ORIGINAL RESEARCH

The Association Between Intolerance of Uncertainty and Mobile Phone Addiction Among Overseas Chinese Students During COVID-19: The Mediating Roles of Perceived Stress and Rumination

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Purpose: This study investigated the mechanism underlying the association between intolerance of uncertainty and mobile phone addiction among Chinese overseas students during the COVID-19 pandemic by examining the mediating roles of perceived stress and rumination.

Patients and Methods: An online questionnaire survey was distributed via social media platforms popular in mainland China. The items collected demographic information and assessed intolerance of uncertainty, perceived stress, rumination, and mobile phone addiction. A total of 249 respondents completed the questionnaire.

Results: The findings suggest a considerably high risk of mobile phone addiction in the study period among overseas Chinese students, as three-fourths of the participants may have been susceptible to mobile phone addiction according to the suggested cut-off point of the Chinese version of the Smartphone Addiction Scale–Short Form. Intolerance of uncertainty showed a significant positive direct effect on mobile phone addiction. The mediation analyses suggest that intolerance of uncertainty affected mobile phone addiction mainly through three pathways: the mediating effect of perceived stress, the mediating effect of rumination, and the chain mediating effect of perceived stress and rumination.

Conclusion: This study enhances understanding of mobile phone addiction among Chinese overseas students and suggests the mediating roles of rumination and perceived stress in the relationship between intolerance of uncertainty and mobile phone addiction. The study also provides suggestions for interventions among Chinese students overseas.

Keywords: vulnerability, mental health, health issues, internet

Introduction

The onset of the COVID-19 pandemic heralded a trend of remote work, study, and socializing that resulted in electronic devices, such as mobile phones, playing a more central role in people's lives.[1] Most people use mobile phones not only as communication tools for social contact but also as devices to boost productivity or meet their entertainment needs.[2] The frequency and duration of mobile phone use are rising, becoming risk factors for mobile phone addiction.[3–5]

Mobile phone addiction is characterized by excessive and uncontrolled use of mobile devices and has consequences for individual health and development, such as depression and anxiety, sleep quality, and academic achievement.[2,6–10] Although research on mobile phone addiction is well documented, less research has been conducted in the context of challenging external environments, such as during COVID-19, which caused considerable uncertainty and stress worldwide. This paper investigates how the mechanisms of influence of mobile phone addiction act in an external environment that is unpredictable, ambiguous, and filled with negative information and multiple stressors. Specifically, we explore

how intolerance of uncertainty (IU) influences mobile phone addiction, identify potential mediating variables, and develop sequential mediation models to evaluate all factors.

Intolerance of Uncertainty and Mobile Phone Addiction

COVID-19 had catastrophic effects on the global economy as well as on human safety and mental health.[11,12] The constant emergence of health risks due to the pandemic and the consequent social restrictions of residential lockdowns and enforced social distancing put individuals' mental health in a state of flux, with any sudden uncertainty leading to ups and downs in mood.[13] The high level of uncertainty regarding social circumstances shows great impact on individuals' lives.[14]

Individuals respond differently to the uncertainty of events, which manifests as the stable personality trait known as IU, defined as the tendency to react negatively to an uncertain event or situation independently of its probability of occurrence and its associated consequences.[15,16] People with high levels of IU may experience negative emotions as a result of an event or a situation with uncertain outcomes or situation, reacting negatively to the uncertainty or even developing dysfunctional responses.[17,18] Most individuals with high levels of IU are extraordinarily concerned with the external environment and highly susceptible to perceiving external information as a threat and developing negative beliefs.[19] As a result, IU is a vulnerability factor in several psychiatric disorders. For instance, it is highly associated with generalized anxiety disorder, obsessive-compulsive disorder, and health anxiety.[17,20–22]

IU is also a risk factor for many problematic behaviors, for example, alcohol abuse and eating disorders.[23–25] Several related studies have shown that IU also has a significant effect on internet and mobile phone addiction, for instance.[2,13] According to the model of compensatory internet use theory, people may spend a substantial amount of time online to escape from real-life problems and/or to mitigate the effects of negative emotions; for them, the internet becomes a sort of compensation for stress and adverse events.[26] On the positive side, mobile phone use allows individuals to avoid the reality that distresses them and compensates for their immediate psychological needs; on the negative side, individuals become overly dependent on the internet to the point of abuse and addiction, leaving troubling life problems and challenges unsolved.[27,28] Therefore, we propose the following:

H1: IU positively predicts mobile phone addiction.

