

The Solution of Sleeping Disorder

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Abstract: The aim of the research is to explore the influence of mobile phone addiction on the sleep quality of teenagers and its mechanism. Based on the original experiment, this experiment is expanded from the youth audience to the college students at a higher age level, that is, the 18-25 year old audience. At the same time, the mediating effect, the influence of mindfulness and rumination were explored, and then analyzed and considered whether the age level of subjects could be further broadened.

Keywords: Sleep disorder; Sleep deficits

Introduction:

In recent time, more and more children suffer from a sleep disorder. By being influenced in sleep disorder, the number of children with a developmental disorder significantly increase. It also effect other consequences such as behavior problems, compromised daytime functioning and family stress (Richdale, A., & Wiggs, L., 2005). There is no time to delay in solving this problem. This article would deeply study the factors affecting sleep and the interaction between them, and explore solution through preliminary experiment.

1. Literature review:

First and foremost, there are various factors lead to sleep disorder. Serman et al. (1982) said that the “severity of the disorder is at least partially correlated with the severity of sleep deficits” which is likely be one reason cause the sleep disorder. In addition, as for children, it may be associated with adverse consequences including behavior problems, compromised daytime functioning and family stress (Richdale, A., & Wiggs, L., 2005). On this basis, this paper is the purpose of exploring more about solution of sleep disorder, especially for children sleep disorder. As Liu Qingqi, Zhou Zongkui, Niu Gengfeng and Fan Cuiying (2017) supported the model and experimental method. The reliability of experimental results could be verified by retesting and whether the effects of computer programs on sleep disorder are useful will be proven.

2. Methodology:

In the process of this research, both of primary sources and secondary sources were used. Primary sources were collected by giving approximately sixty questionnaires to people regardless of age and region. We distributed the questionnaires in paper format to students and teachers around Southwest University as well as electronically using WeChat and Weibo. All of the questionnaires consisted of PSQI and other professional scales which provided reliability as well as validity. The aim of these questionnaires was to analyze the factors affecting sleep and the interaction between them. In addition, primary sources could provide data as a tool for retest, which could eliminate interference caused by time factors.

As for online secondary resources EBSCO and other journal articles from SWU online data base were used to collect and analyze data. Secondary resources were the data from research which is a systematic authoritative research about exploring the relationship between different factors and the therapeutic effect by electronic treatment.

3. Results:

In the original study, 95.23% of teenagers who participated in the experiment spend more than 10 minutes on mobile phone per day on average, and 16.45% spend more than 3 hours. 88.24% of teenagers spend more than 10 minutes on their mobile phones before going to bed, and 4.45% spend more than 3 hours. Mobile phone use and mobile phone use before sleep were significantly positively correlated with mobile phone addiction ($r = 0.40, p < 0.001$; $R = 0.37, p < 0.001$).

After controlling for gender and grade, the results of partial correlation analysis showed that mobile phone addiction is negatively

correlated with emotional balance and mindfulness, and positively correlated with rumination and sleep quality. Emotional balance was positively correlated with mindfulness and negatively correlated with rumination and sleep quality. Rumination was negatively correlated with mindfulness and positively correlated with sleep quality. There was a significant negative correlation between mindfulness and sleep quality. The correlation matrix, mean and standard deviation of each variable were shown in table 1.

Table 1
correlation

	1	2	3	4	5
Mobile Phone Addiction	1				
Emotional Balance	-0.32	1			
rumination	0.37	-0.37	1		
samyaksmrti	-0.27	0.29	-0.43	1	
sleep quality	0.30	-0.38	0.32	-0.31	1
M	2.32	5.38	2.05	2.30	6.24
SD	0.72	2.38	0.57	0.80	3.31

From the table2, the results showed that mobile phone addiction significantly positively predicted sleep quality ($p < 0.001$); In addition, the interaction term between mobile phone addiction and rumination positively predicted sleep quality ($p < 0.01$), indicating that the influence of mobile phone addiction on emotional balance and sleep quality is regulated by rumination.

