

The Influence of Social Anxiety on Mobile Phone Addiction: The Buffer Effect of Belief in a Fair World

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Abstract: Using the Mobile Phone Addiction Scale, Social Anxiety Scale and Justice World Belief Scale, this paper investigated 647 college students in a university in Hubei Province, and investigated the influence of social anxiety of college students on mobile phone addiction and the moderating effect of justice world belief in it. The results show that: (1) there is a significant positive correlation between social anxiety and cell phone addiction among college students; (2) just world belief plays a regulating role in the relationship between social anxiety and cell phone addiction. with the improvement of just world belief, the relationship between social anxiety and cell phone addiction gradually weakens and eventually disappears.

Keywords: Mobile Phone Addiction; Social Anxiety; Justice World Beliefs; Moderating Effect

1. Asking Questions

According to the data of the Ministry of Industry and Information Technology, as of 2017 year 6 month, the number of mobile phone users nationwide reached 13.6 billion, and the total number of mobile network users reached 10.4 billion. With the development of mobile network, mobile phone is no longer just a tool for making phone calls and sending short messages. As a network terminal, mobile phone has become an indispensable tool for people and permeates all aspects of life. People spend a lot of time on mobile phones, which may have a series of adverse consequences. Research has found that excessive use of mobile phones can lead to physiological and psychological problems such as sleep disturbance, inattention, depression^[1-2]. Excessive use of mobile phones is also considered a kind of behavioral addiction (behavioral addiction)^[3]. Scholars have put forward several concepts to characterize the excessive use of mobile phones and its consequences, such as Mobile Phone Addiction, Problematic Use of Mobile Phone phones, Mobile Phone Dependence, etc. There is a mixed phenomenon^[4] among these concepts. In this study, mobile phone addiction is used to refer to the excessive use of mobile phones. Mobile phone addiction refers to individuals who are excessively addicted to various activities mediated by mobile phones, and have strong and continuous dependence on and thirst for mobile phones, resulting in obvious social and psychological function damage^[5].

As for the influencing factors of cell phone addiction, existing researches have found that personality factors can effectively predict cell phone addiction, such as agreeableness, self-esteem and other factors have negative correlation with cell phone addiction, while neuroticism, loneliness, social anxiety and other factors will promote cell phone addiction^[6-9]. Among them, social anxiety is one of the most direct factors causing cell phone addiction^[10-11]. Social Anxiety (SAD) is a universal human experience. Its main feature is that individuals have a strong fear of others' evaluation in social situations, which may even cause serious functional damage, thus developing into social anxiety disorder (social anxiety disorder, SAD)^[12]. When individuals face highly evaluated situations (such as public speaking, meeting strangers and talking with authoritative figures), they are prone to this kind of fear. If they cannot escape from this situation, individuals will have a higher level of anxiety^[13].

Mobile phones and the Internet can help people who are prone to social anxiety. Online social communication is mainly a social communication method that uses text and images as communication symbols and carries out information

communication through online services^[14]. In this non-face-to-face social interaction mode, it is more conducive to individual impression management, thus reducing the risk of self-disclosure and evaluation fear^[15]. Therefore, people's anxiety is lower than reality in online social interaction^[16]. According to the Social Compensation Hypothesis (social compensation hypothesis), people with high social anxiety will be willing to use safer networks to communicate, thus making up for the lack of social discomfort in reality. The research results also prove this point^[17]. Therefore, the level of social anxiety can effectively predict the status of cell phone addiction.

Previous studies on the effect of social anxiety on cell phone addiction have paid more attention to the mediation mechanism between the two and less attention to the regulation mechanism, that is, under what conditions social anxiety is easy to form cell phone addiction, and under what conditions it is not easy. The belief in a just world may be a kind of moderator variable. Just World Belief (just world belief) means that individuals believe that the world is just, that people can get what they deserve, and that what they currently get is what they deserve^[18]. Previous studies have found that belief in a just world has a self-regulating effect on disadvantaged groups (such as ethnic minorities and people with low social and economic status): members of disadvantaged groups with high belief in a just world will face up to and face the immediate difficulties more squarely and are willing to devote more energy to the pursuit of long-term goals, and this self-regulating effect does not exist for members of dominant groups (such as people with high social and economic status)^[19]. Social anxiety is more likely to be rejected and ignored in interpersonal interaction. They are at a relatively disadvantageous position in social interaction^[20]. Therefore, belief in a just world may have a self-regulating effect in this group. That is, social anxiety with high belief in a just world will devote more energy to the process of changing the status quo, instead of evading reality and shrinking from the virtual world. To sum up, this study will explore the effect of social anxiety on cell phone addiction and the moderating effect of just world beliefs in this effect.

