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ORIGINAL ARTICLE

Experiential Avoidance in the Relationship between Depression, Anxiety, Stress, and Smartphone Addiction*

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Main Points

- The current study explores the relationships among depression, anxiety, stress, experiential avoidance, and smartphone addiction.
- The results revealed that experiential avoidance acts as a mediator in the link between depression, anxiety, stress, and smartphone addiction.
- Higher levels of depression, anxiety, and stress are linked to a greater level of smartphone addiction, both directly and indirectly, through experiential avoidance.
- Based on the study results, it can be argued that depression, anxiety, stress, and experiential avoidance are risk factors for smartphone addiction.
- These findings shed light on the impact of depression, anxiety, stress, and experiential avoidance on the comprehension and prevention of smartphone addiction.

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Abstract

While the strong correlation between negative emotional experiences such as depression, anxiety, stress, and smartphone addiction, is well-established, understanding the mechanisms that mediate this relationship remains limited. The aim of this study is to investigate the mediating role of experiential avoidance in the relationships between depression, anxiety, stress, and smartphone addiction in university students. A sample of 546 university students from various regions of Türkiye participated in this study (426 females [78.3%] and 120 males [21.7%]). The Depression Anxiety Stress Scale, Multidimensional Experiential Avoidance Questionnaire, and Smartphone Addiction Scale Short Version were employed for data collection. Structural equation modeling was employed for data analysis. After controlling for age and gender, the results revealed (i) significant positive associations between depression, anxiety, stress, experiential avoidance, and smartphone addiction; and (ii) experiential avoidance mediated the effects of depression, anxiety, and stress on smartphone addiction. These findings shed light on the effects of depression, anxiety, stress, and experiential avoidance on the comprehension and prevention of smartphone addiction.
Keywords: Anxiety, depression, experiential avoidance, smartphone addiction, stress

Introduction

The ubiquity of smartphones, coupled with their multifunctionality, has rendered them indispensable in daily routines. By 2023, global smartphone users numbered 5.3 billion, with projections indicating an increase to 6.2 billion within the next 5 years (Statista, 2023). Despite the convenience they afford, excessive and unintended smartphone usage can give rise to issues such as SA (Sohn et al., 2019), internet addiction, and cybersex addiction (Meng et al., 2022), among others. Alongside many problems caused by smartphones, SA is reported to be quite prevalent among university students in particular (Chen et al., 2017; Sohn at al., 2019).

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Termed problematic smartphone use or excessive smartphone usage in academic discourse, SA manifests as uncontrolled and disproportionate reliance on smartphones (Sohn et al., 2019). It encompasses compulsive phone usage, tolerance (an increased need for prolonged and intensified usage), withdrawal symptoms (feelings of agitation or distress upon separation from the device), and impaired functionality (Chen et al., 2017). Although there is no consensus in the literature, SA is commonly viewed as a behavioral addiction similar to other technology addictions (Meng et al., 2022). However, recent meta-analytic findings suggest that SA is markedly more widespread (at 26.9%) than other forms of technology addiction (Meng et al., 2022). This underscores the distinct significance of SA within the landscape of technological dependencies.

Research indicates that SA is linked to various physical and mental health issues among university students (Bong & Kim, 2017; Matar & Jaalouk, 2017). A meta-analysis has revealed that SA correlates with heightened levels of depression, anxiety, perceived stress, and diminished sleep quality (Sohn et al., 2019). A systematic review conducted by Elhai et al. (2017) found that problematic smartphone use was related to depression, anxiety, chronic stress, and low self-esteem. Consequently, exploring factors contributing to the escalation of SA holds clinical and scholarly significance, given its potential adverse impacts on individuals.

Negative internal states such as depression, anxiety, and stress stand out as key antecedents of SA. The extensive literature review highlights numerous research findings demonstrating the link between these variables (Elhai et al., 2017; Sohn et al., 2019). Among the theoretical frameworks explaining this relationship, the theory of Compensatory Internet Use (CIU) stands out. According to this theory, the internet and related technologies, including online gaming, function as coping mechanisms for individuals to assuage negative emotions and fulfill social needs. In other words, individuals may turn to online activities as a means to escape real-life challenges or alleviate dysphoric moods (Kardefelt-Winther, 2014a, 2014b).

