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Escape behaviors in depression and anxiety: A cross-sectional study in Turkish adults

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Summary

Background: *We aimed to investigate the relationships between escape behaviors and the characteristics of subjects with depression and/or anxiety disorders.*

Subjects and Methods: *This cross-sectional study included 126 adults diagnosed with depression and/or anxiety disorders. Participants completed validated self-report scales: Hospital Anxiety and Depression Scale (HADS), Smartphone Addiction Scale–Short Version (SAS-SV), Dutch Eating Behavior Questionnaire–Emotional Eating Subscale (DEBQ-Emotional), Maladaptive Daydreaming Scale–16 (MDS-16), and Turkish Craving for Online Shopping Scale (TCOSS).*

Results: *The study population (mean age: 36.46 ± 10.25 years, 76.98% female)had moderate symptom scores from the HADS Depression (9.59 ± 3.22) and Anxiety scales (10.15 ± 4.05). HADS Depression correlated with SAS-SV (r=0.411, p<0.001), MDS-16 (r=0.288, p=0.001), and TCOSS (r=0.199, p=0.026). HADS Anxiety correlated with DEBQ-Emotional (r=0.248, p=0.005), SAS-SV (r=0.278, p=0.002), and MDS-16 (r=0.190, p=0.033). Multivariable regression identified high SAS-SV (p<0.001) and MDS-16 (p=0.039) scores as independently associated with greater depression severity, while female sex (p=0.025) and high SAS-SV score (p=0.004) were independently associated with anxiety severity.*

Conclusions: *In Turkish adults with depression/anxiety disorders, depression severity is linked to smartphone addiction and maladaptive daydreaming, while female sex and smartphone addiction are linked to anxiety severity. Weak correlations also existed between depression and online shopping craving and between emotional eating and anxiety.*

Keywords: *Depression, Anxiety, Escape Behavior, Smartphone Addiction, Emotional Eating, Maladaptive Daydreaming*

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MAIN POINTS

- Excessive smartphone use showed the most consistent association with both depression and anxiety among the behaviors examined, and remained independently associated with both in multivariable analysis.
- People with depression and anxiety cope differently: Those with depression tend to use smartphones excessively and engage in fantasy daydreaming, while those with anxiety are more likely to eat emotionally when stressed.
- Escaping into fantasy worlds through daydreaming is particularly common in depression, suggesting that people with depression may retreat from reality when symptoms worsen.
- Online shopping as emotional relief appears mainly in depression, not anxiety, indicating that the urge to buy things online may be a specific way people try to feel better when depressed.
- Women experience more severe anxiety symptoms than men, which means treatment approaches should consider how gender affects anxiety disorders.

INTRODUCTION

Depression and anxiety disorders are prevalent psychiatric conditions that impair personal, social, and occupational functioning (Dou et al., 2024). Among the millions affected by these conditions, many resort to behavioral strategies to cope with intense emotional distress (Blalock & Joiner Jr, 2000). These include “escape behaviors”, which are maladaptive responses that distract from distressing emotions but may lead to long-term adverse outcomes and functional impairment (Noyan et al., 2015). These behaviors are characterized by compulsive engagement, impulsivity, tolerance, withdrawal, and impaired functioning. While some of these behaviors carry features consistent with behavioral addiction, others are more accurately described as maladaptive coping strategies or difficulties in emotion regulation. In this study, the term ‘escape behavior’ is used as a functional descriptor reflecting their shared role in avoidance, without implying that all behaviors share an addictive profile (Van Strien et al., 1986; Babić et al., 2018).

The behaviors examined in this study differ in their underlying mechanisms. Maladaptive daydreaming is primar-

ily understood as a dissociative phenomenon, characterized by prolonged immersion in internally generated fantasy at the expense of real-world engagement (Somer et al., 2025). Emotional eating involves food consumption driven by emotional rather than physiological cues and is broadly considered a form of maladaptive affect regulation (Van Strien et al., 1986). Smartphone addiction shares features with behavioral addiction — including compulsive use, loss of control, and functional impairment — and is often described as a means of avoiding discomfort (Kwon et al., 2013). Online shopping craving combines impulsive and compulsive elements within a readily accessible digital environment ((Zhao et al., 2017). Despite these differences, all four behaviors share a common functional pattern: they are initiated or intensified in response to negative affect, they provide short-term relief, and they may reinforce avoidance of the underlying emotional distress over time. It is this shared avoidance function rather than a uniform psychopathological mechanism that forms the basis for grouping them under the term 'escape behaviors' and studying them together.

There are many behaviors that have been examined in the context of coping strategies. Some are well characterized, such as emotional eating and maladaptive daydreaming. Emotional eating is defined as consuming food in response to emotional rather than physical hunger, and is common in depression and anxiety. Maladaptive daydreaming, involving excessive immersion in fantasy worlds at the expense of real-life functioning, is linked to depression, anxiety, and dissociative symptoms. In the modern world, technology and consumerism have become emerging topics in the evaluation of maladaptive coping strategies and escape behaviors. Smartphone addiction, characterized by compulsive use that disrupts daily activities, has become a means to escape discomfort of any type and is associated with anxiety Similarly, craving for online shopping is a phenomenon by which individuals alleviate emotional distress in a maladaptive manner, often resulting in temporary relief but long-term consequences.

Despite the established links between these behaviors and psychopathology, few studies have performed a comprehensive assessment of these classical and modern maladaptive escape behaviors among individuals with depression and anxiety, particularly in the Turkish population. This study aims to investigate the relationships between depression and anxiety symptoms and primarily four escape behaviors (smartphone addiction, emotional eating, online shopping craving, and maladaptive daydreaming). We hypothesized that depression and anxiety severity would each correlate with these behavioral patterns, but potentially in different ways: depression severity was expected to associate more strongly with behaviors involving cognitive disengagement and habitual stimulation-seeking — namely maladaptive daydreaming and smartphone use — whereas anxiety severity was expected to relate more closely to behaviors with an immediate affect-regulatory function, such as emotional eating. Online shopping craving was anticipated to show associations with both conditions, given its combined impulsive and emotional relief features.

To date, most studies have examined these behaviors individually or in non-clinical populations such as students and healthy adults, leaving a gap in our understanding of how they cluster in patients with diagnosed psychiatric conditions. The current study addresses this gap by simultaneously assessing four escape behaviors — smartphone addiction, emotional eating, maladaptive daydreaming, and online shopping craving — in a Turkish adult sample with clinically confirmed depression and/or anxiety disorders. By comparing associations across both diagnostic groups, the study also aims to identify whether these behaviors carry differential relevance for depression versus anxiety, which may have practical implications for how they are addressed in clinical settings.

