

The Impact of Social Exclusion on Mobile Phone Addiction among University Students: The Chain Mediating Role of Just world Beliefs and Subjective Well-being

Xinchun Lin

Guangdong University of finance and economics, Guangzhou, Guangdong, 510000, China

Abstract: Purpose: To investigate the mediating roles of just world beliefs and subjective well-being between social exclusion and mobile phone addiction. Methods: The Social Exclusion Questionnaire for College Students, the Just World Belief Scale for College Students, the Happiness Index Scale, and the Smartphone Addiction Scale for College Students were used to measure 547 college students in Guangdong Province. Results: (1) Social exclusion and mobile phone addiction were significantly positively correlated. (2) Justice world beliefs partially mediated the effect of social exclusion on college students' mobile phone addiction. (3) Subjective well-being partially mediated the effect of social exclusion on mobile phone addiction among college students. (4) Just world beliefs and subjective well-being play a chain mediating role in the influence of social exclusion on college students' mobile phone addiction. Conclusion: Social exclusion can directly affect college students' mobile phone addiction behaviour, and can also indirectly affect college students' mobile phone addiction behaviour through just world beliefs and subjective happiness.

Keywords: Social exclusion, Mobile phone addiction, Just world beliefs, Subjective well-being, Chain mediation.

1. Introduction

Social exclusion is a common negative life event in the college student population, whether the individual is neglected in the dormitory or class, or rejected in team activities, it is a common situation in which college students suffer from social exclusion. Studies have shown that the effects of social exclusion can be mitigated in the Internet [1], and online socialisation can compensate for the lack of belonging needs of individuals suffering from social exclusion [2], but often results in mobile phone addiction [3]. This study intends to investigate the relationship that exists in the two variables of social exclusion and mobile phone addiction, as well as their mechanisms and paths of action, using school college students as research subjects.

1.1. Social exclusion and mobile phone addiction

Social exclusion is a situation in which an individual's belonging and relationship needs are not met when they are rejected by others [4]. A large number of studies in China have shown that social exclusion has a significant positive predictive effect on mobile phone addiction [3,29,30]. When an individual suffers from a higher frequency of social exclusion, it is more likely to trigger smartphone misuse and lead to problematic psychology or behaviour [5]. The "use and satisfaction" theory proposes five links, which are social factors, psychological factors, media expectations, media exposure, and need satisfaction, and the responses generated by these links are called media exposure, which is manifested in the following ways: social and psychological needs prompt individuals to generate media expectations, which make individuals pay more attention to media information to achieve the purpose of satisfying their own needs, but this will bring the individual a lot of trouble. which can have many

negative effects on the individual [6]. So individuals may choose to try to compensate for the individual's interpersonal needs through social platforms on mobile phones after suffering from social exclusion. The theory of compensatory network use proposes that mobile phones can mitigate the effects of negative emotions that arise after an individual suffers social exclusion. Therefore, Hypothesis H1 is proposed: social exclusion has a positive predictive effect on mobile phone addiction.

1.2. Social exclusion, just world beliefs and mobile phone addiction

Just world beliefs are individuals' beliefs that the world in which they live is just and orderly, and that everyone's efforts and rewards correspond [7]. Individuals' perceived social exclusion is a holistic understanding based on their surroundings, and when individuals become aware of their exclusion, they become more sensitive, are more likely to realise that they are rejected by those around them, and are more likely to perceive that they are in a state of unfairness, which in turn affects their just world beliefs [8]. Jiang (2017) and Zhou & Guo (2013) showed that social exclusion and just-world beliefs were significantly negatively correlated. On the other hand, just world beliefs are also closely related to mobile phone addiction. Cui, et al. (2022) showed that negative emotions such as anxiety and depression are one of the motives that lead to mobile phone addiction. People with lower just-world beliefs often show more anxiety, which may lead individuals to escape reality and choose mobile phones only to distract themselves. Wu Chenyang also found that just-world beliefs were effective in predicting smartphone addictive behaviours in his study of adolescents [9]. However, some scholars have also shown that there is no significant relationship between just world beliefs and mobile phone addiction [10]. Then, whether just world beliefs have any effect on mobile phone addiction or not still needs to be

further explored. This study accepts the findings of most scholars and therefore proposes the hypothesis H2: Just world beliefs play a mediating role between social exclusion and mobile phone addiction.

