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PREDICTORS OF ONLINE GAMING ADDICTION AMONG PAKISTANI STUDENTS

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ABSTRACT

Objective: *The objective of the present study was to investigate the predictive relationship between dark personality traits and online gaming addiction.*
Design of study: *Correlational research design*
Place and duration of study: *September 2020-September 2021 Islamabad, Pakistan*
Sample and Method: *In this present study Pakistani students (both gender) n=264 within the age range of 12-18 years (M=16.78; SD=1.66) participated who play online first-person shooter games.*
Results and Conclusion: *Linear regression analysis findings show that there is significant predictive relationship between dark personality traits and gaming addiction among Pakistani students and there is significant difference at dark personality traits and online gaming addiction among Pakistani students who play more online games as compare to those who play less time online games. It is concluded that dark personality traits significantly predict gaming addiction among Pakistani students.*

Keywords: *Dark personality traits; Online gaming addiction; Students*

INTRODUCTION

Taking into account how strongly our lives are under the influence of innovations like the internet. Now days, its easily conceivable that the internet has vast variety of utilizations in our daily life, covering broad range of aspects of human life serving various purposes in the domains of utilities and entertainment including shopping, gaming, watching shows, listening and downloading music, and building ties and connections for the sake of socialization. Usage of internet on mobile devices and other electronic gadgets is based on user personal preferences and desires. Online gaming is one of the emerging trends in this advance world people especially in youngsters. The online gaming is found to be potential cause of different mental health problems among youth across the globe such as aggression, self-harm, suicide, and online gaming disorder (Tang & Fox, 2016).

The addiction of gaming is similar in its course of action, just as the addiction to different chemical substances. However, online gaming addiction is a non-chemical addiction which has impacts a person's functioning in the same way as chemical addiction does. World Health Organization (WHO) has added online gaming addiction in International Classification of Diseases (ICD-11) highlighting its potential effects on mental health (WHO, 2018). The WHO conceptualized online gaming addiction as manifesting weakened self-control against gaming, an increase in the need of gaming, and continuation of gaming regardless of its adverse results. Therefore, it can have major adverse effects on an individual's mental health and functioning serving as potential causative factors of anxiety, depression, stress, psychosocial problems, and distress (Kuss & Griffiths, 2012).

Among adolescents online gaming addiction is considered to be very popular. Gamers play video games through the internet by using different means including mobile devices (smartphones), and gadgets such as PlayStation, Xbox, Ntendo, and Computers. However, these video games differ in their content and nature such as aggressive, strategic and survival video games. People usually engage in games which they prefer but it is noted that online first-person shooter games or multiplayer shooter games i.e., PUBG, Dota, Call of Duty, and Free fire are the common online first-person shooter games played by younger population, across globe (Herodotou, et al., 2011).

It is noted that online players' personalities are also linked with such compulsive gaming and online gaming addiction. For example, the dark

personality traits which are psychopathy, machiavellianism, sadism and narcissism are found to be linked with online gaming addiction. These dark personality traits act as precursors or triggers of aggression. For instance, online gamers with the trait of machiavellianism are prone to maltreat other players and use manipulation as a key to achieve their own goals while playing. In the similar fashion, another dark trait of personality namely narcissism, which manifests as an individual's feelings of superiority and self-love. Thus, an individual with this trait would feel that he/she is superior to all the teammates, having the most commendable playing skills (Raskin & Hall, 1979).

Furthermore, the third dark personality trait is psychopathy when an individual has diminished empathy, paired with high thrill-seeking behavior in online games. In online video games, those gamers who score high in psychopathy will tend to make risky moves and seem to care less about what impression their teammates make. The last dark personality trait is sadism which is defined as an individual's tendency to seek pleasure from inflicting pain/harm or humiliating others (Hare, 1985). In the realm of online gaming, an individual with higher sadism will likely enjoy trolling other people (Plouffe et al., 2017).