SUBJECTS AND METHODS

Ethical Approval and Consent

This study was conducted in compliance with the ethical principles outlined in the Declaration of Helsinki and its subsequent revisions. Ethical approval was obtained from the Research Ethics Committee of Hitit University Medical Faculty (approval number: 2025-136, date: 02/07/2025). Written informed consent was obtained from all participants before inclusion. All personal identifiers were anonymized in data sets to protect the privacy and confidentiality of the participants.

Study Design and Setting

This was a cross-sectional, descriptive-analytical study conducted between July 3, 2025 and August 3, 2025 at the Psychiatry Outpatient Clinic of Hitit University Erol Olçok Training and Research Hospital, Çorum, Turkiye.

Study Population

The study population comprised adult patients aged between 18 and 65 years who presented to the psychiatry outpatient clinic and received a clinical diagnosis of depression

and/or anxiety disorder based on DSM-5 criteria. Eligible patients attending the clinic during the study period were approached consecutively and enrolled on a voluntary basis following written informed consent. Clinical diagnoses were established by the attending psychiatrists through routine clinical interview and review of medical records, in accordance with DSM-5 criteria. In addition to diagnostic selection and adult age, inclusion criteria comprised adequate cognitive capacity, with no history of psychotic disorders, intellectual disability, or dementia, and be able to read, understand, and provide written informed consent as well as complete the study questionnaires.

Specific anxiety disorder subtypes such as generalized anxiety disorder, panic disorder, or social anxiety disorder were not recorded as separate analytical categories; diagnoses were grouped as depressive disorder, anxiety disorder, or both, as shown in Table 1.

Exclusion criteria were: being younger than 18 or older than 65 years, having psychiatric or neurological conditions that risked impairment of cognitive functioning or judgment (e.g., psychotic disorders, intellectual disability, or dementia), presence or history of (6 months) substance or alcohol use disorder, being diagnosed with severe or uncontrolled comorbidities likely to interfere with psychiatric assessment (e.g., cancer, chronic kidney disease, epilepsy, or thyroid dysfunction), and having limited capacity for cooperation or difficulties in literacy or comprehension that could hinder accurate completion of self-report instruments. In addition, we excluded women who were pregnant or breastfeeding and individuals who had experienced recent traumatic life events (e.g., acute grief, severe stressors) that could significantly affect anxiety or depression scores.

Information on prior psychiatric history was obtained through clinic records and confirmed during the clinical interview. Patients who were actively receiving psychiatric treatment, including those on antidepressant or anxiolytic medication, were not excluded, as the study was designed to reflect a real-world clinical population rather than a treatment-naïve group. The proportion of participants receiving active treatment is reported in Table 1. Medication type and dose were not systematically recorded and could not be accounted for in the analyses; this is acknowledged as a limitation of the study.

Data Collection and Questionnaires

Patients who agreed to participate were approached at the time of their outpatient appointment. After being briefed on the study's purpose, they completed a paper-based sociodemographic form and the five self-report questionnaires in the clinic waiting area or a designated quiet room. Completion was self-administered, though the researcher was present to answer any questions. The process typically took 20 to 30 minutes. All forms were checked for completeness before the participant left, and any missing items were clarified at that point.

Sociodemographic and Clinical Characteristics

All participants completed a sociodemographic data form and five validated self-report questionnaires. Data collection was carried out by the responsible researchers. Participants were asked to report their age, sex, marital status, education level, occupation, and income level. Clinical information such as psychiatric diagnosis, history of psychiatric treatment, and family history of psychiatric illness was also recorded. These variables were obtained using a structured form created by the principal investigator.

MEASURING ANXIETY, DEPRESSION AND ESCAPE BEHAVIORS

Participants completed five validated self-report scales to assess depression, anxiety, and the four escape behaviors under investigation. Each scale was selected based on its established reliability and validity in the Turkish population.

The Hospital Anxiety and Depression Scale (HADS), developed by Zigmond and Snaith (Zigmond & Snaith, 1983) and validated in Turkish by Aydemir et al. (Aydemir et al., 1997), was used to measure symptoms of anxiety and depression. This 14-item scale comprises two subscales (7 items each for anxiety and depression), with each item scored from 0 to 3, yielding subscale scores ranging from 0 to 21 points. Higher scores indicate greater symptom severity.

Though the HADS was originally designed for use in general hospital settings — partly to avoid over-counting somatic symptoms in medically ill patients — it has since been validated and widely used in psychiatric and community samples as well. Its item content focuses on cognitive and affective dimensions of depression and anxiety rather than physical symptoms, which makes it suitable for dimensional assessment of symptom severity across diagnostic groups. It was chosen here for its brevity, its availability in a validated Turkish version (Aydemir et al.,

1997), and its appropriateness as a continuous severity measure aligned with the study's correlational design.

The Smartphone Addiction Scale – Short Version (SAS-SV), originally developed by Kwon et al. (Kwon et al., 2013) and validated in Turkish by Noyan et al. (Noyan et al., 2015), was employed to assess problematic smartphone use. This scale evaluates the extent of smartphone addiction, with higher scores indicating more severe addiction behaviors.

The Dutch Eating Behavior Questionnaire – Emotional Eating Subscale (DEBQ-Emotional), developed by Van Strien et al. (Van Strien et al., 1986) and adapted to Turkish by Bozan et al. (Bozan et al., 2011), measures the tendency to engage in emotional eating in response to negative emotions rather than physiological hunger. Scores vary based on the number of items endorsed, with higher scores reflecting a greater propensity for emotional eating.

The Maladaptive Daydreaming Scale – 16-item Version (MDS-16), developed by Somer et al. (Somer et al., 2025) and validated in Turkish by Metin et al. (Metin et al., 2022), assesses the extent of maladaptive or compulsive daydreaming. This 16-item self-report scale generates scores that indicate the severity of maladaptive daydreaming, with higher scores reflecting more pronounced patterns.

The Turkish Craving for Online Shopping Scale (TCOSS), adapted from the original version by Zhao et al. (Zhao et al., 2017) and validated in Turkish by Savci et al. (Savci et al., 2023), evaluates the craving and compulsivity associated with online shopping behaviors. Higher scores indicate a stronger urge to engage in online shopping.

ENDPOINTS

The primary endpoint of this study was to evaluate the correlations between depression and anxiety levels, as measured by the HADS, and four escape behaviors: smartphone addiction, emotional eating, online shopping craving, and maladaptive daydreaming. Secondary endpoints included identifying independent predictors of depression and anxiety scores.

