Relationship of Mobile Phone Addiction and Self-Control of College Students

Wenjing Yi, Yunji Cai, Zhen Zhang, Shilian Sun

Beijing Science and Technology University, Zhuhai College, Zhuhai 519088, China

Abstract. Objective: to know the fundamental state of college students using mobile surfing, and explore the relationship between mobile phone addiction and self-control, and provide the scientific proof of preventing and early intervention of mobile surfing addiction. Methods: a total of 439 college students were surveyed with the Mobile Phone Addiction Tendency Scale and Self-control Scale. Results: totally 128 college students (29.1%) were detected with mobile phone addiction. The differences of mobile phone addiction between different gender, grade, birthplace was of statistical significance ($x2=4.806$, $x2=5.243$, $x2=10.3$, $P<0.05$). There was a significantly positive correlation between mobile phone addiction and self-control ($r=0.392$, $P <0.05$). Multiple linear regression indicate that the self-control has an predict effect on Mobile phone addiction, the factor interpretation of resist temptation and Impulse control were 16%, 17%. Conclusion: there is an important relationship between mobile phone addiction and self-control, 4 factors of the self-control could directly influence mobile phone addiction.

Keywords: behavior; mobile phone addiction; self-control; mobile phone; local college student.

1. Introduction

At present, the scale of mobile Internet users reaches 788 million in China, of which the proportion of Internet users aged 20-29 is the highest and reaches 27.9%[1]. Mobile phone addiction (MPA) is mainly that users excessively use mobile phone and their self-control ability is poor, which causes physical and mental health to be damaged and bad social interaction. Mobile phone dependence is an addiction response to mobile phone use. The versatility of smartphones has attracted college students to become mobile phone followers, but repeated use also has many negative effects, such as wasting time, affecting learning, and making people fickle[2-6]. At present, the studies on mobile phone addiction are mostly concentrated on the individual research of medical students, and the r studies on influencing factors are focused on personality and self-esteem, for example, the occurrence of mobile phone addiction is intervened and regulated in accordance with the personality characteristics of different college students[7], However, the studies on mobile phone addiction and self-control of local college students are rare, and training by improving self-control can improve unhealthy mental tendencies, such as depression, etc.[8] Therefore, what is the relationship between mobile phone addiction and self-control? Is self-control an important factor of occurrence of mobile phone addiction in college students? How to carry out preventive education requires further discussion and research.

2. Objects and Methods

2.1 Objects

The convenience sampling method was used to sample the students in a university of Zhuhai City, Guangdong Province; there are altogether 477 questionnaires for distribution, of which there were 439 valid questionnaires (92%). Among them, there are 222 boys (50.5%), 217 girls (49.5%); 99 liberal arts, 340 science and engineering, 116 freshmen(26.4%), 108 sophomores(24.6%), 101 juniors(23%), 114 seniors(26%). There are 149 the only children(33.9%), 290 non-only children(66%), 286(65.1%) in urban areas, and 153(34.8%) in rural areas.

2.2 Methods

Mobile Phone Addiction Tendency Scale (MPATS) [9] was compiled by Xiong Jie and others in 2012, which has 16 items and 5-level score in total; it evaluates symptoms from four aspects: abstinence symptoms, prominent behaviors; social comfort and mood changes. The reliability coefficient of total scale is 0.83, and the retest reliability is 0.91. The scale adopts 5-level score, the higher the score, the higher the degree of mobile phone addiction, 48 total score can be defined as suspected mobile phone addict. The reliability of internal consistency of this scale after testing in this sample is 0.842.

College Student Self-control Scale (SCS)[10] was revised by Tan Shuhua and others based on the self-control scale published by Tangney in 2004. There are 19 items in college student self-control scale; each item adopts 5-level score, the total score is 19-95 points, the higher the total score, the worse the self-control. This scale has five dimensions of diagnostic items: impulse control, healthy habits, resistance to temptation, focus on work, and moderate entertainment. The internal consistency reliability of this scale is 0.864, and the retest reliability is 0.851.

2.3 Statistical Treatment

The measurement results were statistically analyzed with SPSS 19.0, and x2 test was used to carry out inferential comparisons, the statistical data were expressed by `x±s, after the normality test, the independent sample t test was used to conduct deduction comparison, Pearson correlation analysis and multiple linear regression were used to analyze and compare mobile phone dependence and self-control, P <0.05 difference was considered to be statistically significant.

3. Results

3.1 General Situation

This study screened 128 mobile phone addicted college students, which accounted for 29.1% of the total number. Among the addicts, 54 were male(24.4%) and 74 were female(33.9%). The mobile phone addiction scores of college students had statistical significance in gender, grade, and birthplace and so on, there was no statistical significance in major, grade, and whether or not the only child. As shown in Table.1.

Table 1. comparison of mobile phone addiction scores of college students with different demographic characteristics

survey content	the number of people	detection number of people	detection rate(%)	x2value	P value
gender				4.806	0.03*
male	221	54	24.4		
female	218	74	33.9		
Class grade rank				5.243	0.02*
above the average	128	73	57		
below the average	311	286	65.1		
the only child				0.06	0.81
yes	128	46	35.9		
no	311	108	34.7		
source of students				10.3	0.001**
city and town	128	103	80.5		
countryside	311	202	65		
study time outside of class				9.60	0.008**
do not study	45	19	42.2		
less than 3 hours	276	86	31.2		
more than or equal to 3 hours	118	23	19.5		

Note: *p<0.05, **p<0.01, similarly hereinafter

3.2 Differences Analysis of Mobile Phone Addiction of College Students with Different Self-controls

First, the self-control scores of 439 college students were ranked from low to high, the top 27% with high scores were determined as the low self-control group, and the bottom 27% with low scores were determined as the high self-control group. 118 subjects with high self-control (M=62.5; SD=4.87) and 118 subjects with low self-control (M=44.0; SD=4.24). The independent sample t test was made on the scores of total scores of mobile phone addiction and scores of four factors for low self-control subjects and high self-control subjects(as shown in Table.2). It was found that high self-control subjects were significantly lower than low self-control subjects in total scores of mobile phone addiction and scores of four factors.

