

The Study on Relationship among Self-esteem, Social Anxiety and Mobile Phone Addiction

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This work was supported by The National Social Science Fund of China [grant number 16BSH094].

ABSTRACT: *In order to investigate the status and relationship of college students' self-esteem, social anxiety and mobile phone addiction this work was done. 302 college students were measured with the Mobile Addiction Index Scale, Self-esteem Scale and Social Anxiety Scale. Results showed: (1) The proportion of College Students' mobile phone addiction is 70.2%, which was normal distribution. The rate of mobile phone addiction was relatively high, and the situation was much common. (2) 31.46% of college students had low self-esteem, 44.37% had medium self-esteem, 24.17% had high self-esteem, 49% had high social anxiety and 5.6% have low anxiety. (3) Mobile phone addiction was significantly correlated with self-esteem and social anxiety. Mobile phone addiction was negatively correlated with self-esteem, with a correlation coefficient of - 0.55; mobile phone addiction was positively correlated with social anxiety, with a correlation coefficient of 0.557. Self-esteem and social anxiety can predict mobile phone addiction.*

KEY WORDS: *College Students, Mobile phone addiction, Social anxiety, Self-esteem*

I. INTRODUCTION

As the development of science, technology and economy, the number of mobile phone users is increasing greatly every year, and tends to be younger. According to the data released by China Internet Information Center, in June 2019, the number of Internet users in China reached 854 million [1]. Nowadays, mobile phones have become an indispensable carry-on item for many people. Research shows that Chinese people use mobile phones mainly for WeChat, payment, shopping online, information acquisition and so on [2]. When people enjoy the convenience brought by smartphones, there also be some negative effects, such as mobile phone addiction [3]. Mobile phone addiction is a kind of physical or psychological maladjustment caused by excessive abuse of mobile phones for some reasons. It mainly manifests in cognitive, behavioral and physiological symptoms, which leads to significant

impairment of their physiological, psychosocial functions [4]. And it has become a major problem in College students, which is reducing the creativity of the students.

Studies have shown that people with low self-esteem score higher on the mobile phone addiction scale, while people with high self-esteem score lower on the mobile phone addiction scale. There was a significant correlation between self-esteem and mobile phone addiction. However, other studies have shown that there is no significant relationship between self-esteem and mobile phone addiction [4]. The proportion of people with high social anxiety in mobile phone addiction is relatively large [5]. Other studies have shown that young people with social anxiety and negative response are more likely to suffer from mobile phone addiction [6]. Based on the research of other scholars, this study explores the relationship between college students' self-esteem, social anxiety and mobile phone addiction. In theory, this study can enrich the mechanism of mobile phone addiction and provide data supplement. In practical sense, this study hopes to provide a strong theoretical basis for college students' mobile phone addiction behavior by exploring the relationship between the three, and also hopes to have some effective intervention strategies.

II. Material and Method

Selecting undergraduates as the research object, random sampling online and offline questionnaires were adopted. 302 valid questionnaires were obtained, including 72 freshmen, 73 sophomores, 86 juniors and 71 senior students. 141 boys and 161 girls, totaling 302. Data were collected using the following methods:

2.1 Mobile Phone Addiction Index scale (MPAI)

Mobile Phone Addiction Index scale (MPAI) compiled by Leung and other scholars, including 17 questions, four dimensions: avoidance, withdrawal, uncontrollability and inefficiency [7]. MPAI uses 5-grade score, the higher the score, the more serious the degree of mobile phone addiction. Scores from 1 to 5 represent never, almost, occasionally, often, and always. In the 17 questions, when the subjects answer "occasionally" 8 times, it could be regarded as mobile phone addiction. 33-50 is mild mobile phone addiction, 51-67 is moderate mobile phone addiction, and more than 68 (mean score is more than 4) are severe mobile phone addiction. The alpha coefficient of this scale is 0.87, with good reliability

2.2 Self-esteem Scale (SES)

Self-esteem scale (SES) compiled by Rosenberg, it has only one dimension and has good reliability and validity [8]. SES consists of 10 subjects, which are divided into four grades. The total score ranges from 10 to 40. The higher the total score, the higher the level of self-esteem of a person. The reliability index of SES in this study is 0.87

2.3 Social Anxiety Scale (IAS)

Social Anxiety Scale (IAS) compiled by Leary, including 15 questions, use 5-Grade score, ranging from "no coincidence at all" to "extremely coincidence", score 1 to 5 respectively. The total score ranged from 15 (the

lowest level of social anxiety) to 75 (the highest level of social anxiety)[9]. The correlation coefficients of the total number of IAS entries and other entries are at least 0.45, the alpha coefficient is over 0.87. Individuals with high scores are more likely to show inferiority, anxiety and excessively care about others' opinion.