Smartphones hold a unique significance compared to other technological devices owing to their widespread usage, accessibility to diverse online activities such as internet browsing, gaming, and communication, as well as their capacity to ensure privacy. Within this framework, smartphones have a compensatory effect in addressing internal challenges. Moreover, depression, anxiety, and stress are pivotal in precipitating SA. Previous research findings confirm the predictive effect of depression, anxiety, and stress on SA (Bong & Kim, 2017; Gao et al., 2018). For example, Gao et al. (2018) conducted a study with 1105 university students and found that depression, anxiety, and stress had a positive predictive effect on mobile phone addiction. Similarly, another study identified depression and anxiety as significant predictors of SA among university students (Matar & Jaalouk, 2017). In light of these findings, depression, anxiety, and stress emerge as critical risk factors in the development of SA among university students, potentially exerting a positive predictive influence on its onset.

Acceptance and Commitment Therapy (ACT) leverages experiential avoidance (EA) mechanisms to elucidate various problematic behavioral patterns. Within this framework, EA stands out as a fundamental mechanism driving individuals to shun distress and constrict their psychological adaptability (Hayes et al., 1999). Hayes et al. (1996) define EA as the inclination of individuals to evade discomfort-inducing experiences such as bodily sensations, emotions, memories, and thoughts. Unlike conventional avoidance behaviors, EA pertains specifically to internal experiences. Though often construed as detrimental, EA may initially serve as a coping mechanism for managing specific negative internal states, providing short-term relief (Hayes et al., 1996). However, prolonged reliance on this tendency across diverse contexts can erode individuals' autonomy and restrict their life choices over time (Hayes et al., 2012). Hayes et al. (1999) posit that EA manifests in various forms, including engaging in risky sexual behaviors and excessive alcohol and substance use, and plays an important role in the development of numerous psychopathologies, notably addiction. Extensive literature reviews indicate that EA correlates with various forms of addiction, such as tobacco dependence, problematic alcohol consumption, and substance addiction (Garey et al., 2016; Levin et al., 2012; Shorey et al., 2017). Research among adolescents suggests a link between EA and addictive behaviors involving internet usage, mobile phones, and video games (García-Oliva & Piqueras, 2016). Moreover, multiple studies underscore the association between EA and SA (Bong & Kim, 2017; Ko & Kwak, 2018). Given the widespread availability of smartphones, their privacy features, and multifunctionality, they can serve as a refuge from distressing internal stimuli, potentially fostering addiction over time. Indeed, research confirms the predictive influence of EA on SA (Bong & Kim, 2017; García-Olivia & Piqueras, 2016; Ko & Kwak, 2018). Furthermore, there is compelling evidence suggesting that depression, anxiety, and stress exacerbate EA (Bong & Kim, 2017; Litwin et al., 2017; Shahar & Herr, 2011). These negative internal states often engender intense internal experiences, prompting individuals to seek avoidance strategies. Consequently, heightened levels of depression, anxiety, and stress may correspond to increased tendencies towards experiential avoidance.

Experiential avoidance comprises two fundamental components: first, the individual's reluctance to engage with distressing subjective experiences (such as bodily sensations, emotions, and thoughts), and second, the adoption of strategies to evade or regulate these experiences (Hayes et al., 1996). In this context, EA serves as an explanatory framework for understanding the link between distressing subjective experiences (such as depression, anxiety, and stress) and problematic behaviors (such as SA). Research suggests that individuals inclined to avoid distressing subjective experiences tend to exhibit heightened levels of problematic behaviors. For example, a study involving female university students revealed that EA had a significant mediating role on the relationship between negative emotions and emotional eating (Litwin et al., 2017). In another study, EA was found to mediate the relationship between perceived stress and tobacco dependence (Garey et al., 2016). Bong and Kim (2017) found that EA has a partial mediating effect on the relationship between life stress and SA among nursing college students. In another study, EA had a mediating effect on the relationship between anxious attachment and SA among university students (Ko & Kwak, 2018). In another study, it was determined that EA partially mediated the relationship between perceived stress and problematic smartphone use among university students (Zhang & Wang,

2022). Consequently, smartphones may serve as a means to circumvent distressing subjective experiences.

