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Maladaptive Cognitive Emotion Regulation Strategies As Predictors Of Smartphone Addiction Among Students With Disabilities

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Abstract:

Smartphones addiction has crossed the barrier of taking drugs or the like, that it is more dangerous, powerful, fast and deadly, as it threatens the mind, soul and body. The aim was to investigate the role of maladaptive cognitive emotion regulation strategies in predicting smartphone addiction among students with disabilities. In this study, it was assumed that maladaptive cognitive emotion regulation strategies and negative emotion would predict smartphone addiction. Participants were 140 individuals with disabilities. The data were analyzed with Pearson correlation and multiple regression. Catastrophizing, self blame, other blame and rumination showed a significant positive correlation with smartphone addiction. Each of the four independent variables made significant individual contributions to the prediction of smartphone addiction (SA) .

Keywords: Catastrophizing, self blame, other blame , rumination, students with disabilities.

Introduction

Smartphones are no longer just mobile phones, but act like a computer and provide information. They also have many diverse functions such as communication, camera, multimedia player, Internet browsing, e-mail services, facilitating the process of social communication, and games (Eissa and Khalifa, 2020).

smartphone addiction (SA) is a state of psychological disorder that makes it difficult for a person to separate and stay away from the smartphone, and we often find a person resorting to the smartphone without a need, or a specific apparent reason. Smartphone addiction is not included in the diagnosis name presented in DSM-5 , but excessive behavioral patterns that can induce addiction without directly using substances such as alcohol or drugs . It is considered as a type of behavior addiction with This behavioral addiction is known to have similar effects to the activation of the brain's reward system by substance use(APA,2013).

There are signs of SA, which is that you find a person who is very keen to check his phone periodically in a short time, and is keen to have the phone with him everywhere, and anywhere even in the bathroom, and feels happy when using the mobile phone, or just by looking at it, he/she is isolated from family and friends, and suffers from neck aches resulting from poor posture, in which the individual sits for long hours, uses the phone, and feels very sad when the phone is taken from him/her(Alosaimi, Alshahwan, Alyahya, Al Mahyijari and Shaik,2020).

Relying on the smartphone and its various applications is necessary for most peoples. Smartphone is an essential means that no person can dispense with in the twenty-first century. It is through the smartphone, a person can manage many things in his life and spend many of his interests and the expiration of various services that he achieves. Were it not for the smartphone, and in a faster time, without effort and waste of time, and with amazing ease in the push of a button, it is considered the best in the field of money, business and managing life affairs, including social communication, which took a virtual form such as relying on chat programs and social networking instead of the conventional social form (Eissa,2020; Gezgin,2021)

Despite the development in perception of addiction, there are no officially recognized diagnostic criteria for smartphone addiction, so it was discussed whether phone addiction falls under mental disorders in DSM-5. There is a team sees that the use of the smartphone uncontrollably and frequently leads to social, behavioral, and

emotional problems, but in general DSM-5 includes that smartphone addiction is a separate disorder. This fact does not mean that this disorder does not exist. As the construction of this behavioral disorder is still not clear, of course it will take some time to understand the full impact of smartphones, because the technology of the smartphone itself is relatively recent, and the impact must be carefully considered in the context of our world contemporary (Tuncay,2021).

Cognitive emotion regulation strategies and smartphone addiction

Smartphone addiction is emerging as a social problem as smartphone use expands along with these reality-avoiding motives (APA,2013)It is easy to fall into addiction as a means to reduce negative emotions and escape from problematic situations due to the inability to effectively control emotions in stressful situations (Jiyoon,2018).