1.3. Social exclusion, subjective well-being and mobile phone addiction

Subjective well-being is the evaluation of one's working life and emotions by two criteria: evaluation of life situations and emotional experience [11]. According to the goal theory of subjective well-being, subjective well-being increases when an individual's needs are met[12]. However, social exclusion affects the fulfilment of individual needs. Therefore, the subjective well-being of individuals who suffer from social exclusion inevitably decreases [13]. Negative emotions such as anxiety and depression will accompany individuals suffering from social exclusion, and the generation of negative emotions will in turn inevitably affect individuals' life satisfaction[14]. Liu, et al. (2017) also showed that social exclusion can directly and negatively predict the level of subjective well-being. According to Huang (2021), individuals' subjective well-being is negatively correlated with mobile phone addiction, and when individuals experience negative emotions, they are more likely to release stress through prolonged mobile phone use. In addition, individuals with low life satisfaction tend to have poorer self-control, making it difficult to control the time and frequency of mobile phone use, which is more likely to result in mobile phone addiction[15]. Therefore, hypothesis H3 is proposed: subjective well-being mediates the relationship between social exclusion and mobile phone addiction.

1.4. Just World Beliefs and Subjective Well-Being

Research has shown that there is a link between just world beliefs and subjective well-being. Individuals' life satisfaction

and positive emotional experiences are influenced by just world beliefs, so individuals' subjective well-being may increase with just world beliefs[16]. The just world belief theory and extended attribution model state that just world beliefs construct a cognitive framework for individual attributions and influence internal attributions. When an individual encounters a problem, just world beliefs will cause the individual to prioritise internal attributions, which will lead to an increase in one's sense of control and hope, and allow the level of subjective well-being to be maintained at a reasonable level [17]. Just world beliefs affect the degree to which individuals believe that giving is rewarded, thus individuals with high just world beliefs will work harder in their work and life, allowing their level of well-being to increase[18]. Therefore, hypothesis H4 is proposed: just world beliefs and subjective well-being play a chain mediating role between social exclusion and mobile phone addiction.

2. Method

2.1. Research Subjects

This study adopts the convenience sampling method and distributes the questionnaires to a number of college students in Guangdong Province through the Internet. A total of 582 questionnaires were distributed in the study and 582 were recovered, with a 100% questionnaire recovery rate. After elimination, 547 valid questionnaires remained, with a validity rate of 93.9%. Among them, 247 were male students, accounting for 45.1%, and 300 were female students, accounting for 54.9%; 120, accounting for 21.9%, had an education level of specialist, 322, accounting for 58.8%, and 105, accounting for 19.3%, had a postgraduate degree; 239, accounting for 43.7%, had an urban origin, and 308, accounting for 56.3%, had a rural origin. The details are shown in table 1.

Table 1. Basic information of the subjects

Demographic variables	Form	Frequency	%
Gender	Male	247	45.1%
	Female	300	54.9%
Educational Attainment	Junior college	120	21.9%
	Undergraduate	322	58.8%
	Postgraduate	105	19.3%
Birthplace	City	239	43.7%
	Rural	308	56.3%
Total Number		547	100%

2.2. Research tools

2.2.1. Social exclusion questionnaire for university students

The social exclusion questionnaire for university students developed by Wu, et al. (2013) was used. The questionnaire contains 19 items and is scored on a 5-point Likert scale (never=1, always=5), with higher scores indicating that individuals experience a higher frequency of social exclusion in their lives. The alpha coefficient of this questionnaire in this study was 0.72.