STATISTICAL ANALYSIS

All analyses were conducted using IBM SPSS version 27.0 (IBM Corp., Armonk, NY, USA). $p<0.05$ values were accepted as statistically significant results. Power analysis was conducted to determine the minimum sample size required for Pearson correlation analysis, based on an assumed medium effect size ($r = 0.30$), an alpha level of 0.05, and a power of 0.80. As a result, a minimum of 122 participants was deemed necessary for the study. Normality assumption was evaluated using the histograms and Q-Q plots. Spearman correlation coefficients were calculated to evaluate relationships between continuous variables. Multivariable linear regression analyses (stepwise selection method) were performed to determine significant factors independently associated with HADS scores. Variables were analyzed using the

Table 1. Summary of variables

Age, years		36.46 ± 10.25
Sex	Female	97 (76.98%)
	Male	29 (23.02%)
Marital status	Single	43 (34.40%)
	Married	79 (63.20%)
	Divorced	3 (2.40%)
Education status	Primary school	15 (12.10%)
	Secondary school	10 (8.06%)
	High school	43 (34.68%)
	University	52 (41.94%)
	Postgraduate	4 (3.23%)
Occupation	Not working	51 (42.15%)
	Working	70 (57.85%)
Income	Below minimum wage	20 (19.23%)
	Above minimum wage	84 (80.77%)
Diagnosis	Depression	17 (13.49%)
	Anxiety	65 (51.59%)
	Both	44 (34.92%)
	Psychiatric treatment	117 (92.86%)
	Family history	27 (23.08%)
	HADS Depression score	9.59 ± 3.22
	HADS Anxiety score	10.15 ± 4.05
	TCOSS score	6.5 (3 – 12)
	MDS-16 score	35 (13 – 71)
	DEBQ Emotional score	24 (14 – 36)
	SAS-SV score	26 (17 – 35.5)

Descriptive statistics are presented using mean ± standard deviation for normally distributed continuous variables, median (25th percentile – 75th percentile) for non-normally distributed continuous variables and frequency (percentage) for categorical variables.
DEBQ: The Dutch Eating Behavior Questionnaire, HADS: Hospital Anxiety and Depression Scale, MDS-16: The 16-item Maladaptive Daydreaming Scale, SAS-SV: The Smartphone Addiction Scale Short Version, TCOOS: Turkish version of the Craving for Online Shopping Scale

univariable linear regression analysis and statistically significant variables were included to the multivariable linear analysis. In stepwise multivariable regression, variables were entered when p<0.05 and removed when p>0.10. No correction for multiple comparisons was applied given the exploratory scope of the study; all results should therefore be regarded as hypothesis-generating rather than confirmatory.

RESULTS

The study population consisted of 126 participants with a mean age of 36.46 ± 10.25 years, predominantly female (76.98%, n=97). All sociodemographic and clinical characteristics of the study population are presented in **Table 1**. Clinical assessments revealed moderate symptom severity, with mean HADS scores of 9.59 ± 3.22 for depression and 10.15 ± 4.05 for anxiety. Escape

Table 2. Correlations between HADS scores and other scale scores

		HADS Depression score	HADS Anxiety score
TCOSS score	r	0.199	0.152
	p	**0.026**	0.089
MDS-16 score	r	0.288	0.190
	p	**0.001**	**0.033**
DEBQ Emotional score	r	0.154	0.248
	p	0.086	**0.005**
SAS-SV score	r	0.411	0.278
	p	**<0.001**	**0.002**

r: Spearman correlation coefficient, Statistically significant p values are shown in bold.
DEBQ: The Dutch Eating Behavior Questionnaire, HADS: Hospital Anxiety and Depression Scale, MDS-16: The 16-item Maladaptive Daydreaming Scale, SAS-SV: The Smartphone Addiction Scale Short Version, TCOOS: Turkish version of the Craving for Online Shopping Scale

Table 3. Significant variables independently associated with HADS Depression score, linear regression analysis results

	Univariable			Multivariable†		
	Unstandardized coefficients (95% CI)	Standardized coefficients	p	Unstandardized coefficients (95% CI)	Standardized coefficients	p
Age, years	-0.077 (-0.132 – -0.022)	-0.245	**0.006**			0.500
Sex, Female	0.852 (-0.491 – 2.196)	0.112	0.212			
Marital status, Married	-1.114 (-2.287 – 0.058)	-0.167	0.062			
Education status	0.094 (-0.452 – 0.640)	0.031	0.734			
Occupation, Working	0.527 (-0.629 – 1.683)	0.083	0.368			
Income, Above minimum wage	-0.740 (-2.337 – 0.856)	-0.091	0.360			
Psychiatric treatment	0.513 (-1.696 – 2.721)	0.041	0.647			
Family history	0.081 (-1.315 – 1.477)	0.011	0.908			
TCOSS score	0.087 (0.005 – 0.170)	0.184	**0.039**			0.627
MDS-16 score	0.028 (0.013 – 0.043)	0.319	**<0.001**	0.016 (0.001 – 0.032)	0.183	**0.039**
DEBQ Emotional score	0.052 (0.013 – 0.090)	0.232	**0.009**			0.091
SAS-SV score	0.113 (0.068 – 0.158)	0.413	**<0.001**	0.094 (0.046 – 0.142)	0.344	**<0.001**
Adjusted R^2	-			0.186		
Regression model	-			F=15.096, p<0.001		

† Multivariable linear regression analysis was performed via stepwise selection method. Statistically significant p values are shown in bold.
CI: Confidence interval, DEBQ: The Dutch Eating Behavior Questionnaire, HADS: Hospital Anxiety and Depression Scale, MDS-16: The 16-item Maladaptive Daydreaming Scale, SAS-SV: The Smartphone Addiction Scale Short Version, TCOOS: Turkish version of the Craving for Online Shopping Scale

