



RESEARCH PAPER

Predictive role of Personality Traits and Self Control in Mental Health and Academic Achievement among Adolescents Playing Online Games

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ABSTRACT

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The present research explores the effect of online gaming on personality traits, self-control, mental health and academic achievement. The population of the study consisted of the adolescents who play online games. A sample of 308 ($N=308$) adolescents were selected by using purposive sampling technique from different areas of Punjab. Big Five Personality Inventory (John & Srivastava, 1999). Self-control scale (Tangney et al. 2004), and Mental Health Questionnaire (Dubey & Singh, 2016) were used to collect the data in current research. The results of correlation showed that personality traits extraversion, agreeableness conscientiousness, and openness were significantly positively correlated with self-control, mental health, and academic achievement and neuroticism was negatively but significantly related to self-control, mental health, and academic achievement. The results of multiple regression analysis exhibited that personality traits (extraversion, agreeableness, conscientiousness, and openness) and self-control were confirmed to be significant predictors of mental health and Personality traits (extraversion, neuroticism, openness) and self-control were shown to be significant predictors of academic achievement.

Introduction

An online game is a game played either partly or mostly over the internet or some other available computer network. These games feature PCs, consoles and handheld devices in a wide variety of different formats, from shooters tactics and huge multiplayer online role-playing games. These mobile games effects the

individual both psychologically and physically. Adolescents are most effective age group of online games. Playing online games increase the aggression and frustration level with low self-control lead to poor mental health. Adolescents spend most of their time on playing online games and this boost the level of procrastination and cause low academic achievement. Playing online games increase the exposure of the screen with this reliance on video games disrupts normal sleep habits and leads to less overall sleep, longer sleep periods and more sleep interruptions (Hale & Guan, 2015; Higuchi et al. 2005; Hysing et al. 2015).

Excessive playing video games can be short-term or long-term in adolescents with emotional and neurological consequences (Higuchi et al. 2005; Meng et al. 2015; Spada&Caselli 2017). Positive relationships between Online Gaming and mental health issues have also been identified in previous studies (Liu et al. 2018; Wu et al. 2018). The essential video game behavior predictors of individual biological and psychological variables highlighted by Wood (2008).

The personality consists of integrated psychological features and structures that have an effect on one person's relationship with the intra-psychic, physical and social conditions, and on adaptations (Larsen&Buss, 2005).Every single person has a unique personality shaped by the interaction of different traits. The basic principle of traits is to consider and evaluate these individual characteristics of personality (Feldman, 2005).

An overall conceptual structure for these five traits in personality psychology should incorporate all the research results and theory. The Big Five traits are also called the "Five Factor Model" or FFM. McCrae also concluded that the five main characteristics are also global. Resources from over 50 different cultures have shown that personalities can be represented beautifully through the broad five features suggest that neuroticism is connected to the management of disagreeable events such as concern and dejection. It is the propensity for negative emotions, such as anger and depression (Fiske, 1949; Smith, 1967; Goldberg, 1981;McCrae& Costa, 1987).

Self-control can be viewed both as an individual trait factor and as a contextual factor which may vary through different tasks, as the level of difficulty of tasks changes as a result of resisting one's impulses and as the temporal sequence of tasks require sequential use of self-control. In addition to anger management and binge eating, self-control has been associated with moral standards and integrity. Recent self-control studies focused on the impact of self-control on fraud and lying actions of both middle and high school students and found that both low self-control and short-term self-control are linked to fraud and lying (Mead et. al. 2009).

Consistent with other theories, self-control refers to the human capacity to suppress immediate thoughts, attempts and desires in pursuit of more or less global or long term targets. Self-control, therefore, is a kind of auto regulation (Fujita, 2011).In 2011, Gatab et al. conducted research and explained mental health as a

situation where psychological maturity simply is identified as the definition and situation for the perception and acquirement of knowledge and maturity that is simply contrary to full efficacy, personal productivity and satisfaction of social interaction. In all statistics including psychological, physical and social experiences, it also includes constructive thoughts about the health behavior (Gatab, 2011).