The Present Study

In line with prior literature and pertinent theories (ACT, and CIU), this study investigates whether EA functions as a mediator in the association between depression, anxiety, stress, and SA among university students. To address this objective, the following hypotheses were examined (visualized in Figure 1):

H_1: Depression, anxiety, and stress would be directly associated with greater SA.

H_2: Depression, anxiety, and stress would be directly associated with greater EA.

H_3: Experiential avoidance would be directly associated with greater SA.

H_4: Depression, anxiety, and stress would be indirectly associated with greater SA via greater EA.

Material and Methods

Participants

The study's sample group comprised 546 university students (120 [21.7%] males and 426 [78.3%] females) enrolled in several universities in Türkiye. The convenience sampling, a non-random sampling method, was used in the selection of participants. This method aims to reduce the expenditure of time, money, and labor by considering the accessibility of the research group (Büyüköztürk et al., 2016). The sample size was estimated to be 384 participants using Krejcie and Morgan's (1970) table. Moreover, a minimum sample size of 200 participants is recommended for structural equation modeling (SEM) analyzes (Kline, 2005). The present study meets the criteria for the required sample size. The ages of the participants ranged between 18 and 32, and their average age was 22.65 (standard deviation [SD] = 3.23). Among the total students, 22 (4.0%) were preparatory, 88 (16.6%) were in their first year, 60 (11.0%) were in their second year, 40 (7.3%) were in their third year, 51 (9.3%) were in their fourth year, nine (1.6%) were in their fifth year, and four (.7%) were in their sixth year.

Measurements

Depression Anxiety Stress Scale

The original form of the scale, developed by Lovibond and Lovibond (1995) consisted of 42 items. Yılmaz et al. (2017) adapted it to Turkish and shortened it. The scale consists of 21 items, including three dimensions: depression, anxiety, and stress. The Depression Anxiety Stress Scale-21 uses a 4-point Likert scale ranging from "never" to "almost always." Researchers have stated that people with high scores on the scale indicate a higher level of the respective dimension. The Cronbach's alphas were .68 for "depression," .66 for "anxiety," and .61 for the "stress." The Cronbach's alphas were .89 for "depression," .86 for "anxiety," and .88 for "stress" in this study.

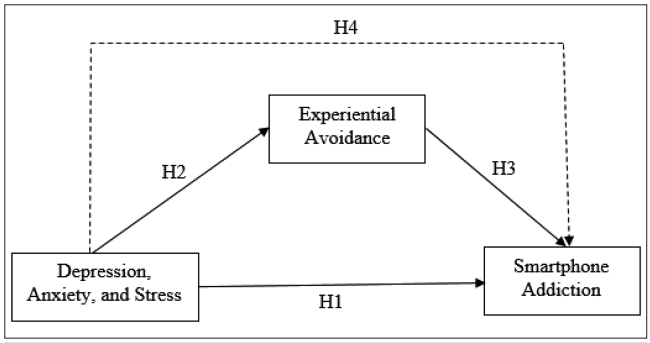

Figure 1. Proposed Mediation Model.

Multidimensional Experiential Avoidance Questionnaire

The scale developed by Sahdra et al. (2016) was adapted into Turkish by Ekşi et al. (2018). The scale consisted of 30 items, including six dimensions: behavioral avoidance, distress aversion, distraction and suppression, procrastination, repression/denial, and distress endurance. The MEAQ uses a 7-point Likert scale ranging from "strongly disagree" to "strongly agree," with high scores on the scale indicating higher level of experiential avoidance. The Cronbach's alpha of the subscales ranged between .78 and .81. The Cronbach's alpha of the subscales ranged between .64 and .90 in this study.

The Smartphone Addiction Scale

Participants' SA has been assessed with the 10-item scale developed by Kwon et al (2013). The scale uses a 6-point Likert scale ranging from "strongly disagree" to "strongly agree" with high scores on the scale indicating higher level of SA. The short version of the SAS was adapted into Turkish by Noyan et al. (2015), with a reliability coefficient of 0.91. The current study's Cronbach's alpha was 0.90.