Perceived Stress as a Mediator Between IU and Mobile Phone Addiction

The degree to which people's lives are unpredictable, uncontrollable, and overwhelmed determines perceived stress, and related research has demonstrated that IU affects individuals' perceptions of stress.[29,30] Carleton[31] identifies information processing bias as an important factor in the relationship between IU and anxiety disorders, with IU inducing a bias to classify unspecified stimuli as threatening, which results in the brain being more likely to perceive tension when processing uncertain information. In other words, those with a high IU are more prone to experiencing ambiguous stress and becoming anxious,[17,31,32] reflecting that IU is a vulnerability factor for perceived stress.[33] Previous studies also have found a positive correlation between IU and perceived stress and have indicated that IU may increase the negative impact of stressors and predict mental health problems, which in turn exacerbate perceived stress.[30,34]

In addition, recent studies have demonstrated that perceived stress is highly connected with addictive behaviors and negative emotional states, such as anxiety and depression, and that mobile phone addiction is similarly influenced by perceived stress.[35,36] According to general strain theory, negative experiences from various stresses or strains are at the root of problematic behaviors.[37] From this perspective, mobile phone addiction is a by-product of coping with stressful pain and strains.[38] Several empirical studies have also demonstrated a significant positive effect of perceived stress on mobile phone addiction.[39] Due to the pandemic, people's perceived stress was influenced not only by their previous life, learning, and employment experiences but also by the uncertainty caused by COVID-19. Uncertainty heightens perceptions of stressful life events, causing people to flee or seek solace, hence fostering an increase in mobile phone addiction.[40] This leads to the study's second hypothesis:

H2: IU positively predicts perceived stress, which in turn positively predicts mobile phone addiction, meaning that perceived stress mediates the relationship between IU and mobile phone addiction.

Stress, Rumination, and Mobile Phone Addiction

Rumination is a form of maladaptive negative thinking that is manifested primarily when people experience distress and focus constantly and repeatedly on negative situations and their consequences rather than on actively solving the problem; it can lead to a persistent state of depression.[41,42] When individuals engage in rumination, they draw negative emotional experiences from their memories, and these negative or emotionally charged emotions encourage them to recall the memories repeatedly.[43,44] Negative emotions are thus the defining characteristic of rumination.[45] During the COVID-19 pandemic, people were unable to predict when negative events and information would occur, and the changing external environment contributed to individual psychological confusion, which also prompted people to repeatedly contemplate and even exaggerate risks, generating increased fear, depression, and anxiety.[14,46,47] As mentioned earlier, IU is associated with cognitive biases, and it may prompt rumination[48] and then a reliance on mobile phones to de-stress from rumination, inspiring the third hypothesis:

H3: IU positively predicts rumination, which in turn positively predicts mobile phone addiction. In other words, rumination mediates the relationship between IU and mobile phone addiction.

The cognitive-behavioral model indicates that stressful life events are the distal cause of pathological internet use, whereas the proximal cause and central factor is maladaptive cognition.[49] Mobile phone addiction shares many qualities with pathological internet use, and the cognitive-behavioral model has been widely applied to the field of mobile phone addiction.[40] Rumination working with perceived stress as a distal factor leads to maladaptive cognitions, so those prone to rumination may develop more severe mobile phone addiction.[7] This leads to our fourth hypothesis:

H4: Perceived stress positively predicts rumination, which in turn positively predicts mobile phone addiction. Rumination mediates the relationship between perceived stress and mobile phone addiction.

If the first and fourth hypotheses are supported by the data, they suggest that high IU will lead to greater stress, leading to frequent rumination and then frequent mobile phone use, inspiring the fifth research hypothesis:

H5: Perceived stress and rumination sequentially mediate the relationship between IU and mobile phone addiction.

The Interaction of Person-Affect-Cognition-Execution (I-PACE) model may be useful in illustrating the overall relationship between these variables.[50] The I-PACE consists of two main processes and several significant factors, such as the individual's core characteristics, subjective perceptions of the situation, cognitive and emotional reactions to the situation, and decision-making behavior. In the first stage, IU (the core characteristic) influences a person's perception of stress (subjective perception) and rumination (cognitive response) during a COVID-19 outbreak (situational factor), compelling them to direct their attention to the mobile phone (decision-making). Using mobile phones, in turn, influences their assessment and decision-making processes. In the next stage, this process is repeated, eventually leading to mobile phone addiction.