Humans think about their experiences before, after, or during emotional experiences, and these thoughts affect the meaning and intensity of emotions. In this context, Eissa and Khalifa(2020)used the term cognitive emotion regulation, which is information that is emotionally aroused in order to regulate and control emotions without being overwhelmed by the emotions experienced in stressful situations. refers to cognitive handling of. In the end, it can be said that the meaning and intensity of emotional experience varies depending on which type of cognitive emotion regulation strategy is used. Garnefski, Van den, Tessa, Vivian, Jan, Jeroen and Onstein (2002)developed the Cognitive Emotion Regulation Questionnaire (CERQ) to more systematically understand how the cognitive factors or cognitive coping methods used in the immediate situation regulate emotions. Cognitive emotion regulation strategies are largely divided into adaptive strategies and maladaptive strategies. Adaptive strategies seek to positively and broadly consider and accept problem situations experienced by individuals, and solve problems or change situations. It is an adaptive coping strategy, such as examining how to do it . A maladaptive strategy is a strategy for coping maladaptively, such as blaming oneself or others for a problem situation, thinking about negative aspects and thinking that one's experience is the worst (Schäfer, Cibils , de Moura ,Tavares, Arteche and Kristensen,2018). In particular, based on research reports(Garnefski et al.,2002)that maladaptive cognitive emotion regulation strategies are closely related to the complaints and exacerbations of psychopathological symptoms, this study will focus on the role of maladaptive cognitive emotion regulation strategies.

Problem statement

Smartphones addiction has crossed the barrier of taking drugs or the like, that it is more dangerous, powerful, fast and deadly, as it threatens the mind, soul and body. University students are among the most targeted age groups with communication technology and among the most popular in acquiring and using smart phones, where they spend a large part from their time in using it, and being preoccupied with its many applications, mobile phone companies are racing to provide smart devices at cheap prices, which helped in its wide spread among students, which helped increase the number of users of it.

Aims

The aim was to investigate the role of maladaptive cognitive emotion regulation strategies in predicting smartphone addiction among students with disabilities.

Hypotheses

H1. There will be a significant relationship between Maladaptive cognitive emotion regulation strategies and smartphone addiction among students with disabilities.

H2. Maladaptive cognitive emotion regulation strategies will predict smartphone addiction among students with disabilities.

H3. Maladaptive cognitive emotion regulation strategies will collectively contribute to smartphone addiction among students with disabilities.

Research method

Research model

In this study, it was assumed that maladaptive

cognitive emotion regulation strategies and negative emotion would predict smartphone addiction, and based on this, a research model as shown in [Figure 1] was established.

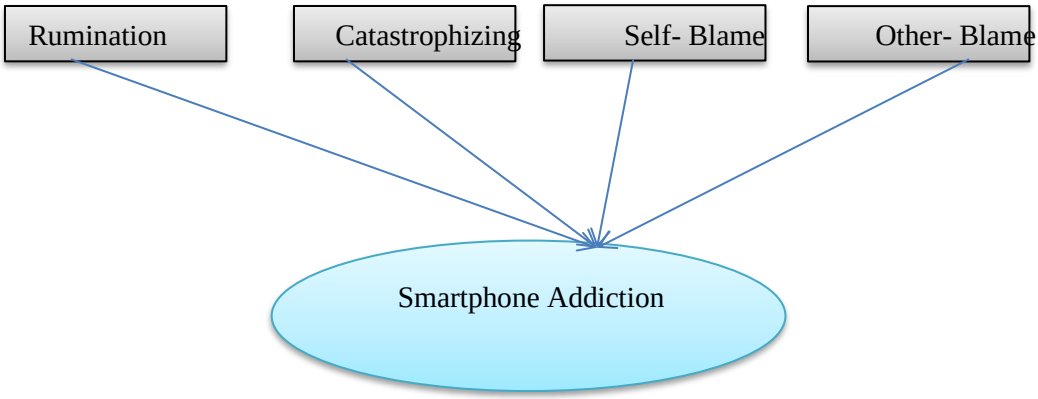

Figure 1. Research model

Sample

A convenience sampling method was used to recruit adolescent participants in this study. The inclusion criteria were as follows: adolescents with learning disabilities (n=120, 90 males, 75% and 30 females, 25%) , adolescents with physical disabilities such as amputees of the upper or lower extremities, paralyzed(n=6 males), adolescents with mild intellectual disabilities(n=10males), with ASD(n=4 males). Participants were 140 individuals with disabilities (females, n= 30, 21.42%, and males 110, 78.58%). They all possess a mobile phone .Subjects participated on a voluntary basis. Informed and written consent was obtained from all participants. They aged from 14-18 years (M= 16.65, SD= 8.23). (see table 1.)