Procedure

Prior to commencing data collection, ethical approval was obtained fromSocial and Humanities Ethics Committee of Dicle University (Approval no.: E-14679147-663.05-475938; Date: April 05, 2023). The study utilized scales transferred to an online platform via Google Forms, with corresponding invitation links generated. These links were disseminated across social media platforms between March and April 2023. Eligible participants were university students aged between 18 and 32. Clear information regarding the study's purpose, voluntary participation, confidentiality measures, and participants' right to withdraw was provided through an informed consent form. To mitigate potential issues such as practice effects, fatigue, or response bias stemming from the utilization of multiple measurement tools, the scales were administered in varied sequences during data collection sessions.

Data Analysis

The study employed the SPSS 22 (IBM SPSS Corp.; Armonk, NY, USA) and AMOS 19 software packages. Descriptive statistics and correlation analyses were conducted using SPSS 22, while SEM analyses were carried out with AMOS 19. Given the online data collection method, no missing data were encountered. Before initiating data analysis, assessments for both univariate and multivariate normality were conducted. Univariate normality was deemed acceptable if skewness and kurtosis values fell within the range of −1.5 to +1.5. As indicated in Table 1, all variables met the criteria for univariate normality. Furthermore, multivariate normality necessitated a multiple kurtosis value below 10 (Collier, 2020). To ensure adherence to multivariate normality assumptions, 31 outliers were identified and removed from

Table 1.
Preliminary Analysis

	1	2	3	4	5
1. Depression	1				
2. Anxiety	.63**	1			
3. Stress	.72**	.64**	1		
4. Experiential avoidance	.43**	.35**	.44**	1	
5. Smartphone addiction	.44**	.43**	.50**	.44**	1
Mean	7.94	6.65	8.80	116.19	27.67
Standard deviation	5.99	5.31	5.48	24.21	11.70
Skewness	.56	.64	.25	-.07	.56
Kurtosis	-.30	-.43	-.68	-.20	-.31

**$p < .01$.

the dataset using the Mahalanobis distance method, ultimately achieving multivariate normality (multiple kurtosis = 9.73).

In the SEM analyses, the Maximum Likelihood estimation method was employed, utilizing a two-step approach recommended by Kline (2005). This approach aids in identifying potential errors originating from the measurement model. To form latent variables, observed variables were generated using the parceling method proposed by Little et al. (2002). Items from the SAS and the DASS-21 were randomly distributed to create parcels. Similarly, the six sub-dimensions of the MEAQ were parceled to construct latent variables. Since past studies indicated that age and gender could affect SA, both variables were included as control variables in the structural model (Chen et al., 2017; Van Deursen et al., 2015).

The goodness of fit of the tested model was assessed using various indices, including χ^2/df, RMSEA (Root Mean Square Error of Approximation), CFI (Comparative Fit Index), NFI (Normed Fit Index), GFI (Goodness of Fit Index), and SRMR (Standardized Root Mean Square Residual). Acceptable goodness of fit was indicated by χ^2/df values less than five, CFI, NFI, and GFI values greater than .90, and SRMR and RMSEA values less than .08 (Hu & Bentler, 1999; Kline, 2005). In the mediation analysis, Hayes' (2013) Bootstrap method was employed. This method involves increasing the sample size to analyze both direct and indirect effects. To establish the significance of the indirect effect, CIs should not encompass zero. In this study, a bootstrap coefficient of 5000 was set, and findings were evaluated based on a 95% CI.

Results

Preliminary Analysis

The preliminary analyses of the research variables are summarized in Table 1. Examination of skewness and kurtosis values indicates that the research data are normally distributed. Additionally, the correlations between variables were investigated. It is seen that depression is positively and meaningfully correlated to EA (r = .43, $p < .05$) and SA (r = .44, $p < .05$). Anxiety is positively and meaningfully correlated to EA (r = .35, $p < .05$) and SA (r = .43, $p < .05$). Stress is positively and meaningfully correlated to EA (r = .44, $p < .05$) and SA (r = .50, $p < .05$). Finally, EA is positively and meaningfully correlated to SA (r = .44, $p < .05$).

Measurement Model

The measurement model comprised five latent variables (depression, anxiety, stress, experiential avoidance, and SA) and 15 observed variables. For depression, anxiety, and stress, two parcels were created, while three parcels were formed for SA. Experiential avoidance was constructed using the sub-dimensions of the relevant scale. Initially, the goodness of fit values for the tested model did not fall within an acceptable range (χ^2/df = 4.68, GFI = .89, CFI = .94, NFI = .92, RMSEA = .09, SRMR = .08). Consequently, the distress tolerance sub-dimension of the MEAQ, which exhibited factor loadings below .40, was removed from the model. Upon repeating the analysis, it was observed that the goodness of fit values for the tested model now fell within an acceptable range (χ^2/df = 4.12, GFI = .93, CFI = .96, NFI = .95, RMSEA = .07, SRMR = .06). Additionally, all factor loadings of the observed variables were found to be significant ($p < .05$).