2. Research Methods

2.1 Subject

Subjects were college students from a university in Hubei Province. A total of 700 copies of questionnaires were issued and 694 copies were recovered, of which 647 copies were valid and 92.4%. "were effective Among them, boys 297 name, girls 350 name; First year student 151 name, second year student 221 name, third year student 191 name, fourth year student 84 name; Science and engineering major 331 name, literature management category 292 name, art and sports category 24 name. Average age 19.86 years old, standard deviation 1.53 years old.

2.2 Research Tool

2.2.1 Cell Phone Addiction

The mobile phone addiction tendency scale for college students compiled by Xiong Jie et al. was used to measure the mobile phone addiction level of the subjects^[21]. The scale consists of 16 items. If I communicate with others by mobile phone, I feel more confident, including withdrawal symptoms, prominent behavior, social comfort and mood changes. Likert 1-5 points are used for scoring. In this study, the total score of the scale is used as the evaluation index of mobile phone addiction. The higher the score, the more serious the mobile phone addiction. the scale has good structural validity in this study ($\chi^2/df = 5.52$, $rmsea = 0.08$, $CFI = 0.89$, $IFI = 0.90$, $gfi = 0.90$) and the overall internal consistency coefficient is 0.89.

2.2.2 Social Anxiety

The social anxiety level of the subjects was measured by using the social anxiety subscale in the self-awareness scale compiled by Fenigstein and et al.^[22]. The scale contains 6 items. If I feel nervous when talking in front of the crowd, it contains 1 reverse scoring items. Likert 0-3 points are used to score. The higher the score, the higher the social anxiety level. in this study, the scale has good structural validity ($\chi^2/df = 5.11$, $rmsea = 0.08$, $CFI = 0.97$, $GFI = 0.98$, $IFI = 0.97$)

and internal consistency coefficient is 0.76.

2.2.3 Faith in a Fair World

Using Dalbert and General Fair World Belief Scale to Measure Subjects' Views on World Justice [23]. The scale includes 6 items. If I think the world is basically fair and reasonable, I use Likert's 1-6 points to score. The higher the score, the more the individual thinks the world is fair. in this study, the scale has good structural validity ($\chi^2/df = 6.03$, $rmsea = 0.09$, $CFI = 0.97$, $GFI = 0.98$, $IFI = 0.97$) and internal consistency coefficient is 0.84.

3. Research Results

3.1 Common Method Deviation Test

Reverse scoring items are designed in this research scale, and different grades of scoring methods are used for measuring each variable. These measures are helpful for controlling the deviation of common methods. Use Harman single factor test method to test the possible common method deviation in this questionnaire survey. Principal component analysis was carried out on 28 items of all variables, and factors with 5 characteristic roots larger than 1 were found out, which can explain the variation of 55.58%. the variance interpretation rate of the first factor is 23.51% and smaller than the recommended value of 40%. therefore, it is considered that the data in this study are less affected by the common method deviation[24].

3.2 Descriptive Statistics and Relevant Analysis Results

Descriptive statistics of each variable item's average score and two-two correlation scores between variables

The analysis results are shown in Table 1. There is a significant positive correlation between social anxiety and cell phone addiction. There is no significant correlation between belief in a just world and cell phone addiction and social anxiety. From the results of correlation analysis, the belief in a just world is suitable for analysis as a moderating variable between social anxiety and cell phone addiction[25]. In addition, the difference analysis among demographic variables found that there was only a gender difference in cell phone addiction ($t(645) = 3.07$, $p < 0.01$, Cohen' $SD = 0.25$). male ($M=2.82$) had a stronger degree of cell phone addiction than female ($M=2.65$), so gender was taken as the control variable for analysis.