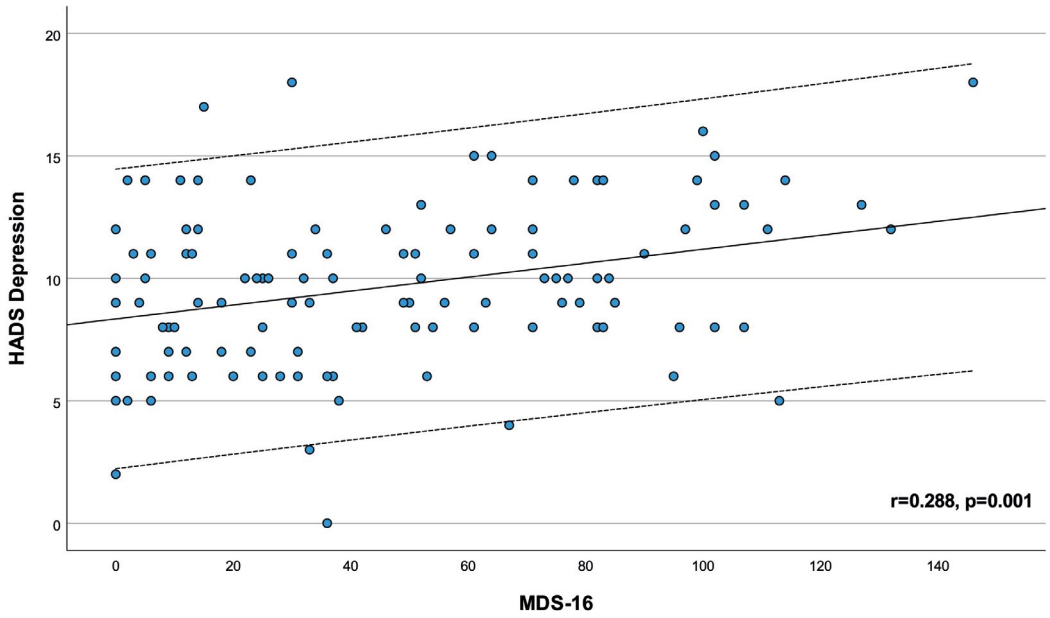

Figure 1. Scatter-plot of HADS Depression score and MDS-16 score

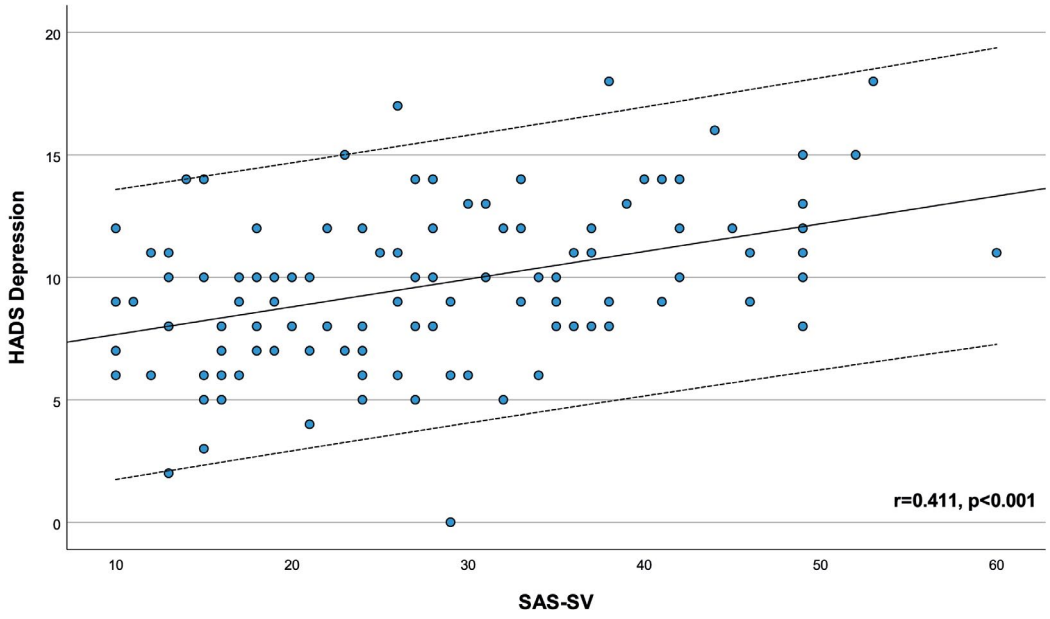

Figure 2. Scatter-plot of HADS Depression score and SAS-SV score

behavior measures showed median scores of 26 (IQR 17-35.5) SAS-SV, 24 (IQR 14-36) for DEBQ emotional score, 35 (IQR 13-71) for MDS-16 score, and 6.5 (IQR 3-12) for TCOSS score.

The correlation analyses revealed significant positive associations between psychological symptom scores and measures of escape behaviors. HADS Depression score was positively correlated with SAS-SV score ($r = 0.411$, $p < 0.001$) (**Figure 1**), MDS-16 score ($r = 0.288$, $p = 0.001$) (**Figure 2**), and TCOSS score ($r = 0.199$, $p = 0.026$). HADS Anxiety score also showed significant positive correlations with DEBQ-Emotional score ($r = 0.248$, $p = 0.005$), SAS-SV score ($r = 0.278$, $p = 0.002$) (**Figure 3**), and MDS-16 score ($r = 0.190$, $p = 0.033$) (**Table 2**). The correlation coefficients ranged from r=0.190 to r=0.411, reflecting small to moderate effect sizes. The

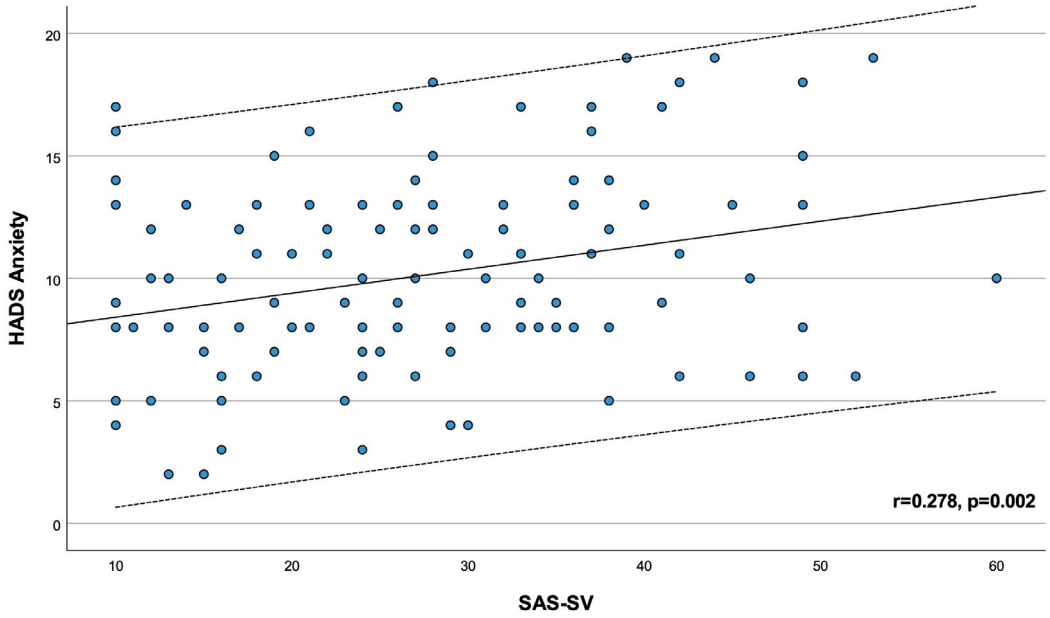

Figure 3. Scatter-plot of HADS Anxiety score and SAS-SV score

Table 4. Significant variables independently associated with HADS Anxiety score, linear regression analysis results