Mediation Analysis

Three mediation models were developed in accordance with the research hypotheses. These models included depression, anxiety, and stress as independent variables, EA as the mediator variable, and SA as the dependent variable. Mediation analyses were performed using the bootstrapping method, with gender and age included as control variables.

The tested model pertaining to the mediating role of EA in the relationship between depression and SA is depicted in Figure 2. Inspection of Figure 2 reveals that all factor loadings of the observed variables are statistically significant for each latent variable ($p < .05$). The tested mediation model demonstrates an acceptable model fit (χ^2/df = 4.29, GFI = .94, CFI = .95, NFI = .93, RMSEA = .07, SRMR = .07). As a shown Figure 2, the path between depression and EA is significant ($\beta = .57$, $p < .001$), as is the direct path between depression and SA ($\beta = .20$, $p < .001$). Additionally, the path between EA and SA is significant ($\beta = .46$, $p < .001$). Finally, it was determined that the indirect path between depression and SA is significant ($\beta = .27$, $p < .001$, CI = .181/.369). This finding suggests that EA mediated the association between depression and SA.

The tested model pertaining to the mediating role of EA in the relationship between anxiety and SA is depicted in Figure 3. Inspection of Figure 3 reveals that all factor loadings of the observed variables are statistically significant for each latent variable ($p < .05$). The tested mediation model demonstrates an acceptable model fit (χ^2/df = 4.22, GFI = .94, CFI = .94, NFI = .93, RMSEA = .07, SRMR = .07). As a shown Figure 3, the path between anxiety and EA is significant ($\beta = .48$, $p < .001$), as is the direct path between anxiety and SA ($\beta = .26$, $p < .001$). Additionally, the path between EA and SA is significant ($\beta = .44$, $p < .001$). Finally, it was determined that the indirect path between anxiety and SA is significant ($\beta = .21$, $p < .001$, CI = .136/.300). This finding suggests that EA mediated the association between anxiety and SA.

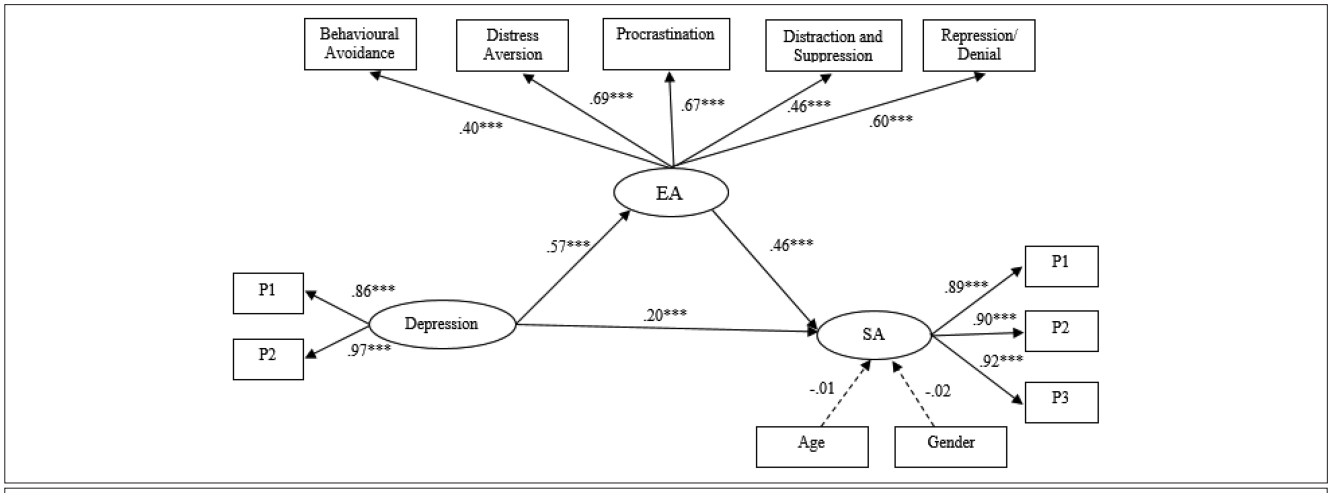

Figure 2. Testing the Mediator Role of EA in the Relationship between Depression and SA. Standardized values were used to report effects. The model fit: χ^2/df = 4.29, GFI = .94, CFI = .95, NFI = .93, RMSEA = .07, SRMR = .07.