To preclude confounding effects in this study, the demographic covariates of participants' gender, age, educational level, and study region were controlled in the modeling, as prior research has reported their impacts on cognitive and emotional differences and mobile phone use behaviors.[8,13,18,50]

Materials and Methods
Participants

Oversea Chinese students experiencing COVID-19 were the target population in this study. All the Participants were 18 years of age or older. Based on previous literature,[51] the sample sizes of a multiple-step multiple mediation model

normally range from 221 to 1000. Accordingly, we collected 249 valid questionnaires, which power analysis indicated was sufficient.[52]

Measures

Intolerance of Uncertainty

To assess IU, we used the Chinese version of the 12-item Intolerance of Uncertainty Scale (IUS-12), adapted from the Intolerance of Uncertainty Scale.[15,18,53] These 12 items reflect two dimensions—anticipatory anxiety and inhibitory anxiety—and are rated on a 5-point scale in which 1 indicates "Not at all characteristic of me" and 5 represents "Entirely characteristic of me". Higher scores indicate less tolerance for uncertainty. A sample item is "A small unforeseen event can spoil everything, even with the best of planning". Wu et al's study reports Cronbach's alpha values above 0.7 on the two dimensions and the whole scale of the Chinese IUS-12, indicating satisfactory reliability and validity.[53] In our study, the Cronbach's α coefficient was 0.86.

Mobile Phone Addiction

To assess mobile phone addiction, we used the Chinese version of the Smartphone Addiction Scale–Short Version.[54,55] It includes 10 items, such as "Feeling impatient and fretful when I am not holding my smartphone", and is rated on a 6-point scale from 1 ("totally disagree") to 6 ("totally agree"). Higher scores represent more severe mobile phone addiction. Lopez-Fernandez suggests a total score higher than 33 for women and over 31 for men to indicate mobile phone addiction.[56] Zhao et al report good reliability (Cronbach's α = 0.90) and validity among Chinese college students.[57] A Cronbach's α of 0.89 was obtained for this scale in our study.

Perceived Stress

The Chinese version of the Perceived Stress Scale was used to assess perceived stress.[29,58] The scale contains 14 items, including "In the last month, how often have you been upset because of something that happened unexpectedly?" A 5-point Likert scale from 1 ("never") to 5 ("very often") was used, and a higher score indicated higher perceived stress. The scale has shown good reliability (Cronbach's α = 0.87) and good construct validity with Chinese college students.[59] A Cronbach's α of 0.70 was obtained in this study.

Rumination

The Chinese version of the Ruminative Response Scale-10 was used to assess rumination.[44,60,61] Its 10 items reflect the two dimensions, reflection and brooding, and are rated on a 4-point scale (1 = "almost never"; 4 = "almost always"). A sample item is "Think 'What am I doing to deserve this'". The higher the score, the more likely one is to ruminate. A study supported the use of this scale among Chinese undergraduates, with a value of 0.75 for Cronbach's α.[62] A coefficient of 0.95 was obtained in this study. The participants were also asked to provide information on gender, age, educational level, study region, and current location.

Procedure

This study complies with the Declaration of Helsinki. The authors obtained ethical approval from the research ethics subcommittee of City University of Hong Kong (reference number: SSB5790-202203-15) before data collection. A quick-response code (QR code) to the electronic questionnaire and invitation was posted on social media platforms popular in mainland China, such as WeChat, Douban, and Xiaohongshu. Eligible overseas Chinese students (ie, 18 years old or above) accessed the questionnaire via the QR code. On the information page, all the participants were informed of their rights (eg, voluntary participation without any incentives and freedom to withdraw from the study at any time without penalty), confidentiality and anonymity, and benefits and risks. They were also informed that clicking on the "next page/continue" button implied their agreement to participate in the research with an understanding of all stated information, voluntary participation, and being 18 years of age or older. The data collection period extended from April 20 to May 20, 2022, on the Wenjuanxing survey platform. The participants usually spent around 10 minutes completing the online questionnaire.

Data Analysis

Descriptive statistics and group comparisons were conducted using SPSS 27.0 (IBM Corporation, Armonk, NY, 2020). A series of independent *t*-tests was conducted to compare group differences in IU, mobile phone addiction, and rumination to determine whether gender, study region, or age impacted the studied variables. Pearson correlation analysis was conducted to explore relationships between paired variables, controlling for the impact of gender, age, educational level, and study region.

