

The Relationship between College Students' Online Game Addiction, Family Function and Self-Control

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How to cite this paper: Zhou, X.H. and Xing, J. (2021) The Relationship between College Students' Online Game Addiction, Family Function and Self-Control. *Health*, 13, 910-919.
<https://doi.org/10.4236/health.2021.139070>

Received: July 29, 2021

Accepted: September 6, 2021

Published: September 9, 2021

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Abstract

Objective: To study the status of online game addiction, self-control ability and family function, analyze the influence factors and the relationship between them. **Methods:** The questionnaire of online game addiction, family function and self-control ability was used to investigate some college students. **Results:** 1) The detection rate of college students' online game addiction is 40%. There are significant differences in sex, grade and only child in online game addiction. 2) There are significant differences in self-control ability and family function between online game addicts and non-addicts. 3) Self-control ability and family function have a significant predictive effect on online game addiction. **Conclusion:** College students' online game addiction is affected by their self-control ability and family function, and it can be alleviated by improving their self-control ability and family function.

Keywords

College Students, Online Game Addiction, Family Function, Self-Control

1. Introduction

The network connects all kinds of information together through a virtual platform, which has changed people's life style and affected the development direction of human society. With the continuous progress of network technology, the combination of "network" and "game" has brought a new industry, and the types of online games are becoming richer and richer, which has brought many negative effects to the development of the Internet. College students are addicted to playing online games, and there are more and more incidents that damage their study and physical and mental health.

In 1994, American psychiatrist Ivan Goldberg discovered the phenomenon of “Internet Addiction” and put forward the concept of “Internet Addiction Disorder” (IAD), which refers to the individual psychological and social damage caused by excessive Internet use [1]. Due to the long-term investment of online games to online game addiction caused by personal online games in pathological and disorderly behavior out of control, and enable people to get the virtual on the body and mind and happy experience, and then will develop and use tolerance, withdrawal, and compulsive behavior associated with online game, and lead to the individual psychological and social barriers [2]. The causes of online game addiction include personality, environment, society and game itself. The results show that the tendency of addiction to online games is significantly related to the low overall family function, the insignificant organizational function and the autocratic control of the members [3]. Self-control is the ability of an individual to change his or her behavior, which occurs when emotions, desires, etc., occur. In order to meet social expectations and long-term goals, [4] there is a significant negative correlation between college students’ self-control and over-use of the Internet. Self-control plays an important role in regulating the motivation for self-control in Internet use and Internet abuse [5].

In recent years, most researchers believe that the core factor affecting online game addiction is self-control ability. And the previous studies are mostly from a certain aspect, the combination of internal and external factors are few. Therefore, this study aims to investigate the role of family function in online game addiction, and introduce the internal psychological variable self-control, explore its relationship with family function and online game addiction, and find out the targeted measures to interfere with college students’ online game addiction.

2. Objects and Methods

2.1. Object of Study

650 college students were randomly selected as the subjects, 650 questionnaires were sent out and 636 questionnaires were collected with a recovery rate of 97.8%, among which 19 invalid questionnaires needed to be eliminated. The final effective questionnaires were 617, with an effective rate of 94.9%.

2.2. Research Tool

2.2.1. The Questionnaire of Online Game Addiction

The questionnaire of online game addiction [6] was developed by Zhou Yejin and Yang Wenjiao. There were 8 items in total and Likert 5-point scoring method was adopted. The higher the score, the more obvious the tendency of Internet addiction. The internal consistency coefficient of this study was 0.90, and the coefficient of the online game addiction subscale was 0.89.

2.2.2. The Sense of Self-Control Scale

Tan Shuhua *et al.* revised the Sense of Self-Control Scale [7], which contains 5 dimensions and uses a 5-point score. The higher the score, the better the self-control

ability. In this study, the Cronbach's α coefficient of the total scale is 0.940, and the Cronbach's α of each subscale is between 0.70 and 0.90.

2.2.3. The Family Function Scale (FAD)

The Family Function Scale (FAD), [8] developed by Epstein, has seven subscales and uses a four-point scale. The internal consistency coefficient in this study was 0.834, and the reliability of each subscale was between 0.75 and 0.83.

2.3. Statistical Approach

In this study, SPSS 23.0 was used for data collection, t-test, analysis of variance, regression analysis, etc.