The tested model pertaining to the mediating role of EA in the relationship between stress and SA is depicted in Figure 4. Inspection of Figure 4 reveals that all factor loadings of the observed variables are statistically significant for each latent variable ($p < .05$). The tested mediation model demonstrates an acceptable model fit (χ^2/df = 3.97, GFI = .94, CFI = .95, NFI = .94, RMSEA = .07, SRMR = .07). As a shown Figure 4, the path between stress and EA is significant ($\beta = .60$, $p < .001$), as is the direct path between stress and SA ($\beta = .32$, $p < .001$). Additionally, the path between EA and SA is significant ($\beta = .37$, $p < .001$). Finally, it was determined that the indirect path between stress and SA is significant ($\beta = .22$, $p < .001$, CI = .136/.326). This finding suggests that EA mediated the association between stress and SA.

Discussion

In this study, the initial step involved examining the relationships between the relevant variables, followed by testing the mediating effect of EA in the relationship between depression, anxiety, stress, and SA. Drawing from the relevant theoretical background and existing research, EA was hypothesized to act as a mediator between maladaptive behaviors adopted to mitigate the impact of aversive internal experiences (Bong & Kim 2017; Garey et al., 2016; Litwin et al., 2017). Notably, this study represents the first attempt to investigate the mediating role of EA in the relationship between depression, anxiety, stress, and SA among Turkish university students. The findings from this study lend support to the four tested hypotheses. Specifically, the results indicate that individuals with elevated levels of depression, anxiety, and stress have higher levels of SA (H_1). This aligns with prior research suggesting that heightened levels of depression, anxiety, and stress may indeed act as risk factors for the onset and exacerbation of SA (Bong & Kim, 2017; Gao et al., 2018; Matar & Jaalouk, 2017). According to the CIU theory, the internet, including online activities like gaming, serves as a significant coping mechanism for individuals to manage negative emotions and fulfill social needs (Kardefelt-Winther, 2014a, 2014b). Given the widespread usage of smartphones, which provide access to various online activities such as browsing, gaming, and social media, individuals experiencing high levels of depression, anxiety, and stress may turn to their smartphones to alleviate the impact of these negative emotions. The findings obtained in this study align with the