Table 2. difference analysis results of college students with different self-control in mobile phone addiction

item	high self-control	low self-control	t	p
total score of mobile phone addiction	38.2±7.12	46.7±9.95	7.57	0.001**
abstinence behavior	2.55±0.57	3.03±0.72	5.56	0.001**
prominent behavior	2.12±0.51	2.77±0.71	7.85	0.001**
social comfort	2.42±0.69	2.75±0.84	3.32	0.001**
mood change	2.36±0.68	3.03±0.75	7.17	0.001**

3.3 Correlation Analysis between Mobile Phone Addiction and Self-control Factors of College Students

Correlation analysis is made for self-control and mobile phone addiction scores of all respondents, the correlation coefficient is 0.392 (P <0.05), and the self-control score is high; as can be seen from Table.3, except the factor "resistance to temptation" in self-control, "focus on work" are not related to the dimensions of mobile phone addiction, the rest self-control factors are significantly related to mobile phone addiction factors.

Table 3. correlation (r) between mobile phone addiction and self-control

	abstinence behavior	prominent behavior	social comfort	mood change	impulse control	healthy habits	resist temptation	focus on work	moderate entertainment
abstinence behavior	1								
prominent behavior	0.672**	1							
social comfort	0.429**	0.398**	1						
mood change	0.549**	0.514**	0.294**	1					
impulse control	0.199**	0.295**	0.140**	0.283**	1				
healthy habits	0.285**	0.276**	0.186**	0.234**	0.345**	1			
resistance to temptation	0.023	-0.038	0.028	0.026	-0.022	-0.275**	1		
focus on work	0.173**	0.188**	0.084	0.175**	0.351**	0.265**	0.098*	1	
moderate entertainment	0.302**	0.359**	0.135**	0.285**	0.504**	0.490**	-0.144**	0.301**	1

3.4 Multiple Regression Analysis of Mobile Phone Addiction

Table 4. stepwise multiple regression analysis of self-control factors on mobile phone addiction

dependent variable	independent variable	R2	β value	F value	t value
mobile phone dependence	moderate entertainment	0.12	2.29	60.55**	3.74
	healthy habits	0.15	2.29	14.38**	3.92
	resistance to temptation	0.16	1.74	5.84*	2.21
	impulse control	0.17	1.47	4.85*	2.20

Taking mobile phone dependence as dependent variable, stepwise regression analysis was made for 5 factors in self-control as predictive variable. The results are shown in Table.4, when the 4

predictive variable of self-control predicting mobile phone addiction, they become significant variables of regression equation, their joint explanatory variable is 0.163, namely all the variables in the table can predict 16.3% variation of mobile phone addiction. The level of resistance to temptation and impulse control is the best prediction for mobile phone addiction; its explanation amount is 16% and 17%, respectively. The regression equation is: 0.12×moderate entertainment+ 0.15×healthy habits+ 0.16× resistance to temptation + 0.17×impulse control.

4. Discussion

This research results show that detection rate of mobile phone addiction of college students is 29.1%, which is basically consistent with some research conclusions[11-13]. Female addiction scores are higher than male students. This may be because boys prefer outdoor sports and social practice, and allocate less time is mobile phones, which is consistent with the results in the questionnaire. 113 boys choose "sports" in hobbies (61.8%), which is higher than girls, and college girls tend to study, shop and socialize through mobile phones, and mobile games such as Arena of Valor are also increasingly attractive to girls. Students with good grades spend more time on learning, and there is a significant difference in the mobile phone addiction degree with students with poor grades. The significant difference between urban and rural areas may be due to the abundance of urban students' material life and the premature use of smartphones of students.

This study found that different self-controllers had significant differences in the total score and four dimensions of mobile phone addiction, the scores of college students with high self-control were significantly lower than those of college students with low self-control. Correlation analysis shows that self-control and mobile phone addiction are significantly positively correlated, which is consistent with other studies[14]. As can be seen from the results of stepwise regression analysis, self-control, moderate entertainment, healthy habits, resistance to temptation and impulse control in self-control can effectively predict the level of college students' mobile phone addiction, and the explanatory amount for resisting temptation and impulse control predicts the occurrence of mobile phone addiction best. The demand of young people in modern society for the mobile phone network is increasing day by day, at the university stage, they are far away from their parents and do not have high-intensity learning pressure in high school, the free space of university makes the self-management ability of college students be tested, students with poor self-control ability have insufficient perception for mobile phone usage time, in addition, the lack of planning and struggling goals in doing things, and the time has been lost unconsciously, eventually result in the delay of the main task in front , form a bad habit of seeing mobile phones before going to bed. [18-19] Shi Guirong and Wang Zhengxiang's research results show that Mobile phone dependence is positively correlated with impulse[20-21], the research result further supports and expands related research, improving the self-control of network use helps to suppress addiction.

Ultimately, mobile phone addiction of college students is common, schools can help students set learning goals and enrich contents and effect of extracurricular activities to resist external temptations. Schools can make students establish a sense of self-management, set up "zone of proximal development", use appropriate methods train and improve self-control ability to reduce the occurrence of mobile phone addiction, and make full use of the online world to help personal development.

Acknowledgements

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