3. Research Result

3.1. Status of Internet Addiction in College Students

3.1.1. General Situation of Internet Addiction in College Students

According to Chinese scholar Zhou Yejin *et al.*'s rating criteria for college students' Internet addiction, the higher the score, the more obvious the tendency of Internet addiction. The full score of the online game addiction subscale is 40 points, and if the score is more than 25 points, the subject can be determined to have the tendency of online game addiction.

The study found that among 617 participants, 247 of them were addicted to online games, accounting for 40% of the total. 179 of them are male, accounting for 29% of the total population; 68 female students, accounting for 11% of the total population; 15% junior, 11% sophomore, 10% senior, and 4% freshman; Only children accounted for 29%, while non-only children accounted for 11%. In the group of college students who are addicted to online games, the proportion of male students is much higher than that of female students. The proportion of junior is the highest, followed by sophomore and senior, and the proportion of freshman is the lowest. The proportion of only children is higher than that of non-only children.

3.1.2. Comparison of Internet Game Addiction among College Students with Different Statistical Characteristics

1) Comparison of college students' tendency of online game addiction in gender

In order to further test the specific gender differences of college students' online game addiction, the independent sample t-test of online game addiction and gender factors is conducted. The results (**Table 1**) show that there is a significant difference in the tendency of college students' online game addiction in terms of gender factors. The average of male students is significantly higher than that of female students.

2) The comparison of college students' tendency of online game addiction in grade

In order to test whether there is a specific difference between college students' online game addiction tendency in different grades, one-way ANOVA was used

Table 1. Comparison of Internet game addiction among college students with different statistical characteristics.

Gender	Mean	Mean	<i>t</i>	<i>p</i>
Male	22.71	7.230	4.190***	0.000
Female	20.24	6.788		

Annotation: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

to do variance analysis of online game addiction scores and grade factors. The results showed (Table 2) that college students' online game addiction has a very significant difference in grade factors.

3) The comparison of college students' tendency of online game addiction in the only child factor

For further inspection of college students' online game addiction tendency in the concrete differences on the level of the one-child, the online game addiction scale scores and only-child factor to carry on the t test, the results showed that (Table 3), the college students' online game addiction tendency significant differences on the only-child factor, including the one-child above not only children.

3.2. Differences of Self-Control between College Students Who Are Addicted to Online Games and Those Who Are Not Addicted

According to the data in Table 4, there are significant differences between college students who are addicted to online games and those who are not addicted in the total score of self-control ability. There are significant differences in impulse control, health habits, resistance to temptation, focus on work and abstinence in entertainment. This indicates that the self-control ability and various abilities of college students addicted to online games are lower than those of non-addicts, and the addiction of online games has a certain influence on college students' adaptability, adjustment ability, interpersonal relationship and learning performance.

3.3. Family Function Differences between College Students Who Are Addicted to Online Games and Those Who Are Not Addicted to Online Games

Table 5 shows that there are significant differences in family functions between college students who are addicted to online games and those who are not addicted to online games. There are significant differences in problem solving, communication, role, emotional response, emotional intervention, behavior control and overall function. This indicates that the family of college students addicted to online games has lower problem-solving ability, information communication ability of family members, behavior mode of family function, emotional response of family members to stimulation, the degree of care and attention of family members to each other, and behavior control mode than that of non-addicted college students.

Table 2. The comparison of college students' tendency of online game addiction in grade.

Source of variation	Quadratic sum	DOF	Mean square	<i>f</i>	<i>p</i>
Interblock	3053.450	3	1017.817	21.843***	0.000
Intra-class	28,563.629	613	46.596		
Totality	31,617.079	616			

Annotation: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

Table 3. The comparison of college students' tendency of online game addiction in the only child factor.

ITEM	Mean	SD	<i>t</i>	<i>p</i>
only-child	23.32	7.162	2.609**	0.009
not only children	20.72	7.066		

Annotation: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

Table 4. Differences of self-control between college students who are addicted to online games and those who are not addicted.