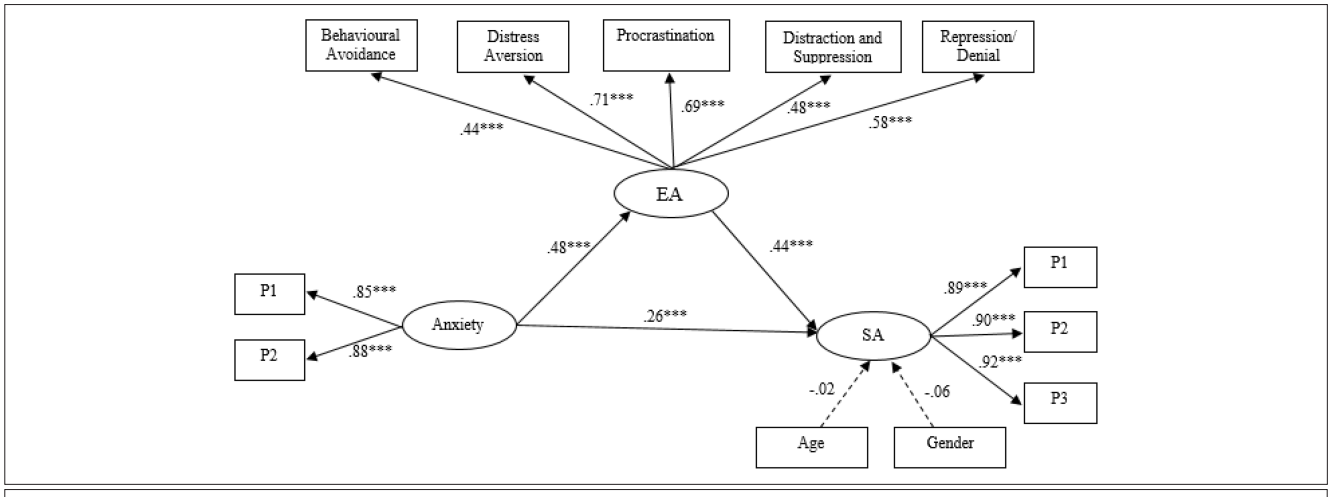

Figure 3. Testing the Mediator Role of EA in the Relationship between Anxiety and SA. Standardized values were used to report effects. The model fit: χ^2/df = 4.22, GFI = .94, CFI = .94, NFI = .93, RMSEA = .07, SRMR = .07.

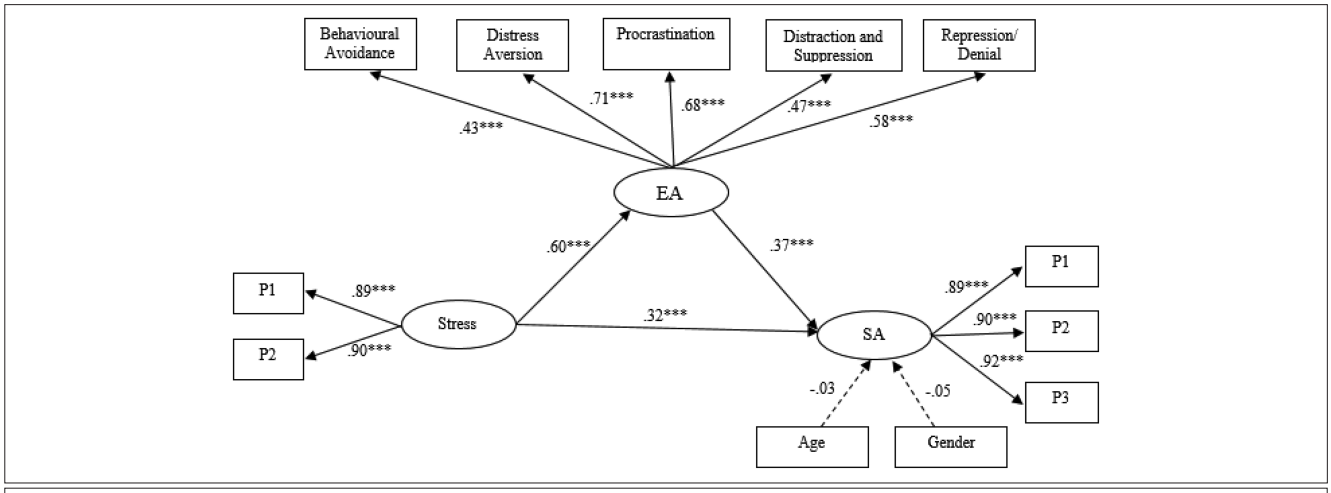

Figure 4. Testing the Mediator Role of EA in the Relationship between Stress and SA. Standardized values were used to report effects. The model fit: χ^2/df = 3.97, GFI = .94, CFI = .95, NFI = .94, RMSEA = .07, SRMR = .07.

tenets of the CIU theory, supporting the notion that individuals may resort to smartphone use as a means of coping with adverse emotional states.

Another significant finding from the analysis results is that university students with elevated levels of depression, anxiety, and stress tend to demonstrate increased levels of EA (H_2). This finding corroborates previous research demonstrating the predictive influence of depression, anxiety, and stress on EA (Bong & Kim, 2017; Litwin et al., 2017; Shahar & Herr, 2011). These negative internal states often engender intense internal experiences. Therefore, it is likely that individuals tend to avoid these aversive experiences. Consequently, heightened levels of depression, anxiety, and stress may correspond to increased tendencies towards experiential avoidance. Additionally, the research results indicate that university students with elevated levels of EA tend to exhibit higher levels of SA (H_3). This finding aligns with prior research highlighting the relationship between EA and SA, as well as with the principles of the ACT theory (Bong & Kim, 2017; García-Olivia & Piqueras, 2016; Ko & Kwak, 2018). Thus, smartphones may serve as a means for individuals to alleviate the adverse effects of aversive internal experiences they encounter.

