



RESEARCH ARTICLE / ARAŞTIRMA MAKALESİ

A Study on the Relationship between Digital Addiction and the Sense of Anti-Mattering among High School Students

Lise Öğrencilerinin Dijital Bağımlılık Düzeyleri ile Kendini Değersiz Hissetme Düzeyleri Arasındaki İlişkinin İncelenmesi

Selim Uylas¹, Zeynep Demirtaş¹

Abstract:

The rapid advancement of technology and widespread use of smart devices have led adolescents to engage more intensively with digital environments, increasing the risk of digital addiction. This situation can also affect the psychological and emotional development of young individuals. This study aims to analyze the relationship between digital addiction and anti-mattering (the feeling of being worthless and insignificant) among high school students. Additionally, it investigates whether students' levels of digital addiction and anti-mattering vary according to gender, perceived family income, and family attitudes. A quantitative relational survey model was employed to examine relationships between variables. The population consisted of high school students enrolled in public schools in three major cities during the 2022-2023 academic year. A total of 472 students participated voluntarily through convenience sampling. The "Digital Addiction in Adolescents" and "Anti-Mattering" scales were administered. Parametric tests were applied to analyze the data, which were found to be normally distributed. The findings indicate a positive and moderately significant relationship between digital addiction and feelings of worthlessness among high school students. Anti-mattering levels were found to significantly and positively predict digital addiction. Furthermore, significant differences were observed in students' levels of digital addiction and anti-mattering according to gender, perceived family income, and family attitudes. These results highlight the importance of the relationship between digital addiction and psychological well-being, suggesting that adolescents' experiences of feeling worthless may influence their digital behaviors. The findings provide guidance for educators, families, and policymakers to promote healthy digital use and support adolescents' psychological well-being.

Keywords: Digital addiction, Anti-mattering, Adolescence.

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¹Sakarya University, Faculty of Education, Department of Educational Sciences, Sakarya, Türkiye.

Address of Correspondence/Yazışma Adresi: Zeynep Demirtaş, Sakarya University, Faculty of Education, Department of Educational Sciences, E Block, Muammer Sencer Street No: 44/1, Kemaliye Neighborhood, 54300 Hendek, Sakarya, Türkiye.
E-mail: zeynept@sakarya.edu.tr.

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Öz:

Günümüzde teknolojinin hızlı gelişimi ve akıllı cihazların yaygınlaşması, ergenlerin dijital ortamlarla daha yoğun etkileşim kurmasına ve dijital bağımlılık riskinin artmasına neden olmuştur. Bu durum, gençlerin psikolojik ve duygusal gelişimini de etkileyebilmektedir. Bu araştırma, lise öğrencilerinde dijital bağımlılık ile anti-mattering (bireyin kendisini değersiz ve önemsiz hissetmesi) düzeyleri arasındaki ilişkiyi incelemeyi amaçlamaktadır. Ayrıca araştırmada, lise öğrencilerinin dijital bağımlılık ve anti-mattering düzeylerinin cinsiyete, algılanan aile gelir durumuna ve algılanan aile tutumuna göre değişip değişmediği de incelenmiştir. Araştırmada değişkenler arasındaki ilişkiyi ortaya koymak amacıyla nicel yöntemlerden ilişkisel tarama modeli tercih edilmiştir. Araştırma evrenini, 2022-2023 eğitim-öğretim yılında üç farklı büyükşehirde kamu okullarında öğrenim gören lise öğrencileri oluşturmuştur. Kolayda örnekleme yöntemiyle gönüllü 472 lise öğrencisi örnekleme yer almıştır. Araştırmaya katılan öğrencilere “Ergenlerde Dijital Bağımlılık” ve “Anti-mattering” ölçekleri uygulanmıştır. Normal dağılım gösterdiği belirlenen verilerin analizi için parametrik testler kullanılmıştır. Araştırma bulguları, lise öğrencilerinde dijital bağımlılık ile değersizlik hissi arasında pozitif yönlü ve orta düzeyde anlamlı bir ilişki olduğunu ortaya koymaktadır. Ayrıca, anti-mattering düzeylerinin dijital bağımlılığı anlamlı ve pozitif yönde yordadığı belirlenmiştir. Lise öğrencilerinin dijital bağımlılık ve kendini değersiz hissetme düzeylerinin cinsiyet, algılanan aile gelir durumu ve algılanan aile tutumuna göre anlamlı farklılıklar gösterdiği tespit edilmiştir. Bu sonuçlar, dijital bağımlılık ile psikolojik iyi oluş arasındaki ilişkinin önemini vurgulamakta ve ergenlerin kendini değersiz hissetme deneyimlerinin dijital davranışları üzerinde etkili olabileceğini göstermektedir. Bulgular, eğitimciler, aileler ve politika yapıcılar için ergenlerin dijital ortamları sağlıklı bir şekilde kullanabilmesi ve psikolojik destek alabilmesi açısından rehber niteliği taşımaktadır.