Table 1 Describe statistical and correlation analysis results

	M	SD	1	2
1 Mobile Phone Addiction	2.73	0.69	—	
2 Social Anxiety	1.42	0.59	0.18***	—
3 Justice World Beliefs	4.05	0.82	0.02	-0.001

Note: * indicates $p < 0.05$, ** indicates $p < 0.01$, *** indicates $p < 0.001$, same below

3.3 Regulatory Analysis

Since the independent variables and the regulating variables are continuous variables, it is necessary to centralize the variables by using regression analysis to estimate the interaction between them. In this study, the centralized data are obtained by calculating the standard score of each variable. Then use Hayes, compiled PROCESS and program to analyze[25] to explore the moderating effect of just world beliefs on the relationship between social anxiety and cell phone addiction after controlling sex differences. The results are shown in table 2. After controlling the gender effect, social anxiety has a significant positive predictive power for cell phone addiction ($\beta=0.18$, $p < 0.001$). belief in a just world has

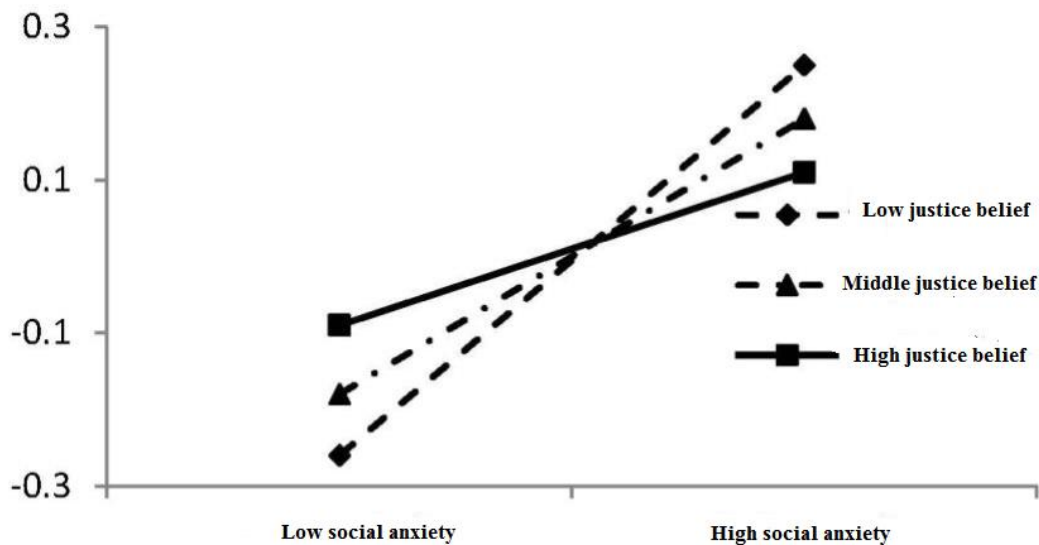
no effect on cell phone addiction ($\beta=0.01$, $p=0.79$). interaction between social anxiety and belief in a just world has a negative predictive power for cell phone addiction ($\beta=-0.08$, $p=0.02$).

Table 2 Adjust model analysis results

	β	t	95%CI
Social Anxiety	0.18	4.61***	[0.10, 0.25]
Justice World Beliefs	0.01	0.27	[-0.07, 0.09]
Social Anxiety X Justice World Beliefs	-0.08	-2.25*	[-0.15, -0.01]
Gender	0.12	3.18**	[0.05, 0.20]
R ²		0.05	
F		8.95***	

Note: the 95% confidence interval was calculated by Bootstrap method, and the gender was female as the reference group

In order to further explore how just world belief regulates the effect of social anxiety on cell phone addiction, simple slope analysis is continued, and in order to show the regulation effect more intuitively, interaction diagrams are drawn respectively by taking just world belief, Z, fractional 0 and positive and negative 1 (as shown in Figure 1). Simple slope analysis found that social anxiety had a significant effect on cell phone addiction when belief in a just world was low ($\beta = 0.26$, $t = 4.84$, $p < 0.001$). When the belief in a just world is at a moderate level, the effect of social anxiety on cell phone addiction decreases, but it is still significant ($\beta = 0.18$, $t = 4.61$, $p < 0.001$). When the belief in a just world is high, the effect of social anxiety on cell phone addiction is no longer significant ($\beta=0.10, t=1.88, p=0.06$). It can be seen that with the improvement of belief in a just world, the influence of social anxiety on cell phone addiction gradually decreases.