Finally, the results of the mediation analysis reveal that EA mediates the association between depression, anxiety, stress, and SA (H_4). This finding aligns with prior research demonstrating the mediating role of EA in linking aversive internal experiences to addictive behaviors (Bong & Kim, 2017; Garey et al., 2016; Litwin et al., 2017). For instance, Zhang and Wang (2022) found that EA partially mediated the association between perceived stress and SA among university students. Similarly, in another study, it was found that EA mediated the relationship between anxious attachment and SA among university students (Ko & Kwak, 2018). Hence, experiential avoidance, a pivotal concept in ACT theory, emerges as a mediator in the association between depression, anxiety, stress, and SA. In essence, individuals with heightened levels of depression, anxiety, or stress are inclined to exhibit elevated levels of experiential avoidance, subsequently leading to increased SA. According to ACT, EA refers to an individual's inclination to evade contact with aversive internal experiences and to adopt strategies aimed at controlling or mitigating the impact of these experiences (Hayes et al., 1996). In this context, EA is perceived as a crucial intermediary in the relationship between depression, anxiety, stress, and SA, serving as a bridge that enhances the comprehension of this intricate relationship.

Limitations

This study possesses several limitations that warrant acknowledgment. Firstly, being a cross-sectional study examining relationships between variables, it precludes the ability to establish causal relationships based solely on the research findings. It is recommended that longitudinal studies be conducted in future research to track changes over time and better understand the causal relationships between variables. Secondly, data were acquired through self-reported online survey forms, potentially leading to a bias towards participants providing socially desirable responses (Krumpal, 2013). To address this limitation, future studies could incorporate diverse data sources such as input from family members, teachers, peers, and other relevant sources. In addition, despite the accuracy of the measurement tools used, the participants' subjective experiences of smartphone addiction and experiential avoidance were not assessed. The use of mixed or qualitative research methods in future studies may provide more comprehensive insights. Thirdly, the study sample consists of university students, the majority of whom are women. This situation limits the generalizability of the findings to different gender, age, and cultural groups. In future studies, working with samples that have a more balanced gender distribution, including participants from different age groups, cultural backgrounds, and educational levels, will contribute to obtaining more comprehensive and applicable results. Fourth, although validated measurement tools were used in the study, relatively low Cronbach's alpha values were reported for some subscales. This situation may have introduced bias in terms of measurement consistency across different samples. In future studies, it is recommended that the data collection tools be re-evaluated to ensure their validity and reliability. Lastly, SA was considered as a singular dimension in the current study. Future investigations could benefit from examining various types of addiction, including internet addiction, social media addiction, online sex addiction, online gaming addiction, and others. This approach would yield more comprehensive insights into addictive behaviors and their relationships with depression,

anxiety, stress, and experiential avoidance. In addition, this study focused on the mediating effect of experiential avoidance in the relationship between depression, anxiety, stress, and smartphone addiction. In future studies, addressing possible mediating and moderating variables such as self-esteem, social support, and coping strategies may provide a more comprehensive examination of the factors influencing smartphone addiction.

This study investigated the mediating effect of EA in the association between depression, anxiety, stress, and SA among Turkish university students. The study findings suggest that EA mediated the association between depression, anxiety, stress, and SA within this demographic. It is evident that studying individuals' propensity for EA as a means to alleviate depression, anxiety, and stress, along with its impact on SA, holds significance for both prevention and intervention efforts. Previous research has demonstrated the effectiveness of ACT in reducing SA levels (Yu & Son, 2016). However, further exploration is warranted to assess the efficacy of prevention and intervention programs incorporating EA in mitigating SA. Workshop activities targeting depression, anxiety, stress, and the inclination towards EA in handling these negative experiences could prove beneficial in reducing SA levels among university students. These workshops could be integrated into counseling centers at universities to provide support and assistance to students grappling with SA issues.

Data Availability Statement: The data that support the findings of this study are available upon request from the corresponding author.

Ethics Committee Approval: Ethics committee approval was received for this study from the Social and Humanities Ethics Committee of Dicle University (Approval no.: E-14679147-663.05-475938; Date: April 05, 2023).

Informed Consent: Written informed consent was obtained from the individuals who participated in this study.

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