Anahtar Kelimeler: Dijital bağımlılık, Kendini değersiz hissetme, Ergenlik dönemi.

Introduction

With the widespread use of digital technologies, adolescents are increasingly vulnerable to digital addiction, defined as excessive, uncontrolled device use harming attention and well-being (Rugai & Hamilton-Ekeke, 2016). While digital tools benefit areas like business and entertainment, constant internet and smartphone use raises addiction risks, especially among high school students, and is linked to anxiety, depression, and lower self-worth (Christakis, 2019; Andreassen, 2015). In this context, anti-mattering—the feeling of being invisible or insignificant—has gained attention (Flett, 2018). High anti-mattering is strongly associated with loneliness, low self-esteem, and emotional distress (Etherson et al., 2021; Kyrgsman et al., 2021; McComb et al., 2020), especially during adolescence, when identity and social belonging needs are heightened (Flett, Zangeneh & Hewitt, 2019). Given these vulnerabilities, studying the link between digital addiction and anti-mattering in high school students offers important insights into how technology use may fuel feelings of insignificance and exclusion.

Digital addiction refers to dependency-like behaviors from excessive use of digital tools such as computers, smartphones, the internet, games, and social media (Christakis, 2019). It is a growing psychosocial issue across all age groups, especially among youth whose critical thinking is still developing and who seek social approval and a sense of belonging online (Ding & Li, 2023; Wang et al., 2024). Thus, young people often use digital platforms to compensate for the lack of real-life social connections.

Mattering is the sense of being valued by others and a key component of psychological well-being, impacting life satisfaction and social functioning (Flett et al., 2019; Prilleltensky et al., 2023), as well as academic, professional, and interpersonal areas (Di Napoli et al., 2024). In contrast, anti-mattering involves feeling unimportant or invisible, fostering negative beliefs such as “I am not worthy of attention” (Flett et al., 2022).

Growing awareness highlights how feeling insignificant in social relationships harms well-being both offline and online. Those who feel they don’t matter may compensate by excessively engaging with social media and digital environments (Duradoni et al., 2024). This situation can be explained by the I-PACE (Interaction of Person-Affect-Cognition-Execution) model, which examines how personality traits, psychological needs, emotional and cognitive responses, and executive functions interact to contribute to the development of addictive online behaviors. Psychological predispositions like low self-esteem, loneliness, or antisocial tendencies increase vulnerability to problematic online use (Brand, Young, & Laier, 2016; Brand et al., 2019). In this study, anti-mattering—feeling insignificant or unimportant—is viewed as a psychological tendency that, according to the I-PACE model, may drive individuals to seek online validation, particularly on social media.

The Need to Belong Theory (Baumeister & Leary, 1995) and Self-Determination Theory (Deci & Ryan, 2000) provide further insight. Self-determination theory highlights three core needs: relatedness, competence, and autonomy. Anti-mattering reflects a lack of relatedness, leading to social isolation and increased validation-seeking on social media, which is characterized by instant feedback such as likes and comments. Baumeister and Leary (1995) emphasize that the desire to form lasting social bonds motivates behavior and emotion. Individuals experiencing anti-mattering may use digital platforms to fulfill this need for approval and belonging.

According to the Uses and Gratifications Approach (Katz, Blumler, & Gurevitch, 1973), people use media to satisfy social or psychological needs, such as approval, social connection, escape, and emotional relief (Papacharissi & Rubin, 2000; Whiting & Williams, 2013). For those with anti-mattering, social media serves both as a source of acceptance and emotional comfort.

These personal sensitivities vary by gender, perceived family income, and parenting style, which in turn influence digital behaviors. Psychological needs underlying digital addiction manifest differently by gender (Li et al., 2024; Paş & Çelik, 2024). Perceived family income affects experiences of inadequacy and worthlessness (Arslan, 2019; Li et al., 2024; Paş & Çelik, 2024). Parenting style impacts feelings of value; neglectful or authoritarian environments may intensify anti-mattering and, consequently, digital addiction (Li et al., 2024).