All processes of the execution and statistical analyses were performed by a statistical counselor and via SPSS 18 software.

III. RUSULT

Functions that students always use are as following: Wechat, Payment, Shopping online, Information Acquisition, etc. This suggests that college students put the social interaction and smartphones' convenience in an important position in daily life. Table 1 is for details.

Table 1 Functions of smartphones (at most 2) (N=302)

	Wechat	Payment	Shopping online	Information acquisition
Users	289	217	200	196
Proportion(%)	95.69	71.85	66.22	64.90

The study found that the proportion of College Students' mobile phone addiction is normal distribution. 70.2% of college students have mobile phone addiction, of which 17.54% are mild, 48.34% are moderate, 4.30% are heavy and 29.80% are non-addiction. The ratio of mobile phone addiction among gender and grades is shown in Table 2.

Table 2 The proportion of mobile phone addiction among college students

		Non-addiction		Mild		Moderate		Serious	
		N	Ratio	N	Ratio	N	Ratio	N	Ratio
Gender	Male	56	18.54%	13	4.30%	69	22.85%	3	0.99%
	Female	34	11.25%	40	13.25%	77	25.50%	10	3.31%
Grade	Freshman	27	8.94%	16	5.30%	28	9.27%	1	0.33%
	Sophomore	22	7.28%	10	3.31%	36	11.92%	5	1.66%
	Junior	25	8.27%	16	5.30%	41	13.58%	4	1.32%
	Senior	16	5.29%	11	3.64%	41	13.58%	3	0.99%
	Total	90	29.80%	53	17.55%	146	48.34%	13	4.30%

The score of the self-esteem scale is between 10 and 40. According to the calculation method of the scale, the score below 25 is low self-esteem level, between 25 and 33 is medium self-esteem level, over 33 is high

self-esteem level. According to the data, 31.46% of college students have low self-esteem, 44.37% have medium self-esteem and 24.17% have high self-esteem. From Table 3, we can see that the overall level of self-esteem of college students is in the middle level, which is better situation. In terms of gender, the level of self-esteem of boys is slightly higher than that of girls, but the difference is not significant. From the grade point of view, the self-esteem of freshmen is slightly higher, but the difference is not significant either.

Table3 Basic Situation of College Students' Self-esteem

		Min	Max	M	SD
Self-esteem	Male	12.00	40.00	28.61	5.85
	Female	11.00	40.00	28.40	6.53
	Freshman	18.00	40.00	29.52	6.39
	Sophomore	12.00	40.00	28.30	5.64
	Junior	11.00	40.00	28.34	6.01
	Senior	14.00	40.00	27.85	6.81
	Total	11.00	40.00	28.50	6.21

The score of College Students' anxiety scale is between 15 and 75. The higher the score is, the higher the social anxiety level. From Table 4, we can see that the level of social anxiety of college students is in the middle level. The level of social anxiety in female is slightly higher than that in male. The level of social anxiety in freshmen is higher than that in other grades, but there is no significant difference in gender and grade. The norm of the scale $M = 38.9$, $SD = 9.7$, lower than or equal to 29.2 is defined as the low score group, higher than or equal to 48.6 is defined as the high score group. According to the analysis data, there are 148 people in the high-score group, accounting for 49%, 17 people in the low-grade group, accounting for 5.6%.

Table4 Basic Situation of Social Anxiety Level of College Students

		Min	Max	M	SD
Social anxiety	Male	17.00	67.00	45.31	11.36
	Female	24.00	71.00	49.09	11.41
	Freshman	17.00	71.00	46.86	13.31
	Sophomore	30.00	67.00	47.26	9.35
	Junior	24.00	67.00	47.62	11.25
	Senior	25.00	68.00	47.52	12.14
	Total	17.00	71.00	47.33	11.52

Pearson correlation analysis was conducted on the scores of mobile phone addiction, self-esteem and social anxiety of College students. The results indicate that self-esteem and mobile phone addiction are significantly

correlated with each dimension, which is negatively correlated; social anxiety and mobile phone addiction are significantly correlated with each dimension, which is positively correlated. Table 5 is for details.