Table 1. General characteristics of study subjects

Type of disability	Number	Percentage
learning disabilities	120	85.71%
physical disabilities	6	4.28%
intellectual disabilities	10	7.14%
Autism spectrum disorder	4	2.85%

Instruments

The maladaptive cognitive emotion regulation strategy scale included in CERQ was used(Eissa and Kamel,2020). The sub-factors consist of catastrophizing, self blame, other blame and rumination, and each sub-factor consists of 4 items. 'Self-blame' and 'blaming others' refer to reproaching oneself or blaming others for an event, while 'rumination' refers to reflecting on the emotions associated with a negative event. and 'catastrophzing' is thinking that you have had a much worse experience than others. The response method was a Likert 5-point scale. The higher the score, the greater the use of maladaptive cognitive emotion regulation strategies. The Test-retest coefficients reported by Eissa and Kamel(2020) ranged from 0.76 to 0.81 for the four factors of maladaptive cognitive emotion regulation.

Smartphone addiction Scale.(Eissa,2020). It is a 6 items with a 6-point Likert scale from 1 = strongly disagree, 6 = strongly agree. Total scores typically range from 6 – 36. Content Validity was achieved as there were significant differences between heavy and light users ($p < .001$). The internal reliability of the scale was good ($\alpha = 0.82$).

Research Design

This research study is quantitative, based on a predictive relational design, which examines whether some variables predict a criterion variable. In this study, the predictive variables are catastrophizing, self blame, other blame and rumination(MCERS). The predicted variable is smartphone addiction.

Data Analysis

The survey data were analyzed in SPSS (v. 22.0). The data were analyzed with Pearson correlation and multiple regression. Multiple regression was used to explore the relative contributions of maladaptive cognitive emotion regulation strategies to the prediction of smartphone addiction among students with disabilities.

Procedure

For this study, data were collected by requesting an online survey. The author recruited applicants between the ages of 14 and 18 who wished to participate by posting a guide to participating in the study on the website of the survey. Among the study participants, those who did not use a smartphone were excluded. Participants were only allowed to participate in the survey if they had read and agreed to the explanation of the purpose and significance of the study, anonymity and confidentiality of responses. There is no ethical committee in the institution in which this study was conducted but the ethical code of Qassim University in Saudi Arabia was followed. Informed consent was obtained from all subjects involved in the study . Participants were only allowed to participate in the survey if they had read and agreed to the explanation of the purpose and significance of the study, anonymity and confidentiality of responses.

Results

Descriptive statistics and correlation of research variables

To understand the general characteristics of the major research variables, the mean and standard deviation of the variables were calculated, and skewness and kurtosis were calculated and presented in table 2 to check whether the multivariate normal distribution assumption was satisfied. According to Kline(2011), if the absolute values of skewness and kurtosis do not exceed 3 and 10, respectively, it can be judged that the normal distribution assumption is satisfied, and kurtosis ranged from .11 to .83, indicating that there was no problem with multivariate normality. In addition, as a result of confirming multicollinearity for regression analysis, the tolerance of major research variables was .60-.84 and the variance inflation factor (VIF) was 1.18-1.64, within the range to suspect multicollinearity (tolerance <. 10, VIF>10) It was judged not to be included in (Kline,2011). The results of correlation analysis between variables are presented in table 2. As a result of the correlation analysis, catastrophizing, self blame, other blame and rumination showed a significant positive correlation with smartphone addiction (r=.388, p<.001), (r=.550, p<.001), (r=.480, p<.001), and (r=.394, p<.001), respectively.