Mplus 8.9 was used to examine the mediating effect of perceived stress and rumination on the relationship between IU and mobile phone addiction, controlling for the impact of gender, age, educational level, and study region. Fit indexes, including chi-square tests, the Steiger-Lind root mean square error of approximation (RMSEA), and the Bentler comparative fit index (CFI) and standardized root mean square residual (SRMR) were used to test the data model fit.[63–65] After the first four research hypotheses were found to be supported, a sequential mediating model was tested.

Results

Demographic Information

Table 1 shows the participants' backgrounds. A total of 249 participants completed the questionnaire, including 53 males (21.2%) and 196 females (78.7%). Two-thirds of the participants were aged 23 years or above, 67.4% possessed

Table 1 Descriptive Statistics of Overseas Chinese Students

Variables			t	p
Gender	Male	Female		
Frequency	53	196		
Mobile phone addiction	3.85 (0.94)	4.03 (0.98)	−1.20	0.23
IU	3.06 (0.52)	3.10 (0.64)	−0.42	0.68
Perceived stress	2.91 (0.51)	3.02 (0.44)	−1.56	0.12
Rumination	2.31 (0.52)	2.26 (0.61)	0.54	0.59
Age (years)	18–22	23 or above		
Frequency	82	167		
Mobile phone addiction	4.04 (0.95)	3.97 (0.98)	−0.56	0.57
IU	3.25 (0.60)	3.02 (0.61)	−2.77	< 0.01
Perceived stress	3.04 (0.47)	2.97 (0.44)	−1.23	0.22
Rumination	2.37 (0.64)	2.23 (0.57)	−1.73	0.08
Educational level	Bachelor	Master or above		
Frequency	59	190		
Mobile phone addiction	4.19 (0.77)	3.93 (1.02)	−2.08	< 0.05
IU	3.21 (0.61)	3.06 (0.62)	−1.60	0.11
Perceived stress	3.09 (0.42)	2.96 (0.45)	−1.91	0.06
Rumination	2.41 (0.67)	2.23 (0.57)	−1.99	< 0.05
Study region	HK/MO/TW	Other		
Frequency	175	74		
Mobile phone addiction	4.01 (1.00)	3.93 (0.90)	0.66	0.51
IU	3.11 (0.64)	3.07 (0.55)	0.41	0.68
Perceived stress	2.96 (0.46)	3.07 (0.42)	1.69	0.09
Rumination	2.27 (0.61)	2.29 (0.55)	−0.26	0.80

Note: Values in parentheses represent standard deviations.
Abbreviations: HK, Hong Kong, Special administrative region of China; MO, Macao; TW, Taiwan; IU, intolerance of uncertainty.

a master's degree, and 70.2% were currently studying in Hong Kong, Macao, or Taiwan. Notably, 189 participants (75.9%) were susceptible to mobile phone addiction, as their mobile phone addiction scores exceeded the cut point.

Independent sample t-tests indicate that the age group of 23 years and above reported significantly lower IU than the younger group ($t = -2.77, p < 0.01$). Participants with a bachelor's degree reported statistically significantly higher rumination ($t = -1.99, p < 0.05$) and mobile phone addiction ($t = -2.08, p < 0.05$) than those with a master's or higher degree.

Hypothesis Tests

Table 2 lists the means, standard deviations, and correlations of the studied variables, controlled for the impact of gender, age, educational level, and study region. All the variables were statistically positively correlated with one another ($r_s > 0.26$, $p_s < 0.01$). H1, "IU positively predicts mobile phone addiction", is supported.

Figure 1 shows the findings for H2. Perceived stress mediated the relationship between IU and mobile phone addiction ($\chi^2 = 7.99$; $p = 0.09$; RMSEA = 0.06; CFI = 0.96; SRMR = 0.05) after the impacts of gender, age, educational level, and place of study on mobile phone addiction were controlled. The regression coefficient from IU to mobile phone addiction was not significant after adding perceived stress ($\beta = 0.21$, $p = 0.07$), indicating a mediating role of perceived stress in the relationship between IU and mobile phone addiction.