Academic achievement is generally expressed in tertiary or undergraduate universities as the grade-point average (GPA) mean marks applied to weighted courses that lead to final degree evaluation. The GPA is the primary selection criterion and predictive criterion for postgraduate work and employment (Strenze, 2007).

Personality is believed to have a significant effect on your mental health. Second, by indirectly influencing people's objective wellbeing, for example by influencing personality's physiological reactions to stress. Second, personality characteristics determine the psychoactive offenders' objective health status and are risk factors (Felitti et al. 1998 & Kodl et al. 2004).

A large number of studies show that academic achievement and conscientiousness are related in a positive way (Komarraju et. al. 2009). This attribute is higher than intelligence factors in (Duckworth & Seligman, 2005). Extroversion is one of the most important variables of personality with academic success. Studies also show that openness is related to academic achievement (Paunonen & Ashton, 2001).

Multiply academic success is established: research competencies and learning policies that are separate from self-control predict school performance (Crede & Kuncel, 2008, Hattie et al. 1996). Emotional factors as mathematical anxiety are also important (Foley et al. 2017) and particularly demanding objectives need to be accomplished over months and years (Eskreis-Winkler et. al. 2016b).

Hypotheses

1. There would be a significant relationship between personality traits, self-control, mental health and academic achievement among adolescents playing online games.
2. Mental health and academic achievement would be significant predicted by personality traits and self-control of adolescents playing online games.

Material and Methods

Participant

Adolescents playing video games were the population of the sample. By use of purposive sampling methods from various areas of Punjab, a sample of 308

(N=308) adolescents were selected. The sample was further divided into two parts: 174 men and 134 were women. In the present research, the design of correlational research was used.

Instruments

Demographic Data Sheet

Demographic data sheet was to be established, social economic status, family life and climate.

Big Five Personality Inventory

44-item inventory that measures an individual in terms of personality's Big Five Factors (dimensions). Aspect is divided into the facets of personality. Big Five Dimensions (Factors) are Extraversion, Agreeableness, Conscientiousness, Neuroticism and openness (John & Srivastava, 1999). The good range of reliabilities analysis indicate that Cronbach's α = Neuroticism, .90; Extraversion, .89; Agreeableness, .86; Conscientiousness, .90 and openness, .90.

Self-Control Scale

The self-control scale in this study was reorganized from the scale that Gottfredson and Hirschi originally developed (Cronbach's α , 0.74). There were a total of 20 questions, ten reflecting the degree of long-term satisfaction and the other 10 reflecting the degree of immediate satisfaction. A five point Likert scale listed all 20 objects by respondents. In determining the total score, the last 10 items (point number 11-20) were reversed. A higher overall score indicates a higher self-control level (Tangney et. al. 2004).

Mental Health Questionnaire

Mental health questionnaire is developed by Dubey and Singh (2016) containing 19 items. This scale is developed to measure the mental health of the individuals in which responded have to rate their feeling regarding give questions on a 5 point likert form strongly disagree as 0 and strongly agree as 4. The results of reliability analysis indicate that Cronbach's α = .826

Academic Achievement

Academic achievement here is calculated as percentage of last class result of respondents. Same idea was endorsed by Khan et al. (2012) in their research and Ali and colleagues (2016). Both of these studies considered percentage of last class result as an academic achievement. Therefore, in this research academic achievement was measured through percentage/GPA of last class result.