Table5 Descriptive statistics of MPA and its correlation with self-esteem and social anxiety

	1	2	3	4	5	M	SD
MPA 1		0.890**	0.808**	0.827**	0.833**		
Out of control 2	0.890**	1	0.591**	0.632**	0.638**	18.905.42	
Abstinence 3	0.808**	0.591**	1	.546**	0.565**	11.313.96	
Escape 4	0.827**	0.632**	0.546**	1	0.722**	9.493.03	
Inefficiency 5	0.833**	0.638**	0.565**	0.722**	19.372.89		
Self-esteem 6	-0.550**	-0.487**	-0.479**	-0.386**	-0.486**	28.506.21	
Social anxiety 7	0.557**	0.509**	0.401**	0.441**	0.527**	47.3311.52	

According to the results obtained, self-esteem was regarded as an independent variable and mobile phone addiction as a dependent variable for regression analysis. The results are in Table 6 below. Through the previous analysis, we can see that there is a significant correlation between mobile phone addiction and self-esteem ($p < 0.001$). From the data in table 6, we can see that college students' self-esteem level has an effective prediction of mobile phone addiction, and students with higher self-esteem were less in mobile phone addiction.

Table6 Self-esteem as predictor MPA

	Beta	R ²	Adjustment R ²	T	F
Self-esteem	-0.550	0.30	0.30	-11.40**	129.927

According to the results obtained, social anxiety was taken as an independent variable and mobile phone addiction as a dependent variable for Regression analysis. The results were in Table 7 below. From the previous analysis, we can see that there is a significant correlation between mobile phone addiction and social anxiety. From the data in Table 7, we can see that social anxiety level has a good predictive effect on mobile phone addiction. Students with higher social anxiety are more easily suffer from mobile phone addiction

Table7 Social anxieties as predictor MPA

	Beta	R ²	Adjustment R ²	T	F
Social anxiety	0.625	0.31	0.308	11.609**	134.774

IV. Discussion

4.1 Mobile phone addiction of college students tend to be serious

Analysis of the survey data about college students' mobile phone addiction, the total score shows a normal distribution. The higher score, the stronger degree of mobile phone addiction. In this study, 302 samples were collected; of which 212 students are obviously suffer from mobile phone addiction, accounting for 70.20% of the total. In terms of the degree of addiction, moderate addiction accounts for the highest. The study points out that there are some differences in mobile phone addiction among college students, regardless of grade, gender, college and other conditions [10]. This coincides with the results of this study. In every dimension of mobile phone, uncontrollability has the greatest impact on College Students' mobile phone addiction, followed by withdrawal, and there is little difference between avoidance and inefficiency. It shows that college students can't control their use of mobile phones. The low scores of avoidance and inefficiency indicate that the phenomenon of excessive use of mobile phones by college students in order to avoid unhealthy emotions such as life disorder is not particularly serious. After the analysis of College Students' mobile phone usage, it is found that college students spend much time on mobile phones every day. With the mobile phone changing from "communication tool" to "personal multimedia terminal", smartphone is gradually integrated into people's daily life, benchmarking into a new media culture. The function of mobile phone is more and more, changes the life style of College students. It used to listen to music with MP3, watch Videos on TV, shopping, read paper books, chat face to face, but now these can be finished through mobile phones, that is, mobile phones can meet most of the needs in life. Investigation found that there was a correlation between user needs and mobile phone addiction behavior [11]. As to its functions, the most popular is Wechat, then Payment、 Shopping online and Information Acquisition [2].

4.2 College students' self-esteem and social anxiety are in the middle level.

The independent sample t-test shows that there is no significant difference in mobile phone addiction among grades ($p > 0.05$), which means that there is no significant difference in mobile phone addiction among college students of different grades, and the mean score of four grades is above 46.5, which is close to the moderate level of mobile phone addiction. Significantly, the level of mobile phone addiction of the seniors is much higher than other grades. However, there are some studies have demonstrated that freshmen and sophomores have higher level than juniors and seniors on mobile phone addiction [12]. This is slightly contradictory to this study. We can be inferred reasonably from the following aspects: freshmen and sophomores have a great demand for information acquisition and social relationship after they enter universities, so those studies draw a conclusion that the level of mobile phone addiction of freshmen and sophomores is higher than the seniors. However, in the view of this study, the level of mobile phone addiction of seniors is relatively high, which may be related to the problems they are facing in the entrance examination for postgraduate education and employment. This period is special for college students. They are leaving campus and going to society, so they are facing many novelties and challenges. Many students obtain more information through mobile phones to enrich themselves. Some students relax themselves through mobile phones. As for the contradiction of the above conclusions, maybe we should consider from more