2.2.2. Just World Belief Scale for College Students

The Just World Belief Scale for College Students developed by Du, et al. (2007) was used. The scale contains 19 items, of which 12 are positively scored and 7 are

negatively scored, and the scale is scored on a 5-point Likert scale (strongly disagree = 1, strongly agree = 5), with higher scores indicating that an individual possesses higher just world beliefs [19]. The alpha coefficient for this scale in this study was 0.77.

2.2.3. Happiness index scale

The index scale of happiness developed by Campbell, et al. (1976) was used. The scale is divided into two parts: the General Affective Index Scale and the Life Satisfaction Questionnaire, both of which are scored on a 7-point Likert scale, and the scores of the two subscales are computed as 1-7 and 1.1-7.7, respectively. The lowest score on the scale is 2.1, which corresponds to the "Least Happiness The lowest score on the scale was 2.1, which corresponds to "least happy" and the highest score was 14.7, which corresponds to

"happiest". The higher the score, the higher the individual's happiness. The alpha coefficient of this scale was 0.79 in this study.

2.2.4. Smartphone Addiction Scale for College Students

The smartphone addiction scale for college students developed by Su, et al. (2014) was used. The scale contains 22 items and is scored on a 5-point Likert scale (very non-compliant = 1, very compliant = 5), with higher scores on the scale indicating a higher likelihood of an individual's mobile phone addictive behaviours occurring[5]. The alpha coefficient of this scale in this study was 0.74.

2.3. Common method bias test

In this study, the common method bias test was conducted using Harman's one-factor method, and the results showed that 26 factors met the eigenvalue greater than 1, and the first factor explained 10.940%, comparing the results with the standard 40% set by Podsakoff et al. There is still a certain gap, so there is no serious common method bias in this data[20].

3. Results of the Study

3.1. Descriptive statistics and correlation analysis

The results of descriptive statistics and correlation analysis

of each variable are shown in Table 2. As can be seen from Table 2, there is a two-by-two correlation between the four variables of social exclusion, just world beliefs, subjective well-being, and mobile phone addiction. Social exclusion is significantly negatively correlated with just world beliefs and subjective well-being, and significantly positively correlated with mobile phone addiction; just world beliefs are significantly positively correlated with subjective well-being, and significantly negatively correlated with mobile phone addiction; subjective well-being is significantly negatively correlated with mobile phone addiction.

3.2. Model validation

The mediating effects of just world beliefs and subjective well-being were analysed separately using the SPSS macro program Process Model VI proposed by Hayes[21], and the results of the regression analyses are presented in Table 3, and the model diagrams are presented in Figure 1.

The bias-corrected nonparametric percentile Bootstrap method was used to test for mediating effects and the results are presented in Table 4. The upper and lower values of the 95% confidence intervals for each path are positive, i.e., the upper and lower intervals do not contain zero, which indicates that there is a significant mediation effect between just world beliefs and subjective well-being, and a significant chain mediation effect between just world beliefs and subjective well-being.

Table 2. Descriptive statistics and correlation analysis results for each variable

	M±SD	1	2	3	4
1.Social Exclusion	56.30±12.73	1	-0.16**	-0.15**	0.29**
2.Just World Beliefs	73.40±5.58	-0.16**	1	0.33**	-0.52**
3.Subjective Well-being	54.10±4.47	-0.15**	0.33**	1	-0.32**
4.Mobile Phone Addiction	50.74±7.80	0.29**	-0.52**	-0.32**	1

Note: **P<0.01, same below.

Table 3. Regression analysis of the mediation model of just world beliefs and subjective well-being between social exclusion and mobile phone addiction

Variant	Just World Beliefs			Subjective Well-being			Mobile Phone Addiction		
	β	SE	t	β	SE	t	β	SE	T
Social Exclusion	-0.07	0.19	-3.69***	-0.04	0.14	-2.50*	0.12	0.02	5.44***
Just World Beliefs				0.25	0.03	7.78***	-0.62	0.05	-11.94***
Subjective Well-being							-0.26	0.07	-3.94***
R ²		0.02			0.12			0.34	
F		13.61***			37.33***			91.76***	

Note: *P<0.1, **P<0.01, ***P<0.001, same below.