During the past decade, the addiction of online gaming has gained media and scientific attention, highlighting its adverse behavioral and psychological consequences among students, for instance poor academic performance; sleep problems, mood disorders, anxiety disorders and constant fatigue (Brunborg et al., 2013). Considering the negative consequences of gaming, the World Health Organization (WHO, 2018) officially made the decision to include internet gaming as a diagnosable disorder in the 11th edition of the International Classification of Diseases. As technology overtook human's daily lives, video games are taking over the lives of youth at an alarming rate. This can be understood by the results of the surveys conducted across different countries, revealing that one out ten youngsters is addicted to online games and with highest numbers of male gender. In 2018, a report was compiled by the Public Health of Switzerland In Switzerland, which stated approximately 70,000 people which makes up around 1% of the total population is "problematic". Nevertheless, World Health Organization's decision to include gaming disorder in ICD-11 was conceived from the data obtained from more than 20 countries. The increase in treatment seeking related to gaming behavior also instigated the need for it to be categorized as a disorder. Therefore, American Psychological Association (APA) was able to establish a consistent relationship between playing violent games and aggressive behavior (Kardefelt-Winther, 2014).

The same pattern is observed in our country, Pakistan, the most popular game namely Player Unknown Battle Grounds (PUBG) gained attention among children and teenagers alike in the recent times. Several instances have been reported whereby in-game purchases caused problems for some families. Poor impulse control, disturbed sleep patterns, and depression and anxiety are some of the prominent issues arising from this addiction. According to a survey conducted in Peshawar, it was found that 1.5% adults in the age range between 16-28 were going through online gaming addiction. Furthermore, another study reported that people belonging to different gender play games for different reasons, for instance Pakistani males often engage in online gaming for the purpose of socialization while females in Pakistan play such games as a coping strategy against their daily life stressors (Salam et al., 2019). Similarly, another study suggested that male gender is more prone towards gaming addiction as compared to female gender. In addition to it male participants experienced more emotional issues and negative influence on their life due to it (Zahra et al., 2019). In a similar fashion, a study on online gaming addiction in Pakistan explored that half the population of university students in Pakistan, specifically males, are vulnerable towards developing online gaming addiction. The motives behind online gaming addiction were fulfillment of unmet psychological needs and experience of positive emotions such as happiness, fantasy, escape and achievement (Khan & Ghous, 2014).

The inclusion of online gaming disorder in the11th edition of ICD opened new avenues of research. Since adolescents are more prone towards gaming addiction the highest number of affected populations consists of adolescents. To check overall prevalence 16 relevant studies conducted prior to March 2017 were selected through databases. The overall prevalence rate of Online Gaming Addiction among adolescents was 4.6% whereby Male participants generally scored 6.8 % higher on gaming addiction as compared to females. In-depth analysis of different sub groups revealed that the prevalence was highest in 1990s and also when ICD-11 criteria were used examining gaming disorders. In this way the concerning prevalence of Internet Gaming Disorder was highlighted among adolescents, particularly among males (Aarseth et al., 2017).

Alongside the pathological effect of video games, this fact cannot be denied that playing video games has some positive impact on player's cognitive and social skills, within tolerable boundaries. It is said to develop problem solving skills, improving memory, and helps with mental processing speed and

concentration. Nevertheless, excessive amount of time spent on gaming results in worst outcomes. Just like any other addiction it builds up restlessness and discomfort in the individual when he/she is unable to play. It also leads to preoccupations and weakened ability to deal with urges of more playing. Many studies reveal that adults who play more than 40 hours in a week are more vulnerable to developing gaming addiction. The psychological effect of gaming on these individuals includes social withdrawal, aggressive behavior, and being less mindful about their surroundings. Further studies showed that younger adults are more involved in online gaming as compared to older adults (Gentile et al., 2011).

Despite the general psychological and behavioral outcomes of gaming, the role of personality traits in online gaming addiction is complex. Individuals with different kinds of personality are differently prone towards development of online gaming addiction as these traits influence the experience of play. The studies on dark personality traits have revealed that gaming disorder is related to higher levels of neuroticism, but there exists certain relationship of gaming with Machiavellianism, psychopathy and narcissism (Gervasi et al., 2017). Other personality traits which have been studied and found to be related to gaming addiction are impulsivity, sensation seeking, and aggressiveness. Those players who score higher on dark personality traits are driven by the outcomes of playing which may help them in gaining fame in the digital world along with wealth, manipulating others for their own benefits, engaging in risky and reckless behaviors with least physical consequences, and last but not the least obtaining rewards more easily than in the real world offline. Therefore, these dark personality traits directly predict an individual's disordered game use to some extent (Nuyens et al., 2017).

In recent year, dark personality traits have gained much attention specifically in relation to online gaming motives and how they are related to online gaming addiction. The dark personality traits are group of personality traits, namely narcissism, psychopathy, and machiavellianism, and sadism whose shared characteristics include deception, egocentricity, impulsivity, callousness, malevolent intentions, and impulsivity (Paulhus & Williams, 2002). Studies revealed that individuals who score high on these personality traits are likely to engage in socially aversive online behaviors, such as cyber bullying, trolling, violence, and online gaming addiction (Carton & Egan, 2017).