different aspects, such as students' majors, which can be used as a research point in the future. But no matter what, senior students should adjust their mentality to solve problems effectively, instead of sinking into mobile phones, resulting in mobile phone addiction.

4.3 College students' mobile phone addiction is negatively correlated with self-esteem and positively correlated with social anxiety.

According to the data in Table 6, there is a significant correlation between self-esteem, mobile phone addiction and various dimensions of mobile phone addiction, which shows that people with low self-esteem are more likely to suffer from mobile phone addiction. On the one hand, college students with low self-esteem need more emotional communication and comfort. Therefore, they will try to meet these needs through mobile phones. On the other hand, people with low self-esteem are biased in their self-perception and self-evaluation. They are not confident in their own views, so instead of communicating directly with others face to face, they will choose social networks such as Wechat, because they can modify words again and again to express their meaning better. College students with low self-esteem and high loneliness may have higher mobile phones addiction [13]. According to the data in Table 7, there is a significant correlation between social anxiety and various dimensions of mobile phone addiction. Anxiety was positively correlated with mobile phone [14]. Existing studies are consistent with the results of this study. Students with social anxiety will worry about inaccuracy of their words, which will lead them into an embarrassing situation when get on with others. Especially in some important occasions, they are easy to be nervous. In order to alleviate this tension and embarrassment, students with social anxiety usually communicate with others by mobile phones, which can reduce their anxiety in face-to-face situations. Over time, this will become a habit, and the phenomenon of mobile phone addiction will be arisen. Some studies have demonstrated that the increase of College Students' mobile phone addiction tendencies can affect the incidence of anxiety symptoms and deepen their anxiety [15]. This indicates that social anxiety has a predictive effect on mobile phone addiction. From Table 6 and Table 7, we can see that there is a significant correlation between self-esteem, social anxiety and mobile phone addiction. Self-esteem and social anxiety have entered the regression equation. Self-esteem has a significant negative predictive effect on mobile phone addiction. Students with higher self-esteem level are less likely to suffer from mobile phone addiction. Social anxiety has a significant positive predictive effect on mobile phone addiction, indicating that the higher the level of social anxiety is. The more likely it is result in mobile phone addition. The above suggests that self-esteem and social anxiety may lead to excessive use of mobile phones, resulting in mobile phone addiction. People with low self-esteem level and social anxiety often be unconfident when interacting with people. They are afraid to boldly express their views, ideas, easily be nervous and embarrassed. Therefore, they are willing to find a comfortable situation for themselves, where full of sense of belonging. Then mobile phones become the place for them to escape reality, and when this behavior becomes a habit, the problem of mobile phone addiction arises.

CONCLUSION

This study draws the following conclusions: (1) The proportion of College Students' mobile phone addiction is 70.2%, normal distribution. And the level of mobile phone addiction is obviously high, which is common. There are obvious gender differences and no significant differences in grade. 31.46% of college students have low self-esteem, 44.37% have medium self-esteem, 24.17% have high self-esteem, 49% have high social anxiety and 5.6% have low anxiety. (2) Mobile phone addiction has a significant correlation with self-esteem and social anxiety. Mobile phone addiction was negatively correlated with self-esteem, with a correlation coefficient of -0.55; mobile phone addiction was positively correlated with social anxiety, with a correlation coefficient of 0.557. (3) Self-esteem and social anxiety have predictive effects on mobile phone addiction.

In this paper, the current situation and relationship of self-esteem, social anxiety and cell phone addiction of college students were investigated by using scale method. The results showed that the problem of cell phone addiction was serious and needed to be intervened. There are still some limitations in the study. For example, in the future, the number of samples can be increased, or the situation of other people's mobile phone addiction can be investigated. The experimental design can be used to further explore the causes of mobile phone addiction. What's more, we need to develop operable intervention methods for mobile addiction.

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