Table 2. Correlation of study variables

variable	1	2	3	4	5
catastrophizing					.388***
self blame					.550***
other blame					.480***
rumination					.394***
smartphone addiction					
average	16.32	15.98	17.22	17.53	30.21
Standard Deviation	2.3	1.07	3.11	2.21	1.92
skewness	.49	.11	.31	.50	-.02
kurtosis	.79	-.11	.39	-.57	.80

***p<.001.

MCES as predictors

Results presented in table 3 show that the MCERS when put together yielded a coefficient of multiple regression (R) of 0.771 and a multiple correlation square of 0.770. This shows that 77% of the total variance in SA of those who participated in the study is accounted for by the combination of MCERS. The table also indicates that the analysis of variance of the multiple regression data produced an F-ratio value significant at 0.05 level (F(4, 134) = 12.312; P < 0.01).

Table 3. The regression results of the Predictors and the Outcome Measure Model Summary b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change statistics				
					R Square change	F Change	Df1	Df2	Sig. F change
1	0.604a	0.771	0.770	0.03491	0.239	12.312	4	134	0.000

a. Predictors: (Constant), MCERS

b. Dependent Variable: SA.

Table 4 Summary of Multiple Regression Analysis between the Predictors Variables and the Outcome Measure.

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6502.542	4	3251.274	12.312	0.000b
	Residual	864.22	134	432.110		
	Total	8031.121	139			

a. Predictors: (Constant), MCERS

b. Dependent Variable: SA.

As shown in table 5, each of the four independent variables made significant individual contributions to the prediction of SA . The results indicated that the following beta weights which represented the relative contribution of the independent variables to the prediction were observed. catastrophizing (b = 0.658, t = 20.015; P < 0.000) , self blame (b = 0.147, t = 6.252, P < 0.000), other blame(b = 0.191, t = 6.613, P < 0.000), and rumination(b = 0.252, t = 6.378, P < 0.000) .

Table 5. Relative Contribution of the Independent Variables to the Prediction of job burnout. Coefficients a

Model	Unstandarized coefficients		Standarized coefficients	t	sig
	B	Std error	Beta		
1 (constant)	0.058	0.020		2.854	.005
catastrophizing	0.658	0.033	0.654	20.015	0.000
self blame	0.147	0.024	0.143	6.252	0.000
other blame	0.191	0.029	0.184	6.613	0.000
rumination	0.252	0.040	0.334	6.378	0.000

a. Predictors: (Constant), MCERS

b. Dependent Variable: SA.

Table 6 The Decision on the Hypotheses

Hypothesis	Decision

H1. There will be a significant relationship between Maladaptive cognitive emotion regulation strategies and smartphone addiction among students with disabilities.	Accepted
H2. Maladaptive cognitive emotion regulation strategies will predict smartphone addiction among students with disabilities.	Accepted
H3. Maladaptive cognitive emotion regulation strategies will collectively contribute to smartphone addiction among students with disabilities	Accepted

Discussion

The aim was to investigate the role of maladaptive cognitive emotion regulation strategies in predicting smartphone addiction among students with disabilities. According to the results, maladaptive emotion regulation strategies lead to problematic smartphone.

Smartphone addiction in adults reduces work efficiency and increases the risk of smartphone addiction in children, which has a large ripple effect on the family and society as a whole(Kumcagiz,2019). Therefore, by paying attention to the prevention and treatment of smartphone addiction in adults, it is expected that it will contribute to the improvement of mental health and productivity in our society as a whole.

Although some studies some studies(e.g. Begara Iglesias, 2018; Gutiérrez and Martorell, 2011; Palmer et al., 2012) show that people identified with mild intellectual disability use mobile phones less frequently than their non-disabled (ND) peers in Spain and the USA, Students in this study use mobile phones more frequently to a degree that we can describe them as addicted.