The current study aimed to rule out the predictive relationship between dark personality traits and online gaming addiction adult students. Following hypotheses were formulated

1. Dark Personality Traits will predict online gaming addiction in adult students.

2. There will be a difference in the level of internet gaming regarding gender.

METHOD

Sample

In this present study Pakistani students n=264 with age range of age range of 12-18 years *(M=16.78; SD=1.66)* were taken who play online first-person shooter games. The students from age 12-14 n=37(14%) and 14-18 n=227(86%) were taken. Further the participants from gender female n=55(20.8%) and male n=209(79.2%) were taken. The sample of students was taken from private n=127(48.1%) and Govt. n=137(51.9%) schools and colleges of Pakistan. Further participants from middle n=17(6.4%), metric n=45(17.0%) and intermediate n=202(76.5%) class were taken. Moreover, participants were taken only who play online first-person shooter games i.e., Call of duty (COD) n=32(12.1%), DOTA n=25(9.5%) and PUBG n=207(78.4%). The students were taken who play daily online first-person shooter games 1-3 hours n=125(47.3%) and 4-12 hours n=139(52.7%) was taken. To collect the data convenient sampling technique was used.

Measures

Demographic Form

A self-developed demographic form was employed to collect bio data related information such as age, education, school, socio-economic status and family structure. It also aimed at obtaining information regarding game play; i.e., specific preferences in gaming, setting in which game is played and total hours that are spent in a day while playing.

Problematic Online Gaming Questionnaire Short Form (POGQ-SF; Papay et al., 2013).

Papay et al. in 2013 developed Problematic online gaming questionnaire short form. It comprises of 12 items based on a five-point Likert scale with 1 as Never and 5 as Almost Always. The scale measures six types of problematic behaviors related to online gaming which is Withdrawal, Preoccupation, Immersion, Overuse, Interpersonal Conflict, and Social Isolation and Interpersonal conflict. Each sub-scale of POGQ-SF consists of two items. The reliability of this questionnaire is .80. High scores on this scale suggest the higher extent of problem in gaming behavior.

Dark Triad Dirty Dozen Scale (DTDD; Janason & Webster, 2010)

Janason and Webster in 2010 devised the Dark Triad Dirty Dozen Scale. It consists of 12 items, having 3 subscales, each consisting of 3 items. These subscales are machiavellianism, psychopathy, and narcissism. The scale assesses the aforementioned dark personality features of individuals. It measures responses on a 9-point Likert type scale from "strongly agree=9" to "strongly disagree=1" The alpha reliability of the scale is equal to .087. High scores on each subscale suggest more of that personality trait.

The Short Sadistic Impulse Scale (SSIS; O'Meara et al., 2011)

In 2011, O' Meara in developed the short sadistic impulse scale (SSIS). This scale assesses the personality trait of sadism. It consists of 10 items with uni-dimensional rating scale i.e., 1 for "like me" and 0 for "unlike me". The alpha reliability of the scale is .80.

Procedure

The present study was carried out with Pakistani male and female school students n=264 from different public and private schools and colleges of Islamabad, Pakistan by using convenient sampling technique. Firstly, permission was taken from schools and colleges authorities for data collection. Before formal data collection the participants of the study were briefed about aims and objectives of the study and confidentiality was assured. Then the consent for participation in study was taken via a consent form and they were instructed to read the consent form carefully and sign the consent form if they were willing to participate. At the next step demographic form was filled and all the three questionnaires were given including problematic online gaming questionnaire

short form (POGQ-SF), the dirty triad dirty tetrad dozen scales (DTDD), the short sadistic impulse scale (SSIS) were employed. Before the administration of the questionnaires, a debriefing session was held, whereby participants were given briefing about the process of data collection and questions regarding the set of questionnaires were entertained, before the administration of the questionnaires. The responses were recorded for the data analysis and scoring of questionnaires was done according to the scoring guidelines of each questionnaire.