Figure 2 presents the findings for H3. Rumination was a significant mediator of the relationship between IU and mobile phone addiction ($\chi^2 = 1.74$; $p = 0.78$; RMSEA < 0.001; CFI = 1.0; SRMR = 0.02) after we controlled for the influence of gender, age, educational level, and school area. IU did not exhibit a direct effect on mobile phone addiction after adding rumination to the model ($\beta = 0.05$, $p = 0.67$). The hypothetical mediating role of rumination is supported (H3).

Rumination was also a significant mediator of the relationship between stress and mobile phone addiction ($\chi^2 = 4.83$; $p = 0.31$; RMSEA = 0.03; CFI = 0.99; SRMR = 0.03) after we controlled for the influence of gender, age, educational level, and school area (Figure 3). Stress did not exhibit a direct effect on mobile phone addiction after adding rumination to the model ($\beta = 0.41$, $p = 0.09$). Rumination completely mediated the relationship between stress and mobile phone addiction. H4 is supported.

We went further to examine H5 (Figure 4). The fit indexes suggested good model data fit ($\chi^2 = 11.04$; $p = 0.20$; RMSEA = 0.04; CFI = 0.99; SRMR = 0.04) and that the impact of IU on mobile phone addiction would go through perceived stress and then rumination, while part of IU impact would directly go through rumination. There was no significant prediction from perceived stress to mobile phone addiction ($\beta = 0.41$, $p = 0.08$). H5 is supported.

Discussion

The present study integrated general strain theory, compensatory internet use theory, and the I-PACE model to understand the mechanism underlying the relationship between IU and mobile phone addiction. We examined if IU was associated with mobile phone addiction among overseas Chinese students during COVID-19 and the mediated role and a chain mediation model of perceived stress and rumination in the relationship between IU and mobile phone addiction.[26,37,50] The Results show that the four studied variables were positively correlated. Both perceived stress and rumination were significant mediators when IU was used to predict mobile phone addiction. Further analysis indicated that the impact from IU went directly through rumination to predict mobile phone addiction and that part of IU's impact passed through perceived stress and then rumination to influence mobile phone addiction.

Table 2 Partial Correlations Between Variables

	M	SD	1	2	3	4
1. Intolerance of uncertainty	3.10	0.62	1.00			
2. Perceived stress	2.99	0.45	0.44**	1.00		
3. Rumination	2.28	0.59	0.59**	0.51**	1.00	
4. Mobile phone addiction	3.99	0.97	0.26**	0.34**	0.40**	1.00

Note: **$p < 0.01$.