Procedure

First of all permission for the scale was taken from the original authors. Individual consent was obtained prior to data collection from the participants. This was accompanied by ethical and legal consideration. Due to pandemic situation of Corona virus, the data were collected online through Google form. All study questionnaire with informed consent and demographic sheet were added to Google form and instructions were also given to respondents both verbally and written form. First instructions were given to respondent about the purpose of research and then questionnaires were delivered to respondents. Enough time was given to respondent to response on questionnaires. They offered withdraw opportunity at any time during data collection. After the desired level of sample, the data collection process was stopped and file of data sheet in MS Excel was downloaded from Google form after that the file was converted in two SPSS and necessary codes were added according to demographic sheet such as in gender 1 was labeled for male and 2 was added for female to convert the data into numeric values, same this activity was performed in questionnaires to convert the response from strongly agree to assigned digit values according to the scoring criteria of each questionnaire. After that data were analyzed through SPSS.

Results and Discussion

Table 1
Frequency of Demographic Variables (N=308)

Respondent's Characteristics		<i>f (%)</i>	<i>M (SD)</i>
Age			17.26 (1.75)
Gender	Male	174 (56.5)	
	Female	134 (43.5)	
Family System	Nuclear System	140 (45.5)	
	Joint System	168 (54.5)	
Which type of online game you are playing	8 Ball Pool	34 (11.0)	
	Candy Crash	74 (24.0)	
	Fortnite	20 (6.5)	
	Ludu Star	92 (29.9)	
	PUBG	88 (28.6)	

The results of table (1) indicated that the average age of respondents was (Mean = 17.26 with SD = 1.75). Whereas in gender, 174 (56.5%) were male participated in this research and 134 (43.5%) were female participated in this research. Meanwhile in family system, 140 (45.5%) were participated from nuclear family and 168 (54.5%) were participated from joint family in this research. However, on the question of "Which type of online game you are playing", respondents respond; 34 (11.0%) respondents were played 8 Ball Pool online game, 74 (24.0%) respondents were played Candy Crash online game, 20 (6.5%)

respondents were played Fortine online game, 92 (29.9%) respondents were played Ludu Star online game and 88 (28.6%) respondents were played PUBG online game.

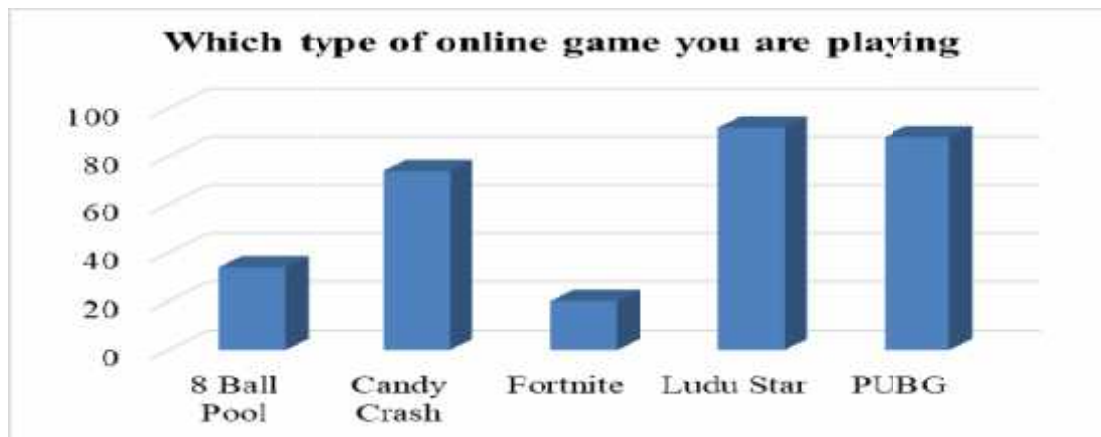


Figure 1

Frequency Distribution of Which type of online game you are playing(N=308)

On the question of “Which type of online game you are playing”, respondents respond; 34 (11.0%) respondents were played 8 Ball Pool online game, 74 (24.0%) respondents were played Candy Crash online game, 20 (6.5%) respondents were played Fortine online game, 92 (29.9%) respondents were played Ludu Star online game and 88 (28.6%) respondents were played PUBG online game.