Scoring and Statistical Analysis

The data were analyzed using linear regression analysis to determine the predictive relationship between dark personality traits and online gaming addiction among Pakistani students. Descriptive statistics, including means (M) and standard deviations (SD), were calculated to summarize the demographic characteristics of the participants, with an average age of 16.78 years (SD = 1.66). Linear regression analysis was employed to evaluate the extent to which dark personality traits predict gaming addiction. The findings revealed a significant predictive relationship, indicating that students with higher levels of dark personality traits exhibited higher tendencies toward online gaming addiction. Additionally, independent sample t-tests were conducted to compare the levels of dark personality traits and gaming addiction between students who play online games for extended durations and those who play for shorter periods. Results showed a statistically significant difference, suggesting that higher engagement in online gaming is associated with elevated levels of dark personality traits and gaming addiction. All analyses were performed using SPSS software, with a significance level set at $p < 0.05$.

RESULTS

Table 1

Descriptive Statistics of Participants (N=264)

Variables	Categories	*F*	*%*	*M*	*SD*	*Range*
Age	10-14 Years	37	14.0	16.78	1.66	12-18
	14-18 Years	227	86.0			
Gender	Female	55	20.8			
	Male	209	79.2			
Education	Middle	17	6.4			
	Matric	45	17.0			
	Intermediate	202	76.5			
Institute Type	Government	137	51.9			
	Private	127	48.1			
Game	Call of Duty	32	12.1			
	DOTA	25	9.5			
	PUBG	207	78.4			
Hours	1-3/day	125	47.3			
	4-12/day	139	52.7			

Table 1 shows descriptive statistics of study participants. Age is comprised of M=16.78, SD=1.66 and Range=12-18 years.

Table 2

Psychometric Properties of Dark Personality Traits (MAC, PP, NAR, SAD) and Online Gaming Addiction (N=264)

Variables	No. of items	*a*	*M*	*SD*	Range		*Skew.*	*Kurt.*
					Potential	Actual		
Online Gaming Addiction	12	0.86	33.84	10.97	12-60	12-56	.127	-.81
Dark Personality Traits								
MAC	4	0.75	11.20	4.02	4-36	4-35	.14	-.63
PP	4	0.74	12.10	4.32	4-36	4-35	-.09	-1.10
NAR	4	0.81	10.55	3.91	4-36	4-20	0.36	-.48
SAD	10	0.80	8.13	1.27	10-10	10-8	-.08	-.74

Note. MAC=Machiavellianism, PP=Psychopathy, NAR= Narcissism, SAD=Sadism ESC=Escape, COP=Coping, FAN=Fantasy, SD=Skill Developmental, COM=Competition, SOC=Socialization and REC=Recreation.

Table 3.1

Linear Regression Analysis Statistics of Dark Personality Traits as Predictor of Online Gaming Addiction among Pakistani Students (N=264)

Model	*R*	R^2	*Adj.* R^2	*Sum of Squares*	*F*	*Mean Square*	*F*	*p*
Dark Personality Traits	0.99	.98	.98	31335.39	1.00	31335.39	22981.26	.000

Dependent Variable: Online Gaming Addiction
Predictors: (Constant), Dark Personality Traits

Findings show (Table. 3) there is significant predictive relationship between dark personality traits and online gaming addiction among Pakistani students [R^2=.98; F =22981.26, p< 0.01].

Table 3.2

Linear Regression Analysis Statistics of Dark Personality Traits as Predictor of Online Gaming Addiction among Pakistani Students (N=264)

Model	*Unstandardized Coefficients*		*Standardized Coefficients*	*t*	*p*
	B	*SE*	*β*		
(Constant)					
Dark Personality Traits	-6.25	.27		-22.80	.000
	.95	.006	.99	151.59	.000

Table 4

Statistics of Independent t-test Comparing Means of Dark Personality Traits and Online Gaming Addiction according to Daily Online Game Playing Hours (N=264)

Variables	*Game Play Hours/Day*	*N*	*M*	*SD*	*t*	*p*
Online Gaming Addiction	1-3	125	37.30	10.23	-6.82	.000
	4-12	139	46.17	10.82		
Dark Personality Traits	1-3	125	29.36	-6.81	-.10	.000
	4-12	139	37.87	-6.82		

The finding shows (Table. 4) there is significant difference in dark personality traits and online gaming addiction among Pakistani students who play more online games (*M=29.36, 37.30; SD=-6.81, 10.23)* as compare to those who play less online games *(M=37.87, 46.17; SD=-6.82, 10.82).*

DISCUSSION

In Pakistan, majority of young population plays online games specifically PUBG. However, these online games have the tendency towards becoming a habit. Therefore; they also lead an individual towards risky behavior and lack of self-control. Thus, the current study utilized the habit-forming propensities i.e., personality traits to play online games to address those mechanisms in online game players that add to gentle types of online gaming addiction (Kuss & Griffiths, 2012).