4. Discussion

4.1 The Effect of Social Anxiety on Mobile Phone Addiction

The results of this study found that there is a significant positive correlation between social anxiety and cell phone addiction, which is consistent with previous research results^[27-30]. An important feature of social anxiety is fear of others' evaluation. Social anxiety will have excessive and rigid self-focusing attention in the process of interacting with others, believing that others will observe and pay attention to their appearance, words and behaviors all the time, and that others will evaluate their performance at the same time. And will produce cognitive processing deviation, pay special attention to other people's facial expressions, pay attention to negative expressions, think others will give their own negative evaluation, resulting in fear when communicating with others^[31-33]. Mobile phones and the Internet mainly use text and virtual images as communication symbols, and have the characteristics of anonymity and asynchrony. In this new social communication mode, people can avoid face-to-face communication, thus reducing the possibility of

cognitive processing deviation caused by negative expressions of the other party^[34]. can have more time to consider, thus improving the communication control sense^[35], and they can also hide or control the performance of sweating, stuttering and other easily causing negative evaluations, thus making their communication in the use of mobile phones and the Internet more comfortable^[36]. Therefore, people with high social anxiety are more likely to choose mobile phones or the Internet as a substitute for real social activities, thus resulting in high dependence on mobile phones and the Internet.

4.2 The Moderating Effect of Fair World Belief on the Relationship between Social Anxiety and Mobile Phone Addiction

One of the more important innovative findings of this study is that belief in a just world plays a moderating role in the relationship between social anxiety and cell phone addiction, that is, with the improvement of belief in a just world, the predictive power of social anxiety on cell phone addiction gradually decreases and eventually disappears. The regulatory effect can be explained based on the self-regulatory effect of the belief in a just world and the "loss compensation hypothesis" of Internet addiction. According to the loss compensation hypothesis, when the normal development process of an individual is hindered, a psychological compensation process will occur. Psychological compensation is divided into two types, namely constructive compensation and pathological compensation. If the individual can overcome the obstacles and meet the needs, the constructive compensation process will be completed. On the contrary, if an individual cannot repair the hindering factors, he can only strive for development needs through inappropriate compensation methods (e.g. mobile phone use), but cannot really meet the development needs, resulting in pathological compensation process^[37]. Social anxiety is in a relatively disadvantageous position in interpersonal interaction, while the belief in a just world has a positive self-regulating effect on the development of disadvantaged individuals: the disadvantaged with a belief in a highly just world will face up to the immediate difficulties more squarely and are willing to devote their energies to the pursuit of long-term goals because they believe that their efforts will eventually be rewarded^[38]. In addition, some studies have found that belief in a just world can promote interpersonal trust, which in turn can bring them a higher sense of relationship satisfaction^[39]. Therefore, social anxiety with a high belief in a just world is more likely to actively compensate for their interpersonal barriers in a constructive way. On the other hand, social anxiety with low belief in a just world is more likely to choose to escape difficulties, retreat to mobile phones or the Internet, and suffer pathological compensation, thus leading to the occurrence of mobile phone addiction.

5. Theoretical Significance and Practical Enlightenment

This study found that belief in a just world has a buffering effect on the relationship between social anxiety and cell phone addiction. Previous researches on the self-regulation of just world beliefs have mostly focused on disadvantaged groups such as victims of various diseases, violence or disasters, and people with low social status^[40]. However, this research has verified the positive effect of just world beliefs on social adaptation in psychological troubled groups, and this discovery has widened the research scope of just world beliefs on promoting social adaptation.

There are currently two hypotheses regarding the mechanism of the just world belief in promoting social adaptation, namely, the just world belief as a personal resource or psychological buffer. The former focuses on the main effect of belief in a just world on social adaptation, while the latter focuses on the moderating effect of belief in a just world between cause and effect^[41]. The current hypothesis of personal resources has been basically verified, while the hypothesis of psychological buffering has been less verified, mainly focusing on the study of groups suffering from major disasters and changes^[42]. The results of this study found that just world beliefs have no predictive power for cell phone addiction, but only play a moderating role in the influence of social anxiety on cell phone addiction. The results verify the establishment of the psychological buffer hypothesis of belief in a just world and enrich the research results in this field.

In addition, the discovery has guiding significance for the prevention and treatment of cell phone and Internet addiction. Belief in a just world is a cognitive concept that individuals can acquire and change through learning mechanisms, so this belief can be promoted through effective means. For example, Yang Qin, through group counseling, guided

junior high school students to learn and use justice world beliefs to actively maintain strategies, thus effectively improving their justice world beliefs [43]. Therefore, clinically, it should be possible to enhance the individual's belief in a just world through certain counseling methods, so as to achieve the effect of treating and preventing social anxiety patients' cell phones and Internet addiction.

6. Conclusion

(1) There is a significant positive correlation between social anxiety and cell phone addiction, but there is no significant correlation between just world beliefs and cell phone addiction and social anxiety;

(2) Just world belief plays a moderating role in the influence of social anxiety on cell phone addiction, that is, with the improvement of just world belief, the relationship between social anxiety and cell phone addiction gradually weakens and eventually disappears.

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