ITEM	Addicted to online games (M ± SD)	Not addicted to online games (M ± SD)	<i>t</i>	<i>p</i>
Self-control	48.26 ± 14.08	53.06 ± 17.0	-3.729***	0.000
Impulse control	15.05 ± 5.62	16.95 ± 6.37	-3.873***	0.000
Health habits	8.15 ± 2.78	9.07 ± 2.95	-3.902***	0.000
Resistance to temptation	9.82 ± 3.00	10.52 ± 3.62	-2.529*	0.010
Focus on work	7.66 ± 2.42	8.25 ± 3.05	-2.579**	0.008
Abstinence in entertainment	7.58 ± 2.66	8.28 ± 3.12	-2.929**	0.003

Annotation: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

Table 5. Family function differences between college students who are addicted to online games and those who are not addicted to online games.

ITEM	Addicted to online games (M ± SD)	Not addicted to online games (M ± SD)	<i>t</i>	<i>p</i>
Problem solving	16.36 ± 2.22	17.25 ± 2.52	-5.604***	0.000
Communication	27.26 ± 3.94	28.07 ± 3.74	-2.611**	0.009
Role	31.49 ± 3.60	34.22 ± 3.44	-9.575***	0.000
Emotional response	18.17 ± 3.98	19.11 ± 3.17	-3.250**	0.002
Emotional intervention	18.99 ± 4.10	21.17 ± 3.23	-7.389***	0.000
Behavior control	25.60 ± 3.99	27.83 ± 3.72	-7.151***	0.000
Overall function	34.15 ± 3.01	36.96 ± 3.24	-10.987***	0.000

Annotation: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

3.4. Regression Analysis of Self-Control and Family Function on Online Game Addiction

In order to further reveal the influence of self-control ability and family function on online game addiction, online game addiction was taken as the dependent variable and self-control ability and family function as the independent variable for a stepwise regression analysis. The results are shown in **Table 6**.

Table 6 shows that both self-control ability and family function have entered the regression equation, and the regression coefficients of self-control ability and family function have reached a significant level, indicating that self-control ability and family function have a significant predictive effect on online game addiction.

4. Discussion

4.1. The General Situation of College Students' Online Game Addiction

Among the phenomenon of college students' Internet addiction, online game addiction is one of the most common and concerning problems in society. According to the survey results of this study, the proportion of Chinese college students addicted to online games is 40%, the result of this study is higher than the previous research results, the reason is that the development of the network and game industry is faster than the past, the types of online games are more abundant, including competition, adventure, action, puzzle, role playing and so on. Students have a wider range of contact with games, and the opportunities to participate in online games are increasing.

This study found that there is a significant gender difference in college students' online game addiction, male is significantly higher than female. This is consistent with previous research results. The research results of Ma Weiwei *et al.* on college students' addiction to online games show that the number of boys addicted to online games is significantly higher than that of girls. The study found that teenagers' addiction to online games is mainly due to the influence of their peers. Males, in particular, are usually keen on games, so boys have a higher rate of addiction to online games [9]. The main reasons are as follows: First, there are differences in physiological structure. Male and female brain development focuses on different ways of thinking, and hormone levels in their bodies are also different. Girls are stronger in emotion and language, while boys have

Table 6. Regression analysis of self-control and family function on online game addiction.

VARIABLE	B	R	BETA	t	p	R ²	f
self-control ability	-0.043	0.169	-0.097	-2.620	0.009**	0.029	18.017***
family function	-0.173	0.427	-0.410	-11.126	0.000***	0.183	137.312***
Constant term	55.105				0.000***		

Annotation: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

advantages in movement and motion. The second is the personality difference between boys and girls. Most games are designed to meet the boy's ego, need to conquer, and need to be accepted; the third is the influence of the environment. Most of the topics boys talk about in school are games, and many games are team combat, pay attention to cooperation, in the game battle. Such an atmosphere makes boys pay more attention to the game. Most of the girls' communication is chat, and the games they choose are mostly casual games, which are not easy to get addicted to.

This study found that college students addicted to online games in the grade there are significant differences. The research results of Su Guohui *et al.* showed that with the increase of grades, the number of online game addicts would increase, showing a linear growth trend on the whole [10]. The proportion of addiction in this study is higher than before. The proportion of addiction in freshman, sophomore, junior and senior is 4%, 11%, 15% and 10% respectively, showing an inverted U-shaped trend overall. The reason is that freshmen have just entered the university through the fierce college entrance examination competition and still continue to study intensively in high school. And the network age time is shorter, the network game experience is relatively insufficient, so the addiction rate is lower. With the growth of grades, students adapt to the relatively relaxed learning environment of the university, the Internet age also slowly increases, the addiction rate increases, but the senior students realize that they will soon be out of the ivory tower, facing the employment and a series of problems brought about by the pressure, addiction rate has decreased.