Within this framework, experiences of anti-mattering, where individuals feel insignificant, invisible, or worthless, may be linked to digital addiction. The feeling of anti-mattering can trigger a person's pursuit of acceptance and visibility in the digital world. Accordingly, this study examined the relationship between high school students' levels of digital addiction and anti-mattering. Additionally, the study investigated whether high school students' levels of digital addiction and feelings of worthlessness differ according to gender, perceived family income, and perceived parenting style. The findings of this research may contribute to the development of more effective, evidence-based prevention strategies that support the psychological well-being of young people growing up in an increasingly digital world.

Table 1. Demographic information of the sampled high school students

Category		Frequency (f)	Percentage (%)
Gender	Female	307	65
	Male	165	35
Perceived Family Income	Low	24	5.1
	Middle	409	86.7
	High	39	8.3
Perceived Parenting Style	Authoritarian	100	21.2
	Democratic	106	22.5
	Neglectful	25	5.3
Total	Protective	241	51.1
		472	100

Table 1 presents the demographic information for the high school students included in the sample. According to Table 1, 65% of the participants are female, and 35% are male. Regarding perceived family income, the majority of participants (86.7%) belong to the middle-income group, while 8.3% and 5.1% are in the high- and low-income groups, respectively. Regarding perceived parenting style, 51.1% of participants come from protective families, 22.5% from democratic families, 21.2% from authoritarian families, and 5.3% from neglectful families.

Measurement Tools

Data were gathered using the Anti-Mattering Scale, developed by Flett et al. (2022) and adapted into Turkish by Uylas and Uylas (2023), and the Adolescent Digital Addiction Scale, developed by Seema et al. (2022) and adapted by Arslan (2023). Additionally, before the scales, demographic questions were included to assess students'

Method

Study Design

The study employed a relational survey design, a type of quantitative research method. This approach is used to determine whether a relationship exists between two or more variables and to measure its strength (Karasar, 2017).

Study Population and Participants

The participants of the study were students attending public high schools located in three metropolitan cities during the 2022–2023 academic year. These three cities were selected based on the researchers' accessibility to high school students. The total number of students in the population was 205,846: 125,899 in the first city, 56,773 in the second, and 23,174 in the third (MoNE, 2024). The sample size calculation, based on a 95% confidence level and a 5% margin of error, indicated that at least 384 participants were required for the study (Yazıcıoğlu & Erdoğan, 2004). The study sample consisted of 472 voluntary students selected from the research population using convenience sampling. Convenience sampling is a method in which the researcher collects data from a sample group composed of individuals who are easily accessible and willing to participate. Although this method offers advantages in time and cost, the representativeness of the data for the entire population may be limited (Fraenkel, Wallen, & Hyun, 2012).

characteristics (gender, perceived family income, perceived parenting style).

Adolescent Digital Addiction Scale

The Adolescent Digital Addiction Scale, developed by Seema et al. (2022) and adapted into Turkish by Arslan (2023), is a single-factor, 10-item scale. It is structured as a 7-point Likert scale, with no reverse-coded items. Response options include: 1-Never, 2-Rarely, 3-Occasionally, 4-Sometimes, 5-Frequently, 6-Mostly, 7-Always. According to Arslan (2023), scores are interpreted as follows: 1.00–1.86 = never, 1.82–2.71 = rarely, 2.72–3.57 = occasionally, 3.58–4.43 = sometimes, 4.44–5.29 = frequently, 5.30–6.14 = mostly, 6.15–7.00 = always. In the adaptation study, item-total correlations ranged from 0.45 to 0.71, and the KMO value was 0.86. The scale explained 70.9% of the total variance. Confirmatory factor analysis yielded the following fit

indices: NFI = .87; NNFI = .84; CFI = .88; IFI = .88; SRMR = .09; RFI = .83, indicating a good model fit for the single-factor structure. Cronbach's alpha reliability coefficient was .85 in the original Turkish adaptation and .87 in the current study. A reliability coefficient above .70 indicates sufficient reliability for scale scores (Büyüköztürk, 2015); thus, the scale is considered reliable for this research.