Figure 1. Chain mediating role of just world beliefs and subjective well-being between social exclusion and mobile phone addiction

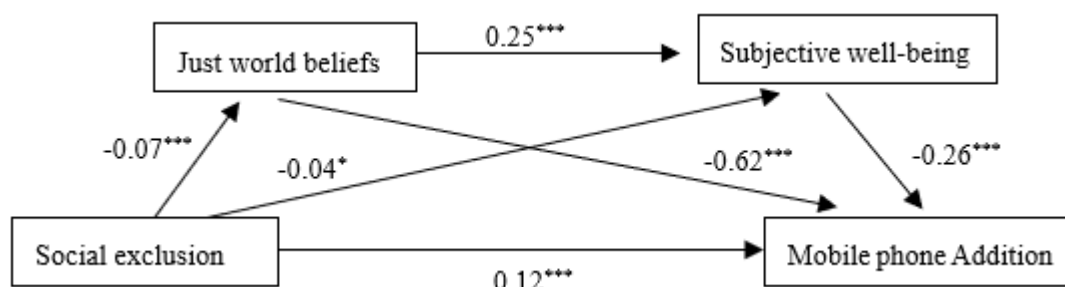


Table 4. Analysis of the mediating effects of just world beliefs and subjective well-being between social exclusion and mobile phone addiction

	Effect	BootSE	95%CI	Effect Size (%)
Direct Effect	0.12	0.02	[0.08,0.16]	67.9%
S.E.-J.-M.	0.04	0.02	[0.01,0.08]	24.4%
S.E.-S.W.-M.	0.01	0.01	[0.00,0.02]	5.3%
S.E.-J.-S.W.-M.	0.01	0.01	[0.00,0.01]	2.4%
Aggregate Intermediary Effect	0.06	0.02	[0.02,0.10]	32.1%
Aggregate Effect	0.18	0.03	[0.13,0.22]	

4. Discussion

The results of the study confirm the first hypothesis of the study that social exclusion has a positive predictive effect on mobile phone addiction. This may be due to the fact that individuals suffering from social exclusion have difficulty in satisfying their own basic needs such as belonging and choose to compensate for their lack of interpersonal needs through the virtual world of mobile phones [22]. When individuals rely excessively on mobile phones to satisfy their needs, mobile phone addiction occurs. The "use and gratification" theory [6] states that individuals will engage with different media in order to satisfy their needs, and while doing so, they will be exposed to other influences, most of which are negative.

This study also further explored the effect of social exclusion on mobile phone addiction by revealing the mediating role of just world beliefs and subjective well-being between social exclusion and mobile phone addiction. The present study first found the mediating role of just world beliefs between social exclusion and mobile phone addiction, confirming the second hypothesis of the study. Living in an excluded environment makes it difficult for individuals to think about collective interests as well as long-term interests, to get along with people as well as to trust them, and this prolonged period of being treated unjustly can easily result in lower individual just world beliefs[18]. When the individual's belief in the fair world is low, he or she will feel that he or she cannot achieve his or her goals through hard work, so he or she has no confidence to pursue his or her goals, and therefore tends to choose the virtual world of mobile phones to seek solace after being frustrated in reality[23]. Therefore, social exclusion can lead to mobile phone addiction in individuals by reducing just world beliefs and thus. The third hypothesis of the study was confirmed when this study also found that subjective well-being plays a significant mediating role between social exclusion and mobile phone addiction. This result is consistent with previous findings by other scholars that social exclusion negatively predicts subjective well-being[24] and subjective well-being negatively predicts mobile phone addiction[25]. This may be due to the fact that social exclusion is a negative event in which an individual suffers physical or psychological harm. The goal theory of subjective well-being states that the enhancement of an individual's subjective well-being is closely related to whether or not needs are met[26], and the fulfilment of an individual's needs is inhibited by social exclusion[27]. Therefore, subjective well-being is bound to decline as individuals suffer from social exclusion, which is bound to produce a large number of negative emotions. And when individuals experience negative emotions, such as loneliness and depression, i.e., when individuals experience a decrease in subjective well-being, they can only seek comfort and alleviate negative emotions through mobile phones. In