The results show that there are significant differences between the only-child and the non-only-child in college students' online game addiction. Addiction tends to be significantly higher among them, the one child policy, in line with the research results of the Deng Huiyi [11], the reasons are as follows: one is the one-child living environment is relatively single, not with growth of the company, so in more time on the network, and the game is mostly groups, only children can seek to peer in the game between communication and joy; second, most of the only children are passive parenting style with excessive doting. They don't know how to care for others and encourage the power of the id in personality. The ego component can't be realized and the personality structure is difficult to form. Third, the exam-oriented education cultivates students with competitive personality, they do not know how to cooperate with others, only think of themselves to win. When their ideal cannot be realized in real life, they will appear self-defense mechanism, easy to retreat, will escape to the virtual network world to find their own position.

4.2. Comparison of Self-Control and Family Function between College Students Who Are Addicted to Online Games and Non-Addicts

The results of this study indicate that there are significant differences in impulse control, health habits, resistance to temptation, focus on work and abstinence in

entertainment between college online game addicts and non-addicts. Online game addicts scored significantly lower than non-addicts on impulse control, healthy habits, resisting temptation, focusing on work, and reframing from entertainment. The results of this study are consistent with the results of Sui Yangfan, who believes that the self-control ability of online game addicts in game cues is significantly lower than that of normal people [12]. Sui Yangfan believes that online game addicts are unable to resist the temptation from games and related cues in daily life, leading to their inability to achieve good self-control behavior. In related studies, scholars generally believe that improper control of Internet behavior is the main factor causing Internet addiction. The survey of college students' Internet behavior also shows that Internet game addicts are generally unable to restrain themselves and have poor self-control ability.

Comparing the differences in family functioning between college online game addicts and non-addicts, this study found significant differences in problem solving, communication, role, emotional response, emotional intervention, behavior control and overall functioning. This suggests that family functioning in the network game addiction plays a very important role, the addict's family the ability to solve the problem, family members the ability to communicate, the behaviour of the function of family, family members emotional responses to stimuli, is more concerned about the activities of the other family members, behavior control mode is better than addicts family. Li Li's research shows that if parents do not communicate with their children, cannot understand their children's plight and think from their perspective, then when they encounter setbacks in the increasingly competitive society, they will be addicted to the virtual platform of the network [13]. College students have just passed the National College Entrance Examination and entered higher education institutions. Due to the heavy study pressure for a long time, parents' expectations are too high, and their parents cannot keep up with the needs of college students' growth education in terms of concepts, education methods and knowledge. Therefore, they will rely on the virtual world of the Internet to vent themselves, get rid of loneliness and satisfy the sense of achievement, which will lead to addiction.

4.3. The Predictive Effects of Self-Control Ability and Family Function on Online Game Addiction of College Students

This study found that self-control and family function had a significant predictive effect on online game addiction. This is consistent with the research of domestic scholars. Liu Meng believes that students with good self-control have a relatively low degree of participation on the Internet. When students with poor self-control are faced with a situation where they are more vulnerable, a series of vicious cycles will occur, which may lead to many undesirable phenomena such as Internet addiction, poor academic performance, management difficulties and so on [14]. Zhou Enyuan *et al.* believed that self-control had a significant negative predictive effect on Internet addiction. It can reasonably control the temporary pleasure experience brought by the network, and won't be too lost in the

network; the lack of social experience and low self-control ability of college students, in the face of new media to bring openness, anonymity and virtual characteristics, they are prone to the phenomenon of blindly following, easy to indulge on the Internet bring short-term achievements and escape from reality, become Internet addicts even boost in the network group events and social public opinion [15]. As for the predictive effect of family function on online game addiction, Liu Fengqi and Zhang Jintao believed that family function is an important predictor of college students' Internet addiction [16]. Problem solving, role and behavior control in family functioning were good predictors of Internet addiction.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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