	Univariable			Multivariable†		
	Unstandardized coefficients (95% CI)	**Standardized coefficients**	**p**	**Unstandardized coefficients (95% CI)**	**Standardized coefficients**	**p**
Age, years	-0.048 (-0.118 – 0.023)	-0.121	0.182			
Sex, Female	2.391 (0.741 – 4.040)	0.249	**0.005**	1.864 (0.237 – 3.491)	0.197	**0.025**
Marital status, Married	0.000 (-1.499 – 1.499)	0.000	1.000			
Education status	-0.366 (-1.062 – 0.329)	-0.094	0.299			
Occupation, Working	-0.503 (-1.940 – 0.934)	-0.063	0.490			
Income, Above minimum wage	-1.295 (-3.277 – 0.686)	-0.127	0.198			
Psychiatric treatment	2.436 (-0.314 – 5.186)	0.156	0.082			
Family history	1.137 (-0.637 – 2.911)	0.118	0.207			
TCOSS score	0.085 (-0.020 – 0.189)	0.142	0.113			
MDS-16 score	0.026 (0.007 – 0.046)	0.233	**0.009**			0.137
DEBQ Emotional score	0.072 (0.023 – 0.120)	0.255	**0.004**			0.085
SAS-SV score	0.098 (0.039 – 0.156)	0.288	**0.001**	0.086 (0.027 – 0.144)	0.252	**0.004**
Adjusted R^2	-			0.106		
Regression model	-			F=8.257, p<0.001		

† Multivariable linear regression analysis was performed via stepwise selection method. Statistically significant p values are shown in bold.
Abbreviations: CI: Confidence interval, DEBQ: The Dutch Eating Behavior Questionnaire, HADS: Hospital Anxiety and Depression Scale, MDS-16: The 16-item Maladaptive Daydreaming Scale, SAS-SV: The Smartphone Addiction Scale Short Version, TCOOS: Turkish version of the Craving for Online Shopping Scale

multivariable models accounted for approximately 19% of the variance in depression scores (adjusted R^2=0.186) and 11% in anxiety scores (adjusted R^2=0.106), indicating that a substantial proportion of the variability in symptom severity remains unexplained by the variables included.

According to multivariable linear regression analysis results, high MDS-16 score (coefficient: 0.016, 95% CI: 0.001 – 0.032, p=0.039) and high SAS-SV score (coefficient: 0.094, 95% CI: 0.046 – 0.142, p<0.001) were independently associated with high HADS Depression score (**Table 3**).

In the multivariable analysis of HADS Anxiety scores, female sex (coefficient: 1.864, 95% CI: 0.237 – 3.491, p=0.025) and high SAS-SV score (coefficient: 0.086, 95% CI: 0.027 – 0.144, p=0.004) were found to be independently associated with higher score (**Table 4**).

DISCUSSION

The current study revealed significant associations between depression and anxiety symptoms and specific escape behaviors in patients diagnosed with depression and/or anxiety disorders. Depression severity was found to be associated with smartphone addiction, maladaptive daydreaming, and online shopping craving. Anxiety severity was associated with emotional eating, smartphone addiction, and maladaptive daydreaming, but with weaker correlations. Smartphone addiction and maladaptive daydreaming remained significant in multivariable regression analysis for depression severity, while female sex and smartphone addiction were independently associated with anxiety severity.

Smartphone addiction has emerged as a critical behavioral issue with considerable associations with mental health (Matar Boumosleh & Jaalouk, 2017; Nikolic et al., 2023). Excessive smartphone use is often characterized as a maladaptive coping mechanism to mitigate psychological distress associated with depression and anxiety (Nikolic et al., 2023). This behavior appears to exacerbate emotional dysregulation and impair social and occupational functioning (Korkmazer et al., 2022). Determining the bidirectional relationship between smartphone addiction and psychiatric symptoms appears to be crucial in developing and improving interventions (Ge et al., 2022; Korkmazer et al., 2022; Sarhan, 2024). In the present study, smartphone addiction was associated with both depression and anxiety severity, with the former relationship being stronger. Smartphone addiction persisted as an independent predictor of both depression and anxiety severity with multivariable analysis. Boumosleh and Jaalouk (Matar Boumosleh & Jaalouk, 2017) conducted a cross-sectional study among university students, revealing that depression and anxiety independently predicted higher levels of smartphone addiction. Their findings indicated high prevalence of compulsive smartphone use and associations with functional impairment and sleep disturbances. Similarly, another cross-sectional study (Nikolic et al., 2023) reported links between smartphone addiction and elevated levels of depression, anxiety, and stress, with depression emerging as an independent predictor of smartphone addiction. A large-scale cross-sectional study of South Korean adolescents (Kim et al., 2019) also demonstrated significant positive correlations between smartphone addiction and both depression and anxiety symptoms, with stronger impacts on females. These findings have been corroborated by many other studies (Korkmazer et al., 2022; Peng et al., 2022; Meneses & Andrade, 2024; Sarhan, 2024).

The majority of existing research focuses on university students or adolescents, with limited data on adults with diagnosed depression or anxiety, especially in the Turkish population. Most prior studies in this area (Matar Boumosleh & Jaalouk, 2017; Korkmazer et al., 2022; Nikolic et al., 2023; Meneses & Andrade, 2024; Sarhan, 2024) have focused on student or adolescent samples, and few have examined clinically diagnosed adults. Beyond extending these findings to an adult clinical population, the present study also differs from earlier work by assessing four escape behaviors simultaneously and comparing their associations across depression and anxiety rather than treating them as interchangeable outcomes. This approach allows for a more differentiated view of how these behaviors relate to specific psychiatric conditions. The inclusion of online shopping craving alongside more established constructs is also relatively novel, particularly in the Turkish literature. Clinicians and researchers should prioritize screening for smartphone addiction in individuals presenting with depression or anxiety. Interventions targeting smartphone addiction could mitigate psychological distress, improve emotional regulation, and enhance social and occupational functioning, which may be influential on depressive or anxiety-related symptoms. It may also be relevant to suggest that exploring other factors influencing smartphone addiction could improve possible interventions.