addition, the so-called "happiness" gained by individuals using mobile phones is only a short-lived happiness or satisfaction, and as time passes, individuals' moods will get worse and their subjective well-being will get lower and lower[28].

The present study also showed that there is a chain mediating effect between beliefs about a just world and subjective well-being between social exclusion and mobile phone addiction, which confirms the fourth hypothesis of the study. According to the psychological buffering hypothesis (Bert, 2006), the effects of negative events are buffered by just-world beliefs, and social exclusion is a negative event that causes physical and psychological harm to a person, whereas just-world beliefs can play a protective role, maintain subjective well-being, and can help an individual to alleviate negative emotions, such as confusion and anxiety, and to improve the sense of control over the environment. Individuals with stronger just-world beliefs have higher hopes for the future and what the world might hold, become better psychologically, and thus experience higher levels of subjective well-being themselves. After being socially excluded, an individual's original social connections are severed, resulting in a lower sense of group identity, which negatively affects the individual's just-world beliefs. In addition, the group social resources available to the individual will be reduced after social exclusion, which will also affect the individual's subjective well-being. Thus, social exclusion affects individuals' mental health by reducing just-world beliefs and subjective well-being.

5. Shortcomings and Prospects

This study has some limitations in the selection of subjects in the first place. Based on the consideration of the difficulty of collecting information from the questionnaire, so this study only considered university students in Guangdong Province when searching for subjects, so the generalisation of the findings of this study to other students and adults needs to be cautious, and more research should be carried out to confirm whether the findings of this study can be generalised. Secondly, this study was deficient in its research methodology, as only a cross-sectional study was used, without considering the covariation relationship that may be caused by time. Therefore, longitudinal study should be the future method to explore the relationship between social exclusion and mobile phone addiction among college students in depth. Finally, this study introduced just world beliefs and subjective well-being in variable selection, and other new variables can be selected in future studies to increase research on pathways to reduce mobile phone addiction. And the results of this study can also provide ideas for families and schools to intervene in mobile phone addiction and help individuals suffering from social exclusion to reduce the degree of mobile phone addiction.

