3.513	.001

Note: R= change, *SE*= standard error, R=.218^a, R^2= .047, Adjusted R^2=.044

Discussion

The goal of the current study is to examine the aggressiveness and personality characteristics of university-based PUBG players. According to the number of participants, Table 1 reveals that both scales' reliability is good. BPAQ has a very good reliability of .84 and 6.34 on the BFI scale, which is also satisfactory.

The correlation between aggressiveness and personality traits is seen in Table 2. The findings are consistent with our prediction that extraversion and aggression will positively correlate. Results indicate a weakly positive connection between extraversion and aggression. Additionally, Table 4 demonstrates a positive correlation between agreeableness and aggression, which goes against our prediction that there would be a negative correlation. Previous research supports my hypothesis (Ketan Kotalwar et al., 2020). According to them, PUBG users are less agreeable than non-PUBG users.

Our findings also provide evidence for our prediction that conscientiousness and neuroticism will positively correlate with aggression. Research conducted by Barthelemy and Lounsbury (2009) supports my hypothesis that there is a strong correlation between conscientiousness and aggression. Reyes et al. (2019) investigated a representative sample of Filipino gamers. They discovered a positive correlation between pathological gaming and neuroticism. As Negative emotions, including anxiety, guilt, and depression, are linked to neuroticism. (Widiger, 2009). An individual with a high amount of neuroticism will typically experience feelings of emotional unstable, hostility, despair, vulnerability, and worry, in contrast, an individual with a low level of neuroticism will normally be calm, relaxed, self-confident, and worry-free. (Kwon & Weed, 2007). So, our hypothesis that 'there will be a positive correlation between neuroticism and aggression' was accepted; gamers who have a high level of neuroticism are more aggressive.

Our fifth hypothesis that 'there will be a negative correlation between openness and aggression' was rejected because our statistical analysis reveals a weak positive relationship between openness and aggression. Sneha et al. (2020) examined the differences between PUBG users and non-addicts in three personality traits: neuroticism, openness to experience, and agreeableness. Results revealed that levels of neuroticism and openness did not statistically differ between PUBG users and non-addicts.

Our sixth hypothesis was rejected because our statistical findings show that females were more aggressive than male PUBG players. Owens and MacMullin (1995) examine research on how aggressive conduct varies by gender. Boys and girls are roughly equally aggressive vocally, while boys are more physically and girls are more indirectly aggressive compared to their total aggression ratings. Boys are physically more aggressive. Boys spend more time playing video games so they become more aggressive because of the detrimental impacts of playing video games and the violent content in some of them.

Seven hypotheses that 'the number of hours spent on playing PUBG will significantly predict aggression among video gamers' was accepted. Research findings support the general aggression model's (GAM) hypothesis that playing violent video games causes aggression. This finding is consistent with Chory Chyrillio's (2007) finding that the frequency of violent video game play is directly and positively related to a player's trait of verbal aggression.

Conclusion

People of all sexes and ages enjoy playing online games as a kind of pleasure. The primary objective of the gaming industry is to engage people and subtly encourage their addiction in order to grow their business. This study sought to understand the aggressiveness and per-

sonality characteristics of university students that played PUBG. According to the results of the current study, aggression and personality traits are significantly positively correlated. The study also shows that aggressiveness and personality traits are influenced considerably by gender. The previous literature also supports our results. More men than women are drawn to games that emphasize violence, control, and many violent shooting video games are created with men in mind. The study is hoping that it will serve as a foundation for subsequent research on whether playing violent video games leads to more aggressive conduct.

Limitation and Suggestions

The present research was confronted with some limitations. Certain factors were assumed and acknowledged as a limitation of the present study and, therefore, vital to declare for consideration for upcoming research. The sample was only representative of university students of the same culture. So in the future, it should be conducted at different universities from different cultures. The sample size was small, and data was collected through a Google form, so it is possible that students would not read the statements carefully and responses were not appropriate. This study checks only a few factors related to PUBG, and many other important variables was ignored. So it is suggested that future researchers should also explore those variables. This study was quantitative, so to get further and more comprehensive information qualitative study should be conducted. The interview method or observational method should be used to reveal different dimensions of the variables, and it is also possible that violent video game players may engage in other activities that are violent in nature and their aggression may be because of their activities rather than violent video games.

Implications of the Study

PUBG is a popular game among young people. It is a modern type of addiction. Our mental health is significantly impacted. This study aids in identifying some mental health conditions that affect PUBG gamers. It aids the mental health professional in resolving these player conflict issues. It gives parents essential knowledge about the problems. Psychologists and medical specialists educate people about online games and their impacts. Besides their negative effects, online games can assist people in developing critical thinking, thus, parents of gamers can be advised to limit their children's gaming time rather than completely eliminate it from their schedule.

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