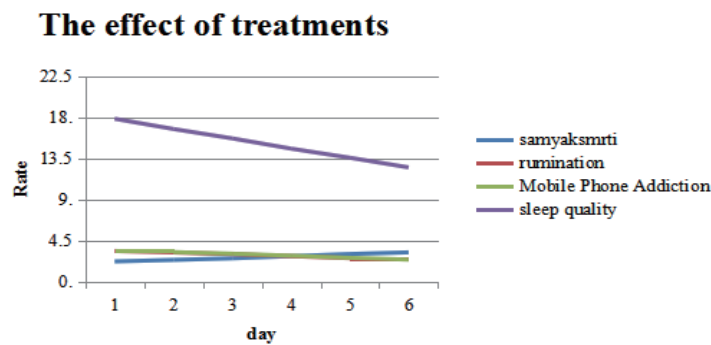
In summary, emotional balance plays a mediating role between mobile phone addiction and sleep quality of adolescents, and the direct effects of mobile phone addiction on sleep quality are all regulated by rumination and mindfulness. Specifically, with the increase of rumination level, both the direct effect and the mediating effect of mobile phone addiction on sleep quality were continuously enhanced. With the increase of mindfulness level, both the direct effect and the mediating effect of mobile phone addiction on sleep quality were decreasing.

Table 2
Correlations

ControlVariables		sleep quality	Mobile Phone Addiction	samyaksmrti	rumination
sleep quality	Correlation	1.000	.867	-.798	.861
	Significance(2-tailed)	.	.000	.000	.000
	df	0	216	216	216
Mobile Phone Addiction	Correlation	.867	1.000	-.828	.907
	Significance(2-tailed)	.000	.	.000	.000
	df	216	0	216	216
-none ^a	Correlation	-.798	-.828	1.000	-.836
	Significance(2-tailed)	.000	.000	.	.000
	df	216	216	0	216
samyaksmrti	Correlation	.861	.907	-.836	1.000
	Significance(2-tailed)	.000	.000	.000	.
	df	216	216	216	0
rumination	Correlation	1.000	.347		
	Significance(2-tailed)	.	.000		
	df	0	214		
samyaksmrti&rumination	Correlation	.347	1.000		
	Significance(2-tailed)	.000	.		
	df	214	0		

a.Cellscontainzero-order(Pearson)correlations.

To test the effect of subsequent treatment, as shown in the below figure, sleep quality decreased significantly with the increase of days of treatment. While other factors, such as mobile phone addiction, mindfulness and rumination, did not change significantly.



4. Discussion:

This study found that mobile phone addiction significantly predicted sleep quality. The more severe the mobile phone addiction was, the worse the sleep quality would be. This result is consistent with previous studies on mobile phone addiction among college students (Li et al., 2016). Blue light emitted by mobile devices such as mobile phones at night interferes with the brain’s production of the sleep-related hormone melatonin.

In this study, it was found that after the use of specific treatment procedures for sleep disorders in BioTrace software and the playing of light music to help sleep, the overall sleep quality of the subjects receiving the longitudinal study was generally improved, which indicated that the relevant procedures and the combination of light music had a significant therapeutic effect. The sleep quality had changed significantly during the period, while the other factors as independent variables were stable, indicating that the treatment regimen pointed to a single and significant effect.

5. Recommendation:

This study explored the effects of mobile phone addiction on sleep quality of college students through an mediated model with regulation, and further revealed the regulating effects of rumination and mindfulness. In addition to validating the previous research viewpoints, the effectiveness of relevant treatment schemes was also found on this basis, which opened up a new research direction in this field. But at the same time, this study also had some deficiencies.

First of all, the data in this study were all from the subjective reports of the subjects, and there might be errors such as memory bias, social approval, etc. In future studies, data should be collected from multiple sources to measure relevant variables more objectively. Secondly, this study adopted the cross-sectional design based on the questionnaires. Although the analysis and discussion of the hypothesis model were based on the existing research, the results still cannot determine the causal relationship between variables and the long-term effect between variables. In addition in the following longitudinal study, due to the limited time and space, the number of subjects obtained was not enough to determine the cause and effect of each variable, and the original purpose was to explore the feasibility of treatment, which had small relationships with each variable.

Finally, as for the treatment, to ensure that the result of the experiment is easy to get, two treatments (BioTrace software “sleep disorder” in the treatment and soft music intervention) was adopted to make the finally significant results, but they were unable to extract specific single factor influence, make two kinds of treatment have effects which cannot be distinguished. In future experiments, we should pay more attention to the influence of this factor, and divide the treatments into three groups: software, music and mixed treatment, so as to explore the significance.

References:

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