Table 2
Psychometric Statistics and Descriptive Statistics (N=308)

Variables	M	SD	a	Range		Skew	Kurt
				Minimum	Maximum		
Extraversion	25.90	7.20	.72	8	40	-.76	.34
Agreeableness	29.61	6.73	.71	10	45	-.47	-.39
Conscientiousness	29.51	5.20	.76	14	45	.03	.04
Neuroticism	25.63	6.81	.70	8	40	-.33	-.19
Openness	36.71	7.89	.75	10	50	-.58	-.16
Self-Control	32.69	8.18	.80	10	50	-1.09	.91
Mental Health	63.95	10.25	.74	19	95	.22	.96
Academic Achievement	77.52	10.66	-	50	99	-.25	-.36

Skew = Skewness; Kurt = Kurtosis

The result in table (2) confirmed that the overall respondents showed that they have high level of openness personality trait with high level of self-control and good mental health. While in the internal consistency (reliability analysis) of all questionnaires from this research showed in adequate range of Cronbach’s alpha (.70 to .80). Whereas, the values and skewness and kurtosis were also revealed acceptable range for the normality of data.

Table 3
Inter-Correlation in Personality Traits, Self-Control, Mental Health and Academic Achievement (N=308)

	1	2	3	4	5	6	7	8
1.Extraversion	-	.73**	.54**	-.33**	.39**	.41**	.52**	.34**
2.Agreeableness		-	.66**	-.22**	.44**	.36**	.55**	.29**
3.Conscientiousness			-	-.15**	.44**	.29**	.52**	.26**
4.Neuroticism				-	-.24**	-.45**	-.21**	-.20**
5.Openness					-	.32**	.43**	.29**
6.Self-Control						-	.32**	.14*
7.Mental Health							-	.21**
8.Academic Achievement								-

**p <.01; *p <.05

The results in table 3 showed that extraversion (personality trait) was positively as well significantly correlated with agreeableness ($r = .73$), conscientiousness ($r = .54$), openness ($r = .39$), self-control ($r = .41$), mental health ($r = .52$) and academic achievement ($r = .34$). While, extraversion was negatively but significantly correlated with neuroticism ($r = -.33$). Whereas, agreeableness (personality trait) was positively as well significantly correlated with conscientiousness ($r = .66$), openness ($r = .44$), self-control ($r = .36$), mental health ($r = .55$) and academic achievement ($r = .29$). Meanwhile, agreeableness was negatively but significantly correlated with neuroticism ($r = -.22$). However, conscientiousness (personality trait) was positively as well significantly correlated with openness ($r = .44$), self-control ($r = .29$), mental health ($r = .52$) and academic achievement ($r = .26$). Meanwhile, conscientiousness was negatively but significantly correlated with neuroticism ($r = -.15$). Though, neuroticism (personality trait) was negatively but significantly correlated with openness ($r = -.24$), self-control ($r = -.45$), mental health ($r = -.21$) and academic achievement ($r = -.20$). Although, openness (personality trait) was positively as well significantly correlated with self-control ($r = .32$), mental health ($r = .43$) and academic achievement ($r = .29$). While, self-control was positively as well significantly correlated with mental health ($r = .32$) and academic achievement ($r = .14$). Finally, mental health was positively as well significantly correlated with and academic achievement ($r = .21$).

Table 4
For the Predict of Personality Traits and Self-control in Mental Health (N=308)

Predictors	Mental Health		
	B	β	95% CI
Constant	26.54**		[18.10, 34.98]
Extraversion	.27**	.19	[.07, .46]
Agreeableness	.26**	.17	[.04, .49]
Conscientiousness	.43**	.22	[.19, .66]
Neuroticism	-.01	-.01	[-.16, .14]
Openness	.21**	.16	[.08, .35]

Self-Control	.08*	.07	[.05, .22]
R ²	.40		
F	33.07**		

*p <.05; **p <.01; B = Unstandardized Coefficients; β =Standardized Coefficients; CI = Confidence Interval

The results of table (4) exhibited that personality traits (big five) and self-control were confirmed to be significant predictors of mental health and contribute overall 40% of variance (R² = .40). Meanwhile, extraversion (β = .19), agreeableness (β = .17), conscientiousness (β = .22), openness (β = .16) and self-control (β = .07) revealed significant predictors in mental health of respondents.

