



Research paper

The Association Between Perceived Stress and Mobile Phone Addiction in COVID-19 Epidemic: The Role of Rumination and Self-Control

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Abstract

This study aimed to examine the mediating role of rumination and self-control in the link between perceived stress and mobile phone addiction during the COVID-19 epidemic. The present study was conducted using a correlational method and a structural equation modelling approach. The statistical population of the study included Tehran province college students 230 people were selected voluntarily and answered the online scales including Depression-Anxiety-Stress, Smartphone Addiction, Ruminative Responses and Self-Control. The results of the structural equation model showed that during the COVID-19 pandemic, perceived stress predicts the student's addiction to cell phones positively. Rumination plays a mediator role between perceived stress and cell phone addiction. Moreover, self-control moderates the effect of the mediator role between perceived stress on rumination, and the effect of rumination on cell phone addiction.

Keywords: COVID-19, mobile phone addiction, perceived stress, rumination, self-control

Introduction

The current COVID-19 pandemic has revealed itself to be one of the most devastating and deadliest health crises in recent history. Governments worldwide were forced to implement several mitigation procedures, including social distancing, isolation, and quarantine. While these measures are needed to prevent the continuous spread of COVID-19, they contrast with the basic human need for social connection and may, therefore, contribute to the development of mental health problems. (Luttenbacher et al., 2021). During the period of staying home for epidemic prevention, smartphones may become one of the main tools for individuals to search for information, communicate with others and seek entertainment. Excessive reliance on electronic communication to kill time, escape from real-life problems, or relieve negative emotions may lead to mobile phone addiction (Huang et al., 2021). According to the general strain theory, problematic behaviours mainly result from the negative experience brought on

by various stress or tensions (Agnew, 1992). The high contagiousness of COVID-19 pandemic has increased the perceived stress of the general public which may increase the incidence of addictive behaviour (Wang et al.,2021). Davis (2001) proposed the cognitive behavioural model to explain the development and maintenance of pathological Internet use (PIU), which indicates that the distal contributory causes of PIU are stressful life events (i.e., COVID-19 epidemic), a necessary condition for the formation of PIU, and the proximal contributory causes is maladaptive cognitions (i.e., rumination), a sufficient condition for the formation of PIU. According to the strength model of self-control (Baumeister et al., 2007) purports that individual resources of self-control are limited. When one's psychological resources have been exhausted, a state of depletion results in failure in following tasks requiring self-control. The present study aimed to examine the underlying mediation (rumination) and moderation (self-control) mechanisms between perceived stress and mobile phone addiction among college students in the context of COVID-19 epidemic.

Method

The present study was a correlation type and used structural equation modelling. The population of the research consisted of all students aged 18 to 50 at the University of Tehran in 2022, from which 347 individuals were selected through voluntary sampling. The research scale was designed online and distributed on social networks related to the University of Tehran students. After 15 days, 347 individuals responded to the research scales. Of this number, 230 individuals who had mobile phone addiction were screened. (66.70 men and 33.30 women). Participants were assured of the confidentiality of their information and ethical considerations were also observed in demographic specifications. The data was analyzed using version 22 of the SPSS software.

Tools

Tangney Self-Control Scale: This scale was created by Tangney et al. (2004) for two dimensions of self-control with 13 items, including impulse control and self-discipline. Participants rated these items on a five-point scale. The higher the score, the higher level of self-control. Tangney et al. (2004), obtained the convergent validity of this scale 0.77 and its reliability with Cronbach's alpha method on two samples of 0.83 and 0.85. In the present study, the Cronbach's alpha coefficient reliability of this scale was 0.81.

Depression-Anxiety-Stress Scale(DASS_21): The scale was created by Lovibond and Lovibond (1996) to measure the level of depression, anxiety, and stress in individuals. The scale consists of 21 items that are scored on a 4 point Likert scale. A higher score -indicate higher perceived stress. Lovibond et al 1995 reported the convergent validity of this scale (and its reliability for the stress subscale 0.91. In the present study, the reliability coefficient of the stress subscale was obtained as 0.91 using Cronbach's alpha method.

Rumination Reflection Scale (RRS): Nolen-Hoeksema and Morrow (1991) for measuring individuals' rumination designed this 22 items questionnaire with a four-point Likert scale. A higher score indicates a greater level of rumination. Nolen-Hoeksema et al. reported its reliability by Cronbach's alpha coefficient of 0.88 to 0.92, and They reported a reliability

coefficient of 0.67 for the retest. In the present study, Cronbach's alpha coefficient reliability of this scale was 0.71.

The Smartphone Addiction Scale: this scale was created by Hyun Yong Koo in 2009 and consists of 20 questions. The scale is classified in a Likert 5-point scale, where a score higher than 70 indicates addiction to mobile phones. The reliability of this scale has been reported by Koo HY as 0.92 using Cronbach's alpha method. In the present study, the reliability of this scale was found to be 0.70 using Cronbach's alpha method.

Results

The results indicate that if self-control is a mediating variable and rumination is a moderating variable, the relationship between perceived stress and mobile phone addiction is positive and significant ($p < 0.05$ and $\beta = 0.47^*$). Additionally, self-control has a positive and significant effect on the relationship between perceived stress and rumination ($\beta = 0.88^*$ and $p < 0.05$).

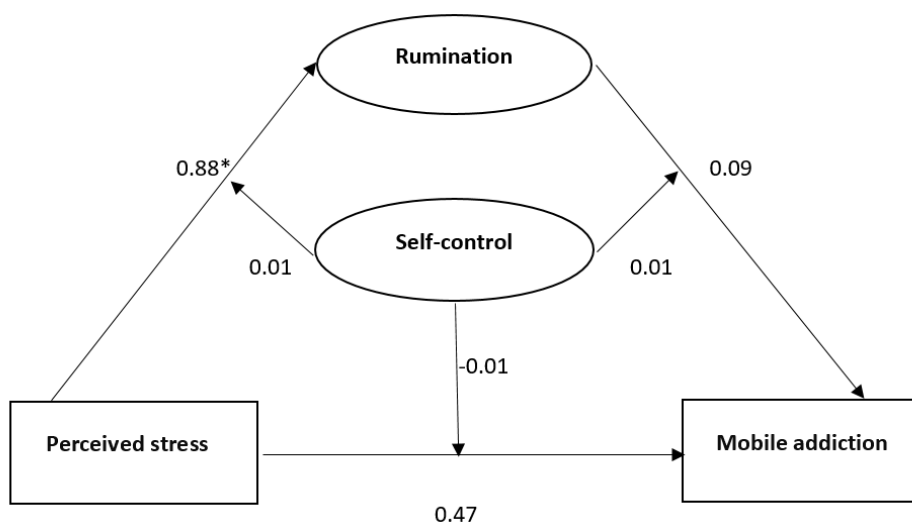


Figure 1: structural equation modelling

Discussion and Conclusion

The prevalence of pandemics usually leads to various physical and psychological problems due to the fear of contracting the virus and mandatory quarantine. During pandemics like COVID-19, experiencing stress is natural and inevitable. Excessive use of mobile phones and virtual space to reduce stress and prevent negative news about COVID-19 can lead to a perceived reduction in stress. Increased rumination about this disease and its consequences can act as a mediator for increasing mobile phone addiction and the relationship between perceived stress and mobile phone addiction. Increased self-control as a moderator can lead to a reduction in the relationship between perceived stress and mobile phone addiction. The present study was only conducted on the student population, and generalization to other groups should be done

with caution. Furthermore, in future studies, longitudinal or experimental designs can be used for greater accuracy in results.

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Conflicts of interest

The authors found no conflict of interest.



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