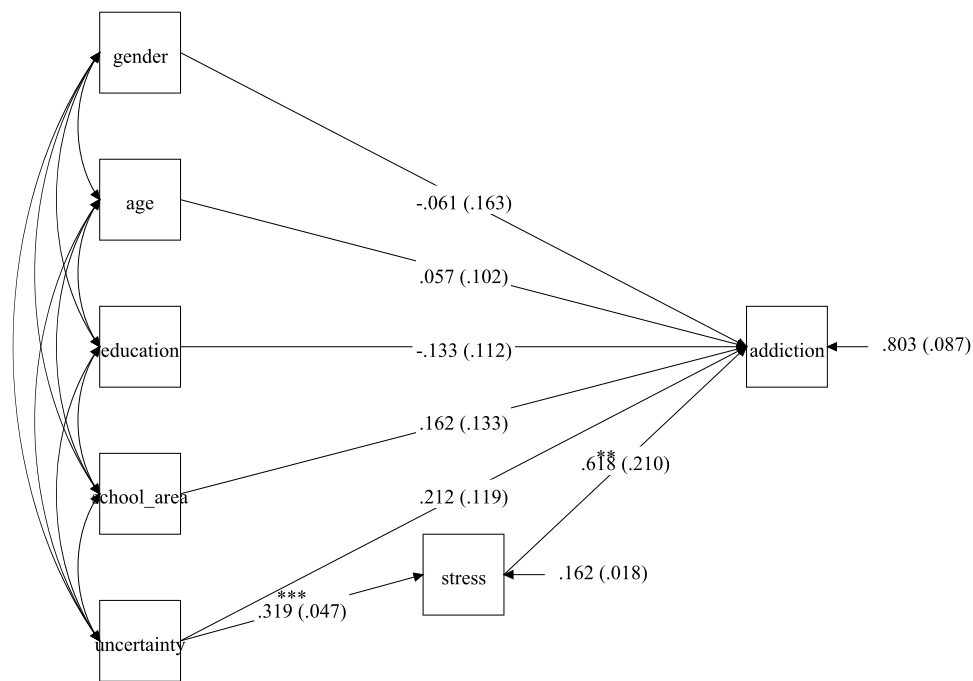**Figure 1** The mediating model of perceived stress in the relationship between intolerance of uncertainty and mobile phone addiction. **p < 0.01; ***p < 0.001.
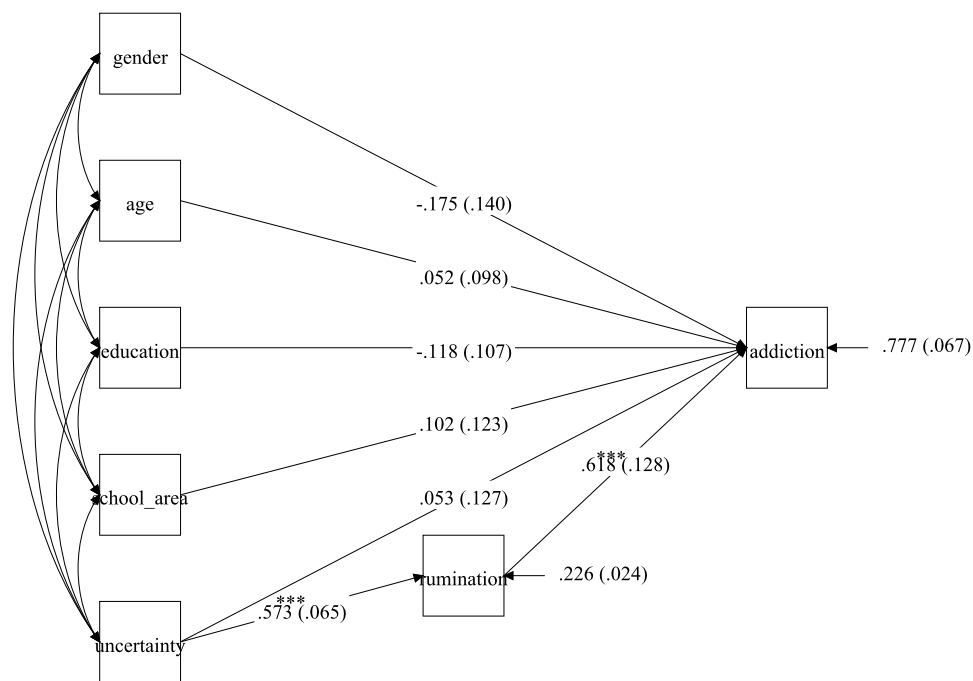

Figure 2 The mediating model of rumination in the relationship between intolerance of uncertainty and mobile phone addiction. ***p < 0.001.