Maladaptive daydreaming is an established dissociative coping mechanism in individuals with mood and anxiety disorders (Somer et al., 2025), with considerable associations to both depression and anxiety symptoms (Soffer-Dudek & Somer, 2018; Somer et al., 2025). In the current study, maladaptive daydreaming exhibited significant but relatively weak correlations with the

severity of both depression and anxiety. Despite the weak correlation, it persisted as a significant variable associated with depression severity in multivariable regression. Consistent with these findings, a meta-analysis by Somer et al. (Somer et al., 2025), encompassing 40 studies and 24,977 participants, reported that maladaptive daydreaming was linked to depression and anxiety, with stronger associations in samples with a higher proportion of female participants. Similarly, a longitudinal study by Soffer-Dudek (Soffer-Dudek & Somer, 2018) involving 77 self-diagnosed maladaptive daydreamers found that daily increases in maladaptive daydreaming were strongly linked to decreased positive emotions and increases in depressive symptoms, dissociation, general and social anxiety, and obsessive-compulsive symptoms. Another cross-sectional study (Alenizi et al., 2020) reported significantly higher scores on generalized anxiety disorder and worry questionnaires among subjects with maladaptive daydreaming. In one of the largest studies, Gemignani et al. (Gemignani et al., 2025) explored maladaptive daydreaming in 1295 young adults, finding that it mediated the relationships between unresolved attachment and both depression/anxiety and obsessive-compulsive symptoms. However, research focusing on clinical populations, particularly Turkish adults with diagnosed depression or anxiety, was limited. Our results indicated that maladaptive daydreaming is a significant factor in the psychological distress experienced by individuals with depression and anxiety, but with a greater impact on depression severity. Mental health professionals should consider assessing maladaptive daydreaming in patients presenting with depression and anxiety. Interventions could focus on addressing excessive daydreaming and promoting adaptive coping strategies. However, further research is necessary to understand whether effective management of depression and anxiety can be achieved by correcting this maladaptive coping mechanism.

In the digital era, where online commerce platforms are readily accessible, online shopping craving / addiction is a rising escape mechanism (Günüç & Keskin, 2016) that might strongly impact individuals with depression and anxiety. Compulsive online shopping can lead to financial difficulties, emotional guilt, and worsening mental health outcomes (Günüç & Keskin, 2016; Ayazoğlu et al., 2019). In the current study, online shopping craving exhibited a weak but significant correlation with depression severity, yet no significant association with anxiety severity was observed. Other relationships with psychological symptoms have also been described. For instance, Erzincanlı et al. (Erzincanlı et al., 2024) examined 694 consumers in Türkiye, finding that depression and anxiety significantly predicted online shopping addiction, interestingly regardless of self-control and stress. Similarly, Müller et al. (Müller et al., 2019) reported significant associations between online shopping addiction and both anxiety and depression, drawing a link between compulsive behaviors and these clinical conditions. Keskin and Günüç (Günüç & Keskin, 2016) explored motivations for online shopping among adults, revealing that depression, stress (as personal factors) were involved in the development of additive behaviors, as well as the ease of access to these online platforms. Ayazoğlu et al. (Ayazoğlu et al., 2019) found that online shopping evokes a spectrum of emotions, including negative feelings like anxiety, stress, and regret, alongside positive emotions such as relaxation and excitement, with addictive factors encompassing impulses (e.g., pleasure, promotions) and psychological triggers like stress and boredom. Cojocariu et al. (Cojocariu et al., 2021) identified anxiety and stress as being key contributors to online shopping addiction. Unlike the present study, which focused on a clinical psychiatric population and found a specific link with depression but not anxiety, prior studies primarily investigated general or non-clinical populations. It therefore appears that there may be a more clinically-relevant link between online shopping craving and depression, while the links to anxiety may lead to overt impacts on behavior or symptomatology. The weak but significant correlation with depression severity suggests that individuals may turn to online shopping to alleviate feelings of sadness or emptiness. Interventions that might contribute to better outcomes on both facets of this relationship could include behavioral strategies to enhance impulse control, financial literacy programs, and therapeutic approaches addressing underlying emotional triggers. It is also clear that there is a need for further research to examine how depression and anxiety differ in terms of their relationships with online shopping craving, and whether causal interpretations can be made.

Emotional eating, defined as the consumption of food in response to emotional rather than physical cues, is a well-recognized behavior among individuals with mood and anxiety disorders (Fox et al., 2016). This behavior is of clinical importance due to its potential to contribute to adverse health outcomes, both mental and physical (Kaner et al., 2023). In the current study, emotional eating was only associated with anxiety severity and not depression severity. A comprehensive review covering clinical studies from 2013 to 2023 by Dakanali (Dakanalis et al., 2023) found significant associations between emotional eating and increased depressive symptoms, anxiety/stress, unhealthy dietary patterns, and overweight/obesity. Similarly, Braden et al. (Braden et al., 2018) conducted a cross-sectional study of overweight adults or those with obesity, reporting that emotional eating in response

to depression (EE-D), anxiety/anger, and boredom were linked to poorer psychological well-being, greater eating disorder symptoms, and difficulties with emotion regulation, with EE-D showing the strongest association. Fox et al. (Fox et al., 2016) investigated adolescents seeking weight management treatment and found that both depression and anxiety were independently associated with higher obesity severity, though emotional eating did not mediate these relationships. In another cross-sectional study, Goossens et al. (Goossens et al., 2009) reported that anxiety was associated with both emotional eating and loss of control over eating, while depression was linked to emotional eating but not loss of control over eating. Kaner et al. (Kaner et al., 2023) explored emotional eating among 2002 adults in Türkiye, reporting significant correlations between emotional eating and higher levels of depression, anxiety, and stress, with predictors such as weight gain, weight loss, and unhealthy dietary habits exacerbating the associations. Additional studies have consistently reported significant relationships between emotional eating, anxiety, and depression (Lazarevich et al., 2016; Konttinen et al., 2019; Willem et al., 2020). In the current study we focus on a clinical psychiatric population, assess emotional eating alongside other escape behaviors, and describe a link with anxiety but not depression. The current findings suggest that emotional eating is a significant maladaptive coping mechanism, particularly in relation to anxiety in clinical populations. The significant correlation with anxiety but not depression is an important finding that might indicate differing impacts in different clinical conditions and may inform future research. By targeting emotional eating as a modifiable behavior, clinicians can enhance treatment outcomes, promoting both psychological and physical improvements among individuals with anxiety disorders.

Several factors may contribute to the higher anxiety severity observed in women. Biological differences in stress-axis reactivity and hormonal influences across the menstrual cycle and reproductive life stages have been associated with greater anxiety vulnerability in women (Bangasser & Valentino, 2014). At a sociocultural level, gender-specific stressors — including caregiving demands, occupational pressures, and social role expectations — are well-established contributors to anxiety, and these may be particularly relevant in the Turkish context. Given the sex imbalance in the sample, however, this finding should be interpreted cautiously and explored further in studies with more balanced recruitment.

This study examines escape behaviors and their relationships with psychiatric symptom severity among Turkish patients with clinical diagnoses of depression and anxiety. Smartphone addiction and maladaptive daydreaming were associated with both depression and anxiety. Interestingly, online shopping craving was linked to depression, while emotional eating was associated only with anxiety. Notably, female sex was an independent predictor of higher anxiety severity. Should these associations be replicated in longitudinal studies, assessment of specific escape behaviors could become a useful component of routine psychiatric evaluation. At this stage, however, clinical recommendations should be approached cautiously, and these findings are best regarded as a starting point for further inquiry. Future research should aim to establish causality, explore the differing impacts of depression and anxiety on escape behaviors (and vice-versa), and further investigate how gender might impact the escape behaviors.