Table 5
For the Predict of Personality Traits and Self-control in Academic Achievement (N=308)

Predictors	<i>Academic Achievement</i>		
	B	β	95% CI
Constant	64.05		[53.66, 74.45]
Extraversion	.33**	.23	[.09, .57]
Agreeableness	.03	.02	[-.25, .30]
Conscientiousness	.12	.06	[-.17, .41]
Neuroticism	-.17*	-.11	[-.36, -.02]
Openness	.22**	.17	[.06, .39]
Self-Control	.10*	.08	[.06, .26]
R ²	.16		
F	9.24**		

*p <.05; **p <.01; B = Unstandardized Coefficients; β =Standardized Coefficients; CI = Confidence Interval

The results of table (5) exhibited that personality traits (big five) and self-control were confirmed to be significant predictors of academic achievement and contribute overall 16% of variance (R² = .16) in academic achievement. Meanwhile, extraversion (β = .23), neuroticism (β = -.11), openness (β = .17) and self-control (β = .08) revealed significant predictors in academic achievement of respondents.

Discussion

The aim of this research is to measure the personality traits, self-control, mental health and academic achievement among adolescents playing online games. Teenagers playing video games will be the population of the sample. By use of purposive sampling methods from various areas of Punjab, a sample of 308 (N=308) adolescents could be selected. The sample is divided into two parts: 174 are men and 134 are women. This study involved teenage people from various areas who play video games online. In the current study, both men and women were included. The present research involved all adolescents (nuclear and shared family structures).

In the research, adults are excluded. Adolescents from various areas not playing video games have also not been included in the sample. The present research has omitted adolescents with any medical or psychological condition.

Three questionnaires were used in this research; Big five Personality Inventory, The Self-Control Scale, The Mental Health Questionnaire. While academic achievement calculated as percentage of last class result of respondents.

The results of table (4.1) indicated that the average age of respondents was (Mean = 17.26 with SD = 1.75). Whereas in gender, 174 (56.5%) were male participated in this research and 134 (43.5%) were female participated in this research. Meanwhile in family system, 140 (45.5%) were participated from nuclear family and 168 (54.5%) were participated from joint family in this research. However, on the question of "Which type of online game you are playing", respondents respond; 37 (11.0%) respondents were played 8 Ball Pool online game, 74 (24.0%) respondents were played Candy Crash online game, 20 (6.5%) respondents were played Fortine online game, 92 (29.9%) respondents were played Ludu Star online game and 88 (28.6%) respondents were played PUBG online game.

It was confirmed that the overall respondents showed that they have high level of openness personality trait with high level of self-control and good mental health. While in the internal consistency (reliability analysis) of all questionnaires from this research showed in adequate range of Cronbach's alpha (.70 to .80). Whereas, the values, skewness and kurtosis were also revealed acceptable range for the normality of data.

The results of correlation indicated for Hypothesis 1 that extraversion (personality trait) was positively as well significantly correlated with agreeableness, conscientiousness, openness, self-control, mental health and academic achievement. While, extraversion was negatively but significantly correlated with neuroticism. Whereas, agreeableness (personality trait) was positively as well significantly correlated with conscientiousness, openness, self-control, mental health and academic achievement. Meanwhile, agreeableness was negatively but significantly correlated with neuroticism. However, conscientiousness (personality trait) was positively as well significantly correlated with openness, self-control, mental health and academic achievement. Meanwhile, conscientiousness was negatively but significantly correlated with neuroticism. Though, neuroticism (personality trait) was negatively but significantly correlated with openness, self-control, mental health and academic achievement. Although, openness (personality trait) was positively as well as significantly correlated with self-control, mental health and academic achievement. While, self-control was positively as well significantly correlated with mental health and academic achievement. Finally, mental health was positively as well significantly correlated with and academic achievement. Past studies have shown that these various personality traits are closely linked to aspects of mental health.