Anti-mattering Scale

The Anti-Mattering Scale was developed by Flett et al. (2022), based on four studies conducted on different sample groups. The first three studies were conducted with university students, while the fourth was conducted with adolescents. The Cronbach's alpha coefficients for these studies were as follows: Study 1, .86; Study 2a, .91; Study 2b, .92; Study 3, .85; and Study 4, .77. Uylas and Uylas (2023) conducted a Turkish adaptation study for high school students. The scale, consisting of 5 items and a single-factor structure, was found to be compatible with Turkish culture. Item-total correlations ranged from .69 to .79, and the KMO and Bartlett's Test yielded a value of .87. The scale explained 70% of the variance. Confirmatory factor analysis results indicated excellent model fit with the following indices: NFI = 1.00; NNFI = .99; CFI = 1.00; IFI = 1.00; SRMR = .013; RFI = .99. The findings of both exploratory and confirmatory factor analyses support the validity of the single-factor model (Uylas & Uylas, 2023). The scale uses a 5-point Likert scale with the following options: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Frequently, 5 = Always. Response scores are interpreted as: 1.00–1.79 = never, 1.80–2.59 = rarely, 2.60–3.39 = sometimes, 3.40–4.19 = frequently, 4.20–5.00 = always. In this study, Cronbach's alpha was .89. This reliability level exceeds the acceptable threshold of .70 for social science research (Büyüköztürk, 2011), indicating that the scale is reliable for measuring high school students' perceived insignificance.

Data Gathering Process

Permission was obtained via email from the authors of the original and adapted scales. The necessary ethical approvals were obtained from the ethics committee and relevant institutions to administer the scales to high school students. Google Forms was used to collect the data. The purpose and importance of the study were explained at the beginning of the form, and participation was based on informed voluntary consent.

Ethics Approval

Permission to use each of the scales employed in this study was obtained. Ethical approval for the conduct of this study was granted by the Educational Research and Publication Ethics Committee of Sakarya University (Document No: E-61923333-050.99-222325, Date: 20.02.2023).

Table 2. Pearson correlation coefficient results for the association between Digital Addiction and Anti-Mattering among high school students

	Digital Addiction	
Anti-mattering	<i>r</i>	.243**
	<i>p</i>	.000
	N	472

According to the results in Table 2, a moderate, positive, and statistically significant relationship was found

Analysis of Data

SPSS 26.0 was utilized to analyze the data. Frequency and percentage distributions were used to determine the participants' demographic profiles. Measures of central tendency and variability, such as means and standard deviations, were calculated to evaluate students' digital addiction levels and feelings of anti-mattering. To determine the appropriate statistical tests, normality tests were conducted for each variable. The results indicated that the skewness and kurtosis coefficients were within ± 1 for both variables. Specifically, for Digital Addiction (N = 472), skewness was .370 and kurtosis was .044, while for Anti-mattering (N = 472), skewness was .186 and kurtosis was .993. These values indicated that the data were normally distributed and that parametric tests could be used (Hair et al., 2010).

The Pearson Correlation Coefficient was used to examine the relationship between digital addiction and anti-mattering levels. Furthermore, hierarchical regression analysis was conducted to investigate the relationship between digital addiction and anti-mattering in more detail. In this analysis, gender, perceived family income, and perceived parenting style were first included in the model as control variables; the predictive power of the anti-mattering variable for digital addiction was then evaluated.

To determine whether variables differed between two independent groups, the Independent Samples T-Test was used. For differences among more than two independent groups, the ANOVA test was employed. Therefore, the t-test was applied for the gender variable, while ANOVA was used for perceived family income and perceived parenting style variables. To interpret the effect sizes of the descriptive values obtained from the t-test, Cohen's d formula was used. According to Cohen's d (Cohen, 1988), the effect size interpretation criteria were as follows: $d \geq 1$ indicates a very large effect, 0.8 a large effect, 0.5 a medium effect, and 0.2 a small effect. For the ANOVA results, Tukey's B and Bonferroni tests, along with mean scores, were used to identify the sources of the differences.

Findings

In the study, Pearson Correlation Coefficient Analysis and Hierarchical Regression Analysis were conducted to determine the relationship between the concepts within the context of the problem: Is there a significant relationship between high school students' levels of digital addiction and anti-mattering? Table 2 presents the Pearson correlation coefficients, and Table 3 presents the results of the hierarchical regression analysis.

between digital addiction and anti-mattering levels among high school students ($r = .243$; $p < .01$). This finding

indicates that as students' levels of digital addiction increase, their feelings of anti-mattering also tend to increase. In other words, students who are excessively and uncontrollably dependent on digital tools may be more likely to feel unnoticed or unimportant to others.

In hierarchical regression analysis, control variables such as gender, perceived parenting style, and perceived family income were entered into the model in the first step, followed by the anti-mattering variable to test its effect. The analysis results are presented in Table 3.

Table 3. Hierarchical regression output

Model	R ²	ΔR ²	F	p
1	.061	–	10.496	.000
2	.112	.051	14.668	.000

Note: Model 1 includes the control variables: gender, perceived family income, and parenting style, while Model 2 also includes digital addiction. ΔR² indicates the contribution of digital addiction to the model.