Compensatory internet use theory suggests that excessive mobile phone use is a compensatory strategy for mitigating individuals' decreased distress tolerance and increased anxiety induced by environmental factors.[26] Based on this theory, when individuals face fear and uncertainty from the environment (eg, during COVID-19), they are prone to use mobile phones as a compensatory strategy to relieve restlessness and anxiety.[26] In particular, individuals with high IU would be more inclined to use mobile phones as a compensatory strategy, eventually leading to mobile phone addiction.[2]
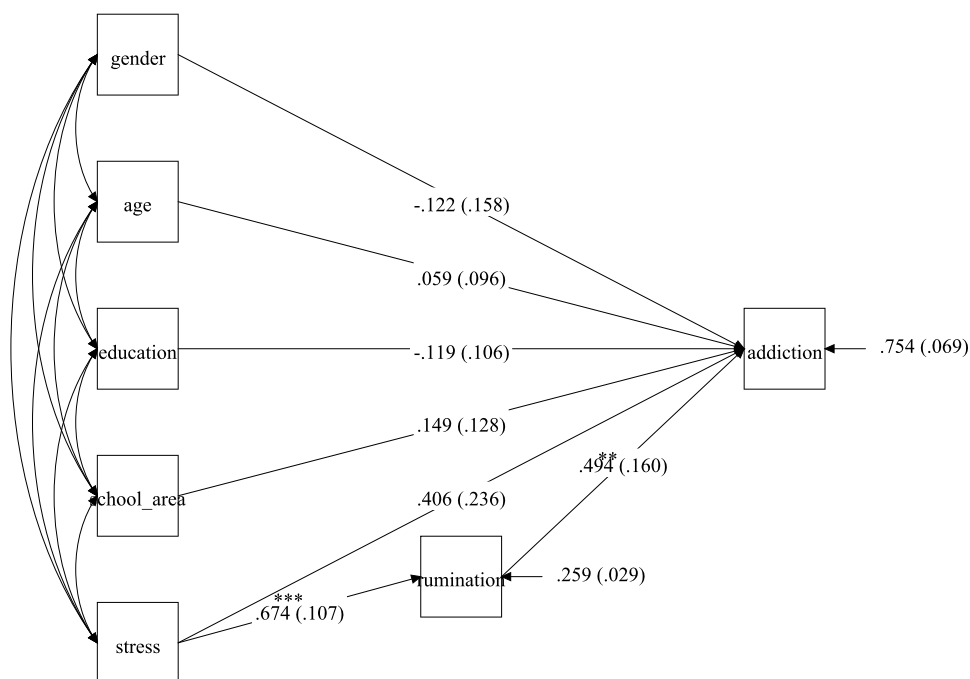
Figure 3 The mediating model of rumination in the relationship between perceived stress and mobile phone addiction. **p < 0.01; ***p < 0.001.
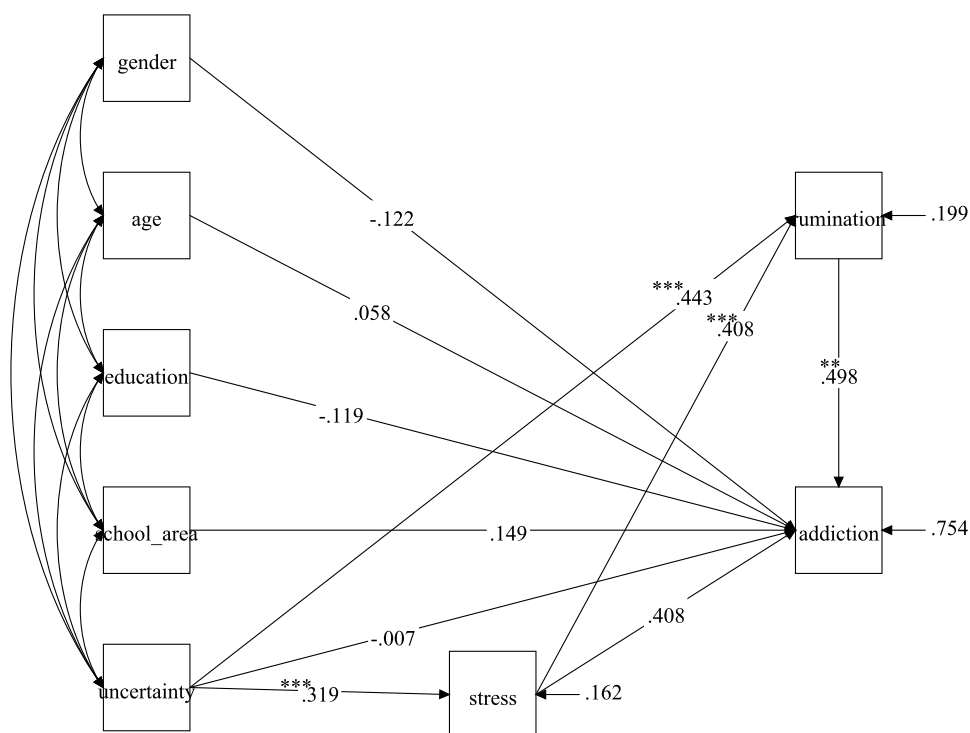

Figure 4 The sequential mediating model. **p < 0.01; ***p < 0.001.

Consistent with compensatory internet use theory and previous studies,[66,67] our study found a positive relationship between IU and mobile phone addiction. We also found that around 76% of our participants potentially had a mobile phone addiction problem.[2] In other words, higher IU among overseas Chinese students may drive higher mobile phone engagement and increase vulnerability to mobile phone addiction, meriting further investigations of the mechanism

underlying the link between IU and mobile phone addiction. The present study narrowed a knowledge gap by examining the mediating effects of perceived stress and rumination.