Whereas, previous studies have shown that characteristics contribute to academic performance. Bakar and Herng (2018) have shown that the academic success of students is related to their attractiveness, sensitivity, extraversion, and neuroticism. Further research has shown that students are more able to attain academic results with the character of chance, extraversion and conscience and without persistent emotional problems. In other words, unique characteristics such as extraversion, conscientiousness and the mental wellbeing of students must be addressed in order to enhance the student's achievement.

Caspi et al. (2005) sheds light on the mechanisms that may explain the relationship between personality and academic achievement; they suggest the relationship between personality and academic achievement can be charming; i.e. people prefer environments compatible with their personality; Some studies have shown that academic performance has been good in terms of openness to learning, quality and extroversion and negative neuroticism (Laidra et. al . 2007; Lounsbury et al. 2003a). The results of the present study are in line with above reposted past researches, so this hypothesis is accepted.

The results of multiple regression analysis revealed for Hypothesis 2 that found personality traits (big five) and self-control were confirmed to be significant predictors of mental health. Meanwhile, extraversion ($\beta = .19$), agreeableness ($\beta = .17$), conscientiousness ($\beta = .22$), openness ($\beta = .16$) and self-control ($\beta = .07$) revealed significant predictors in mental health of respondents. In 2013, Haghtrangbar et. al. reported that people with high levels of conscientiousness and agreeableness have better mental health. The relationship between the markers of mental health and personality, based on Big Five, was different. In neurotics, for example, concepts like pessimism and negative emotion have been closely linked to this cause, leading to negative perceptions of the health situation in individuals. Higher extraversion levels have, however, linked positive emotional experiences: better public health assessment, increased physical fitness and greater satisfaction with life. There were also high levels of understanding with a higher degree of public health and mental wellbeing. The versatility and alignment of public health measures received less consideration compared to the above three factors. The results of the present study are same as above reposted past researches, so this hypothesis is accepted.

Additionally, the results of multiple regression showed the results of Hypothesis 2 that confirmed personality traits (big five) and self-control were confirmed to be significant predictors of academic achievement. Meanwhile, extraversion ($\beta = .23$), neuroticism ($\beta = -.11$), openness ($\beta = .17$) and self-control ($\beta = .08$) revealed significant predictors in academic achievement of respondents. Some studies have shown that openness is related to academic achievement (Paunonen & Ashton, 2001). The strong, weak association of those variables was stated by Duff et al. (2004). As friendly people are extremely cooperative, helpful and able to cooperate efficiently with others, there are no far-reaching positive connections between compassion and academic achievement. The more gratifying students seem to have higher graduates' and therefore higher academic achievements (Furnham, et

al. 2006). The results of this study are partially significant, so this hypothesis is partially accepted.

Conclusion

The current study was planned to investigate of the prediction of personality traits and self-control of young people who play online games on mental health and academic achievement. In total 308 ($N=308$) adolescents could be selected with range of 174 are male and 134 are female. The results of reliability analysis reported all the scale were reliable and were suitable for this research. Relationship found that personality traits such as that extraversion, agreeableness, conscientiousness, openness were significantly positively correlated with self-control, mental health, and academic achievement. Whereas, neuroticism as personality traits revealed negative but significant correlated with extraversion, agreeableness, conscientiousness, openness, self-control, mental health, and academic achievement. Self-control also stand positive significant linked with mental health and academic achievement. In multiple regression analysis, extraversion, agreeableness, conscientiousness, openness and self-control found significant predictor of mental health and academic achievement.

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