It is critical to note that the cross-sectional design of our study precludes causal or temporal interpretations concerning escape behaviors and psychological symptoms of depression and anxiety. Psychiatric diagnoses were based on routine clinical evaluation rather than structured diagnostic interviews such as the SCID-5. While this reflects standard outpatient practice, it introduces some variability in diagnostic precision that should be acknowledged when interpreting the findings. The study was conducted at a single center in Türkiye and the sample size may also be insufficient in terms of subgroup analyses, particularly in the context of potential disease severity categories and sex differences. The sex distribution of the sample — approximately 77% female — warrants careful consideration when interpreting the finding that female sex was independently associated with anxiety severity. With fewer than 30 male participants, the study was underpowered to draw reliable sex-specific conclusions, and the observed association may partly reflect the composition of the sample rather than a true population-level difference. Future studies should recruit more balanced samples before drawing firm conclusions about sex-related differences in anxiety. Although providing critical data to a sparsely-studied population, we did not explore the influence of cultural factors specific to the Turkish population, such as societal attitudes toward mental health or technology use, which may impact escape behaviors.. Anxiety diagnoses were not further classified by subtype, which limits the specificity of conclusions regarding anxiety-related associations and represents an area for future investigation. All escape behavior scales were self-reported, which introduces the possibility of underreporting, particularly for behaviors that carry social stigma — such as compulsive shopping or emotional eating. This may have attenuated the observed correlations, and the true associations could be somewhat stronger than those detected. Finally, unmeasured variables, such as socioeconomic status or

access to mental health resources, may have influenced the observed relationships and should be considered in future research.

CONCLUSIONS

We identified significant associations between depression / anxiety severity and escape behaviors in a clinically-diagnosed Turkish adult population. Smartphone addiction and maladaptive daydreaming were independently associated with depression severity, while female sex and smartphone addiction were independently associated with anxiety severity. Online shopping craving correlated weakly with depression, and emotional eating was linked to anxiety. Future research should use longitudinal designs to assess temporal relationships between these conditions and escape behaviors. Furthermore, larger studies are necessary to understand how escape behaviors are associated with sex, depressive symptoms, anxiety, and other patient characteristics. Such links could be utilized to improve intervention strategies and broaden the toolset in the management of depression and/or anxiety.

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References

Alenizi, M. M., Alenazi, S. D., Almushir, S., Alosaimi, A., Alqarni, A., Anjum, I., & Omair, A. (2020). Impact of Maladaptive Daydreaming on Grade Point Average (GPA) and the Association Between Maladaptive Daydreaming and Generalized Anxiety Disorder (GAD). *Cureus*, *12*(10), e10776. https://doi.org/10.7759/cureus.10776

Ayazoğlu, B. A., Aksu, M., Ünübol, H., & Sayar, G. H. (2019). Shopping addiction. *Üsküdar University Faculty of Communication Journal. 4*(2), 44-64. https://doi.org/10.32739/etkilesim.2019.4.63

Aydemir, Ö., Guvenir, T., Kuey, L., & Kultur, S. (1997). Validity and reliability of Turkish version of hospital anxiety and depression scale. *Turkish Journal of Psychiatry*, *8*(4), 280-287.

Babić, R., Babić, D., Martinac, M., Pavlović, M., Vasilj, I., Miljko, M., & Vasilj, M. (2018). Addictions without drugs: Contemporary addictions or way of life? *Psychiatria Danubina*, *30*(suppl. 6), 371-379.

Blalock, J. A., & Joiner Jr, T. E. (2000). Interaction of cognitive avoidance coping and stress in predicting depression/anxiety. *Cognitive Therapy and Research*, *24*(1), 47-65.

Bozan, N., Bas, M., & Asci, F. H. (2011). Psychometric properties of Turkish version of Dutch Eating Behaviour Questionnaire (DEBQ). A preliminary results. *Appetite*, *56*(3), 564-566. https://doi.org/10.1016/j.appet.2011.01.025

Braden, A., Musher-Eizenman, D., Watford, T., & Emley, E. (2018). Eating when depressed, anxious, bored, or happy: are emotional eating types associated with unique psychological and physical health correlates? *Appetite*, *125*, 410-417. https://doi.org/10.1016/j.appet.2018.02.022

Cojocariu, R., Nechita, P., & Moraru, C. (2021). Shopping addiction—A real challenge during the pandemic. *Archiv Euromedica*, *11*, 52-54. http://dx.doi.org/10.35630/2199-885X/2021/11/5.14

Dakanalis, A., Mentzelou, M., Papadopoulou, S. K., Papandreou, D., Spanoudaki, M., Vasios, G. K.,…Giaginis, C. (2023). The Association of Emotional Eating with Overweight/Obesity, Depression, Anxiety/Stress, and Dietary Patterns: A Review of the Current Clinical Evidence. *Nutrients*, *15*(5), 1173. https://doi.org/10.3390/nu15051173

Dou, X., Lu, J., Yu, Y., Yi, Y., & Zhou, L. (2024). The impact of depression and anxiety on mobile phone addiction and the mediating effect of self-esteem. *Scientific Reports*, *14*(1), 23004. https://doi.org/10.1038/s41598-024-71947-6

Erzincanlı, Y., Akbulut, G., Çubukcu, B. B., & Taş, H. G. (2024). Role of self-control, financial attitude, depression, anxiety, and stress in predicting consumers' online shopping addiction. *Front Public Health*, *12*, 1382910. https://doi.org/10.3389/fpubh.2024.1382910

Fox, C. K., Gross, A. C., Rudser, K. D., Foy, A. M., & Kelly, A. S. (2016). Depression, Anxiety, and Severity of Obesity in Adolescents: Is Emotional Eating the Link? *Clinical Pediatrics*, *55*(12), 1120-1125. https://doi.org/10.1177/0009922815615825

Ge, J., Liu, Y., Cao, W., & Zhou, S. (2022). The relationship between anxiety and depression with smartphone addiction among college students: The mediating effect of executive dysfunction. *Frontiers in Psychology*, *13*, 1033304. https://doi.org/10.3389/fpsyg.2022.1033304

Gemignani, M., Mancinelli, E., Manari, T., Gagliardini, G., Bassi, G., Chirico, I.,…Musetti, A. (2025). Understanding maladaptive daydreaming from the attachment framework: The intertwining roles of parental care, unresolved attachment, depression/anxiety and obsessive-compulsive symptoms. *Journal of Psychiatric Research*, *182*, 290-296. https://doi.org/10.1016/j.jpsychires.2025.01.015

Goossens, L., Braet, C., Van Vlierberghe, L., & Mels, S. (2009). Loss of control over eating in overweight youngsters: the role

of anxiety, depression and emotional eating. *European Eating Disorders Review 17*(1), 68-78. https://doi.org/10.1002/erv.892