Online games have gained more popularity as distractions from daily living among youngsters now days. The online gaming addiction (OGA) is characterized as "obligatory and extreme utilization of video games which leads to social and emotional issues, among players, regardless of the issues, unable to control excessive use of online gaming". The massive technology and media use and its inescapable presence in today's world has made it almost impossible for all to remain away from online gaming, thus becoming more prevalent among adolescents (Payam & Mirzaeidoostan, 2019).

The findings of the current study suggested that online players personalities are linked with online gaming addiction. Online players with dark personality traits are more vulnerable to develop the online gaming habits because they feel satisfaction by self-selecting environment to fulfill their real-life psycho-social needs. It is observed that online players scoring high on dark personality traits are expected to have problematic social relationships, and they might not get admiration and achievement from their real life. Consequently they have this tendency to mistreat other players and teammates and manipulate them in a way so as to gain their own benefits and fulfill their own purposes. . This may lead them to look for different options where they can satisfy their ego-reinforcement needs (Raskin & Hall, 1979).

Online games are platforms that fascinate the online players to feel special and admired by other. The online players with sadistic tendencies play online games to satisfy their need and exercise their fantasies of humiliating, killing, and hurting others by playing violent games because they find it difficult to fulfill their needs in real world. While those online players with psychopathy trait would try and make more risky moves by breaking rules while playing online games and not care about what their teammates think. The players with the trait of machiavellianism are self-centered and ambitious and feel satisfaction to deceive, manipulate, and exploit other co-players through online gaming. The

dark personality traits linked with offline socially undesirable behavior to get pleasure and satisfaction by online gaming (Plouffe et al., 2017).

Online games are considered to be as entertainment and leisure activity among adolescents and adults. Playing online games can be helpful for the youngsters and but excessive use of it can lead to physical as well as psychological effects like online gaming addiction. So, the current study suggested that those players who play spent more time 4-12 hours daily on online games are more vulnerable to develop dark personality traits and online gaming addiction. Excessive online gaming stimulates anger, low tolerance level, violence, and lack of empathy, deception, manipulation, and humiliation among youngsters. Online players get addicted to online games because they have no ending. The online players become addictive and can adopt dark personality traits by becoming an online character which they want in real life. They started remaining preoccupied with thoughts of success or passing game stage and anticipation of the next session. As escape from reality online players establish relationships with other online players as they fantasize to be in real life, they started to enjoy the online character and get satisfaction by dominating, hurting, killing in online games (Zahra et al., 2019).

Conclusion

The current study shows that compulsive online gaming is growing into a clinical issue in developing nations like Pakistan. The current study revealed that online gaming addiction is a mind-boggling issue among Pakistani students where social, biological, and personality factors all contribute. While the present study is a unique one highlighting the concerning prevalence and importance of these issues, which is though a hobby but developing as a psychological among youth. This not only sheds light on how media and excessive use of technology hampers an individual's psychological functioning but also becomes the cause of many social and ethical issues. The population under investigation was Pakistani adolescents who were school and college students. The predictive association between dark personality traits and online gaming addiction was examined along with the influence of excessive online gaming on dark personality traits. The outcomes of the present study recommend that differences in personality traits and online gaming can aid in identifying the groups with various degrees of gaming addiction among adolescents. These distinctions of personality structure further suggest that playing online video games in turn influence players in different ways. Therefore, the clinicians and analysts must consider these traits in devising the strategies for treatment, developing new treatment alternatives

and development and standardization of assessment and evaluation instruments. Future studies must cater to heterogeneous samples across different ages and genders and consider treatment outcomes as a variable for further exploration.

Limitations and Recommendations

Just like every study, the present study also has some limitations that can be catered in future studies. First and foremost is that the data were collected through self-report questionnaires in a convenience sample, thus owing its own limitations and biases. Secondly, the study sample comprised of school going adolescents from only one city of Pakistan, thereby rendering the generalizability of the results as limited. Since the present study used a cross-sectional research design, it is suggested that future studies utilize longitudinal research design so as to understand the other potential risk factor involved in development of dark personality traits and course of treatment so that potential comorbidities can be identified. Moreover, the future research must also expand the sample in terms of collecting data from different cities and across different age groups of adolescents and young adults of Pakistan.

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