These results were consistent with that of Garnefski et al.(2017) who reported that Somatic complaints were also significantly related to a more frequent use of maladaptive cognitive coping strategies, such as blaming oneself, ruminating, and catastrophizing about negative life events. And those of Kökönyei et al.(2019) who reported that maladaptive emotion regulation strategies (including self-blame, other blame, catastrophizing, and rumination) were positively related to problematic online gaming. Catastrophizing, self blame, other blame and rumination, as specific maladaptive emotion regulation strategies have been shown to have a prominent role in developing SA(Lee et al., 2020; Rozgonjuk and Elhai, 2018).

This was consistent with Hyunsuk and Bae (2017) who reported that the greater the burden and the feeling of being overwhelmed by the current situation, the greater the fear and anxiety about the situation, the inability to cope with the stressful situation, and depression along with helplessness. As a countermeasure, it can be said that they fall into a smartphone. The results was also consistent with those of Al-Natour, Al-Ajlouni, and AlKhamra(2021) who reported that the impact of smartphone use dominated the social and emotional aspects

This study showed that when maladaptive cognitive emotion regulation strategies are used ore, ten, it can be said that smartphone addiction can be aggravated. If you rely excessively on emotion regulation strategies, you may experience unpleasant and negative emotions such as anxiety, depression, and shame or experience pain. This is in line with previous research reports (e.g. Goo-Chul and Min-Guk ,2017;Hyunsuk and Bae ,2017;Saerom,2014). It can be said that increases in the use of maladaptive cognitive emotion regulation strategies leads to addiction to smartphones in order to escape from a negative psychological state.

By using maladaptive cognitive emotion regulation strategies such as blaming oneself or others, reflecting on one's mistakes or thinking catastrophically about difficulties in stressful situations, they experience more negative emotions and become smartphone addiction. For students with disabilities who continue to use maladaptive cognitive emotion regulation strategies, an emotional mindfulness counseling approach will be helpful to revise the maladaptive cognitive emotion regulation strategies. Considering that maladaptive cognitive emotion regulation strategies such as self- or others blaming, rumination, and catastrophe may be a

means of cognitively avoiding emotional pain, accept the emotions you experience as they are. Maladaptive emotion regulation strategies has a negative indication for mental health, and it could also be relevant and effective in cognitive-behavioural interventions (Butler et al., 2018).

Conclusion

The results of the present study draw attention to maladaptive cognitive emotion regulation strategies and how they affect smartphone addiction among students with disabilities. The findings entail important implications for mental health prevention. Prevention programs that help to understand negative consequences of maladaptive cognitive emotion regulation strategies such as rumination or catastrophizing could be useful in developing healthier ways of handling everyday negative emotions in students with disabilities. So it is recommended that in order to smartphone addiction among students with disabilities, researchers should pay attention to factors such as maladaptive cognitive emotion regulation strategies. Future studies should try and gather longitudinal data. People who are characterized by higher levels of maladaptive cognitive emotion regulation will probably use the smartphone to escape from their unregulated negative affective states.

suggestions

Prevention should focus on decreasing smartphone addiction, besides promoting adaptive cognitive emotion regulation strategies. To further understand the mechanisms underlying smartphone addiction, future research should use longitudinal methods as well as experimental paradigms.

Limitations

Some limitations in this study should be mentioned. in this study, only maladaptive cognitive emotion regulation strategies were included among the cognitive emotion regulation strategies. In the case of the adaptive cognitive emotion regulation strategy, considering that research reports that it can act as a protective factor to reduce the tendency to smartphone addiction by buffering perceived stress and research reports that it is not (Ye-Ji,2016). It will be necessary to verify the effectiveness of the cognitive-cognitive emotion regulation strategy. Self-reported questionnaires for data collection have obvious biases such as shared method variance. Future studies should collect this information using other sources of information less prone to this type of bias such as the interview process, peer review or reports from parents and/or teachers. A correlation design was used which prevents reliable draw inferences about causality between variables.

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