Before testing the constructed model, we investigated the relationship between the predictor and the mediator, namely perceived stress. Previous research has indicated that IU is associated with negative cognitive outcomes, such as hopelessness, which is a significant predictor of perceived stress among college students.[68–70] We might speculate that individuals with high IU were more prone to worry about the presence of stressors (eg, whether they would get COVID-19) during the pandemic, which in turn triggered feelings of uncertainty and increased their perceived stress.[39] Two studies on university students in Turkey have shown that IU may cause procrastination and affect the proactive career behaviors of these students and can bring about negative consequences, such as increased perceived stress.[71,72] Furthermore, during COVID-19, overseas college students experienced severe stress and depression due to the loss of normal campus life and interpersonal communications.[73] Oversea Chinese students may have faced severe pressure because of the prejudice against China after the outbreak of COVID-19.[74] Thus, according to general strain theory, feeling hopeless against real-life pressure might have impelled them to escape reality by using mobile phones, eventually developing mobile phone addiction. Individuals with high COVID-19 IU would have felt more stressed, leading to a higher risk of mobile phone addiction.[37]

The study also suggests a mediating role of rumination between IU and mobile phone addiction. People with high IU are more prone to develop negative thinking patterns, such as overestimating risk, and habitually ruminative people are more susceptible to such pessimistic predictions.[75,76] Also, the students' cognitive adjustment (such as rumination) was related to excessive mobile phone use.[77] Consistent with previous studies, we found that people with high IU were more likely to ruminate and that rumination may further aggravate mobile phone addiction.

The present study adopted the I-PACE model to propose a sequential mediator model to enhance understanding of mobile phone addiction, examining the chain mediating effect of perceived stress and rumination on the relationship between IU and mobile phone addiction.[50] As anticipated, the predicted effect of IU on mobile phone addiction among Chinese international students was initially mediated by both perceived stress and rumination. The direct effect of IU on mobile phone addiction was not significant after including perceived stress and rumination in the model. Also, rumination completely mediated the association between perceived stress and mobile phone addiction.[50] In other words, mobile phone addiction can be explained by the interaction effect between personal (uncertainty intolerance), cognitive (stress perception and rumination), and executive (coping style) factors in the I-PACE model.[50] It is concluded that, during the COVID-19 pandemic, individuals with high IU may have been more likely to experience stress than those with low IU, which made them more prone to ruminate, thus exacerbating their use of mobile phones as an avoidance strategy and increasing the likelihood of mobile phone addiction.

Contributions

The present study not only contributes to theoretical understanding of the phenomenon of mobile phone addiction but also has practical implications. The proposed chain mediation model provides a basis for guiding college students to weaken mobile phone addiction caused by an uncertain environment and to use mobile phones rationally. As previous research has shown that social support is effective in coping with perceived stress, Measures such as group counseling could provide social support to college students to reduce their perceived stress, leading to less frequent use of mobile phones.[78] In addition, cognitive-behavioral therapy could be offered to reduce college students' rumination so as to mitigate mobile phone addiction.

Limitations

A few Limitations in this study must be addressed. First, the convenience sampling method may restrict the generalizability of the results. Most participants were studying in Hong Kong, Macao, or Taiwan, and their experiences may have differed from those of overseas students in North America or Europe. In addition, children and teenagers are more prone to mobile phone addiction than young adults.[79,80] Therefore, future research could validate our findings by increasing the sample size and age range of participants.

Second, as a cross-sectional study, this research revealed only correlations between variables and not causality. In future research, longitudinal designs and clinical trials may be employed to clarify the temporal and causal associations between the variables.

Third, an online questionnaire and self-reported measurements were used in this study to measure mobile phone addiction. However, most people underestimate their mobile phone usage and thus report less time and frequency of mobile phone use.[81] Future research may try to use objective measurements, such as screen time recorded by mobile phone systems, to record mobile phone usage more accurately.

Conclusion

This study investigated how IU was associated with mobile phone addiction among Chinese students overseas during COVID-19. A positive association between IU and mobile phone addiction was confirmed, and mediating roles of perceived stress and rumination in this relationship were found. We further conducted a sequential mediating model and found that IU would increase perceived stress, leading to increased rumination and a stronger tendency of frequent use of a mobile phone. Practitioners and educators could consider offering training on coping strategies (eg, how to reduce stress and restructure thinking patterns) for students with high IU. Such training might help to reduce students' dependence on their mobile phone, thus preventing problematic usage.

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Disclosure

The authors report no conflicts of interest in this work.

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