References

- [1] Foley P. Does the Internet Help to Overcome Social Exclusion?. *Electronic Journal of e-Government* Volume, 2004, 2(2):139-146.
- [2] Hu., Yang., Lu&Li. The compensatory effect of WeChat on excluded people [J]. *Chinese Journal of Clinical Psychology*, 2017, 25(05):810-813.
- [3] Huang.& Liu. Social exclusion and smartphone addiction among university students in Wuhan under epidemic conditions: mediating roles of relative deprivation and depression [J]. *Chinese Journal of Clinical Psychology*, 2021, 29(06): 1327-1332.
- [4] Du.& Xia. Social exclusion in psychological perspective[J]. *Advances in Psychological Science*, 2008(06):981-986.
- [5] Su., Pan., Liu., Chen., Wang.& Li.. Preliminary development of a smartphone addiction scale for college students[J]. *Chinese Journal of Mental Health*,2014,28(05):392-397.
- [6] Liu W.(2019) The influence of negative urgency on mobile phone addiction of college freshmen and the initiating effect of social rejection [D]. Unpublished Master thesis, Shanxi Medical University.
- [7] Lerner, Melvin J. The belief in a just world: A fundamental delusion[M]. New York: Plenum Press, 1980.1256-1263.
- [8] Jiang B.(2017) The effects of social exclusion on pro-social behaviour of urban migrant children: the mediating role of just world beliefs[D]. Unpublished Master thesis, Hunan University of Science and Technology.
- [9] Wu.& He.(2021). Smartphone addiction induces "blunted" sense of acquisition in adolescents? The sequential mediating role of beliefs and gratitude in a just world[C]. Paper presented at the meeting of the Twenty-third National Psychology Conference.
- [10] Zhang., Bian., Wang.& Yu.. Effects of social anxiety on mobile phone addiction:The buffering effect of just-world beliefs[J]. *China Special Education*,2018(01):92-96.
- [11] Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125(2), 276–302.
- [12] Diener, E., & Ryan, K. (2009). Subjective well-being: A general overview. *South African Journal of Psychology*, 39(4), 391–406.
- [13] Williams K D. Chapter 6 Ostracism: A Temporal Need-Threat Model[M]. Elsevier Science & Technology, 2009.
- [14] Shao., Dong., Feng.& Zhang.. The effects of social exclusion on residents' subjective well-being: the chain-mediated effects of social identity and sense of control[J]. *Chinese Journal of Clinical Psychology*,2020,28(02):234-238.
- [15] Huang M. (2021). The effects of physical exercise on mobile phone dependence among college students: the mediating effects of psychological capital and subjective well-being[D]. Wuhan Institute of Physical Education.
- [16] Lu Z.(2020).The relationship between high school students' just world beliefs and subjective well-being [D]. Zhejiang Normal University.
- [17] Li S.(2017) .The influence of just world beliefs on subjective well-being of college students from different social class families[D]. Xihua Normal University.
- [18] Liu., Bi.& Wang.. The relationship between social support and college students' subjective well-being:the mediating role of just-world beliefs[J]. *Chinese Journal of Clinical Psychology*,2015,23(04):715-717+721.
- [19] Du., Zhu.&Li. .Preliminary development of the Just World Belief Scale for college students[J]. *Chinese Journal of Clinical Psychology*,2007(03):239-241.
- [20] Podsakoff PM, MacKenzie SB, Lee JY, Podsakoff NP. Common method biases in behavioral research: a critical review of the literature and recommended remedies. *J Appl Psychol.* 2003 Oct;88(5):879-903.
- [21] Hayes, A. F.Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. New York,NY: The Guilford Press,2013.
- [22] Saylor CF, Williams KD, Nida SA, McKenna ME, Twomey KE, Macias MM. Ostracism in pediatric populations: review of theory and research. *J Dev Behav Pediatr*,2013 May;34(4):279-87.
- [23] Wei.& Dong.. The effect of college students' just world beliefs on mobile phone addiction[J]. *Science and Education Literature Exchange (Zhongdian)*,2020(11):176-177.
- [24] Yin., Ban.& Li. The relationship between migrant children's willingness to integrate into the city, social exclusion and well-being—A case study of Guizhou Province[J]. *Journal of Anshun College*,2012,14(06):53-55.
- [25] Zhang., Wang.& Wang. .Effects of mobile phone dependence on subjective well-being of college students: the mediating role of emotion regulation self-efficacy[J]. *Journal of Baoding College*,2021,34(05):116-120.
- [26] Diener, E., & Ryan, K. (2009). Subjective well-being: A general overview. *South African Journal of Psychology*, 39(4), 391–406.
- [27] Williams, K.D. (2009). Chapter 6 Ostracism: A Temporal Need-Threat Model. *Advances in Experimental Social Psychology*, 41, 275-314.
- [28] Liu H.(2021). An Intervention Study on Writing Expression Based on Sense of Meaning of Life and Subjective Happiness on Mobile Phone Dependence of College Students [D]. Yunnan Normal University.
- [29] Zhang J. (2021).Research on the relationship between social exclusion and mobile phone addiction among college students [D]. Central China Normal University.
- [30] Xu., Zhang.,Niu., et al. The effect of social exclusion on mobile phone dependence: the mediating role of social self-efficacy and social anxiety[J]. *Chinese Journal of Clinical Psychology*, 2021, 29(02):323-327.