Günüç, S., & Keskin, A. D. (2016). Online shopping addiction: symptoms, causes and effects. *Addicta: The Turkish Journal on Addictions*, *3*(3), 353–364. https://doi.org/10.15805/addicta.2016.3.0104

Kaner, G., Yurtdaş-Depboylu, G., Çalık, G., Yalçın, T., & Nalçakan, T. (2023). Evaluation of perceived depression, anxiety, stress levels and emotional eating behaviours and their predictors among adults during the COVID-19 pandemic. *Public Health Nutrition*, *26*(3), 674-683. https://doi.org/10.1017/s1368980022002579

Kim, S. G., Park, J., Kim, H. T., Pan, Z., Lee, Y., & McIntyre, R. S. (2019). The relationship between smartphone addiction and symptoms of depression, anxiety, and attention-deficit/hyperactivity in South Korean adolescents. *Annals of General Psychiatry*, *18*, 1. https://doi.org/10.1186/s12991-019-0224-8

Konttinen, H., van Strien, T., Männistö, S., Jousilahti, P., & Haukkala, A. (2019). Depression, emotional eating and long-term weight changes: a population-based prospective study. *The International Journal of Behavioral Nutrition and Physical Activity*, *16*(1), 28. https://doi.org/10.1186/s12966-019-0791-8

Korkmazer, B., Yurdakul, F., Özer, Ş., Yeşil, Ö., Coşkuntuncel, C., Sualp, B.,…Şahin, E. M. (2022). A cross-sectional study on the relationship between smartphone addiction and depression, anxiety and social appearance anxiety in young adults. *Journal of Istanbul Faculty of Medicine*, *85*(1), 91-97. https://doi.org/10.26650/IUITFD.907719

Kwon, M., Kim, D. J., Cho, H., & Yang, S. (2013). The smartphone addiction scale: development and validation of a short version for adolescents. *PloS One*, *8*(12), e83558. https://doi.org/10.1371/journal.pone.0083558

Lazarevich, I., Irigoyen Camacho, M. E., Velázquez-Alva, M. D. C., & Zepeda Zepeda, M. (2016). Relationship among obesity, depression, and emotional eating in young adults. *Appetite*, *107*, 639-644. https://doi.org/10.1016/j.appet.2016.09.011

Matar Boumosleh, J., & Jaalouk, D. (2017). Depression, anxiety, and smartphone addiction in university students- A cross sectional study. *PloS One*, *12*(8), e0182239. https://doi.org/10.1371/journal.pone.0182239

Meneses, M. O., & Andrade, E. (2024). Relationship between depression, anxiety, stress and smartphone addiction in COVID-19 nursing students. *Revista Latino-Americana de Enfermagem*, *32*, e4056. https://doi.org/10.1590/1518-8345.6764.4056

Metin, S., Gocmen, B., & Metin, B. (2022). Turkish validity and reliability study of maladaptive daydreaming scale. *Psychiatry and Behavioral Sciences*, *12*(1), 1-6. https://doi.org/10.5455/PBS.20210907111754

Müller, A., Steins-Loeber, S., Trotzke, P., Vogel, B., Georgiadou, E., & de Zwaan, M. (2019). Online shopping in treatment-seeking patients with buying-shopping disorder. *Comprehensive Psychiatry*, *94*, 152120. https://doi.org/10.1016/j.comppsych.2019.152120

Nikolic, A., Bukurov, B., Kocic, I., Vukovic, M., Ladjevic, N., Vrhovac, M.,…Sipetic, S. (2023). Smartphone addiction, sleep quality, depression, anxiety, and stress among medical students. *Frontiers in Public Health*, *11*, 1252371. https://doi.org/10.3389/fpubh.2023.1252371

Noyan, C. O., Darcin, A. E., Nurmedov, S., Yilmaz, O., & Dilbaz, N. (2015). Validity and reliability of the Turkish version of the Smartphone Addiction Scale-Short version among university students/Akilli Telefon Bagimliligi Olceginin Kisa Formunun universite ogrencilerinde Turkce gecerlilik ve guvenilirlik calismasi. *Anadolu Psikiyatri Dergisi*, *16*(S1), 73-82.

Peng, Y., Mao, H., Zhang, B., Zhang, A., Zeng, Y., Zeng, C., & Li, J. (2022). Depression and loneliness as mediators between social support and mobile phone addiction. *Psychiatria Danubina*, *34*(3), 475-482. https://doi.org/10.24869/psyd.2022.475

Sarhan, A. L. (2024). The relationship of smartphone addiction with depression, anxiety, and stress among medical students. *Sage Open Medicine*, *12*, 20503121241227367. https://doi.org/10.1177/20503121241227367

Savci, M., Ugur, E., Ercengiz, M., & Griffiths, M. D. (2023). The development of the Turkish craving for online shopping scale: a validation study. *International Journal of Mental Health and Addiction*, *21*(3), 1303-1319. https://doi.org/10.1007/s11469-021-00490-6

Soffer-Dudek, N., & Somer, E. (2018). Trapped in a Daydream: Daily Elevations in Maladaptive Daydreaming Are Associated With Daily Psychopathological Symptoms. *Frontiers in Psychiatry*, *9*, 194. https://doi.org/10.3389/fpsyt.2018.00194

Somer, E., Herscu, O., Samara, M., & Abu-Rayya, H. M. (2025). Maladaptive Daydreaming and Psychopathology: A Meta-Analysis. *International Journal of Psychology*, *60*(2), e70027. https://doi.org/10.1002/ijop.70027

Van Strien, T., Frijters, J. E., Bergers, G. P., & Defares, P. B. (1986). The Dutch Eating Behavior Questionnaire (DEBQ) for assessment of restrained, emotional, and external eating behavior. *International Journal of Eating Disorders*, *5*(2), 295-315. https://doi.org/10.1002/1098-108X(198602)5:2<295::AID-EAT2260050209>3.0.CO;2-T

Willem, C., Gandolphe, M. C., Doba, K., Roussel, M., Verkindt, H., Pattou, F., & Nandrino, J. L. (2020). Eating in case of emotion dys-regulation, depression and anxiety: Different pathways to emotional eating in moderate and severe obesity. *Clinical Obesity*, *10*(5), e12388. https://doi.org/10.1111/cob.12388

Zhao, H., Tian, W., & Xin, T. (2017). The development and validation of the online shopping addiction scale. *Frontiers in Psychology*, *8*, 735. https://doi.org/10.3389/fpsyg.2017.00735

Zigmond, A. S., & Snaith, R. P. (1983). The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica*, *67*(6), 361-370. https://doi.org/10.1111/j.1600-0447.1983.tb09716.x

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