According to the hierarchical regression results presented in Table 3, in Model 1, the control variables — gender, family income, and parenting style—collectively explain 6.1% of the variance in digital addiction (R² = .061, p < .001). This model is statistically significant (F = 10.496, p = .000). In Model 2, the anti-mattering variable (feeling of worthlessness) was added. With the inclusion of the anti-matter variable, the explained variance increased to 11.2%, and this added variable significantly contributed to explaining digital addiction (ΔR² = .051, p < .001, F = 14.668, p = .000). The findings indicate that antimatter levels of high school students are a significant and positive predictor of digital addiction. In other words, as anti-mattering levels increase, digital addiction levels also increase.

The findings indicated that high school students' digital addiction levels were at the “occasionally” level (N = 472, M = 3.40, SD = 1.22), while their anti-mattering levels were at the “sometimes” level (N = 472, M = 2.86, SD = 1.18). The average level of digital addiction among high school students corresponds to the “occasionally” category, while the average anti-mattering level corresponds to the “sometimes” category. This suggests that students do not use digital devices or the internet constantly and intensely, but rather at regular intervals and with moderate frequency. On the other hand, students occasionally report feeling invisible, unimportant, or devalued by others.

Descriptive statistics were performed to assess the levels of digital addiction and anti-mattering in high school

An independent samples t-test was carried out to investigate whether students' levels of digital addiction and anti-mattering differed significantly by gender. The results are presented in Table 4.

Table 4. T-Test results for Digital Addiction and Anti-Mattering scales by gender

Scale	Gender	N	Mean	Standard Deviation	t	df	p	Cohen-d
Digital Addiction	Female	307	3.49	1.21	2.27	470	.02	0.219
	Male	165	3.22	1.23				
Anti-mattering	Female	307	2.97	1.15	2.77	470	.00	0.266
	Male	165	2.65	1.21				

Table 4 indicates that there is a statistically significant difference in digital addiction levels between genders (p < .05). Female students (M = 3.49) had higher levels of digital addiction than male students (M = 3.22). However, the effect size of this difference was small (Cohen's d = 0.219). Similarly, anti-mattering levels differed significantly by gender (p < .05). The mean scores favored female students, who reported higher anti-mattering levels

than male students. However, the magnitude of this difference was small as well (Cohen's d = 0.266).

An ANOVA was conducted in the study to determine whether digital addiction and anti-mattering levels among high school students differ significantly by perceived family income, and the findings are presented in Table 5.

Table 5. ANOVA test of Digital Addiction and Anti-Mattering levels according to perceived family income status

Scale		Sum of Squares	df	Mean Square	F	p	Tukey-b
Digital Addiction	Between Groups	9.995	2	4.998	3.358	.036	2-3
	Within Groups	697.982	469	1.488			
	Total	707.977	471				
Anti-mattering	Between Groups	3.403	2	8.090	5.894	.003	1-2 / 1-3
	Within Groups	656.435	469	1.372			
	Total	659.839	471				

Note: 1 = Low family income level; 2 = Medium family income level; 3 = High family income level.

As seen in Table 5, the digital addiction and anti-mattering levels of high school students show significant differences based on perceived family income ($p < .05$). According to Tukey-b and Bonferroni tests, an important difference was found between the middle- and high-income groups in terms of digital addiction, with students from high-income families exhibiting higher levels of digital addiction. In

On the anti-mattering scale, students in the low-income group reported feeling more worthless than those in the middle- and high-income groups.

An ANOVA analysis was also performed to determine whether the digital addiction and anti-mattering levels of high school students differ according to the perceived parenting style variable, with the results shown in Table 6.

Table 6. ANOVA Test of Digital Addiction and Anti-Mattering levels according to perceived parenting style

Scale		Sum of Squares	df	Mean Square	F	p	Tukey-b
Digital Addiction	Between Groups	25.727	3	8.576	5.883	.000	2-3
	Within Groups	682.250	468	1.458			
	Total	707.977	471				
Anti-mattering	Between Groups	48.930	3	16.310	12.495	.000	1-4 / 2-3 / 3-4
	Within Groups	610.909	468	1.305			
	Total	659.839	471				

Note: 1 = Protective parenting style; 2 = Authoritarian parenting style; 3 = Neglectful parenting style; 4 = Democratic parenting style.

Table 6 reveals significant differences in digital addiction and anti-mattering levels among high school students based on perceived parenting style ($p < .05$). According to Tukey-B and Bonferroni tests, a significant difference in digital addiction was observed between the permissive and authoritarian parenting styles, with students experiencing authoritarian parenting showing higher levels of digital addiction. Regarding anti-mattering levels, significant differences were found among the neglectful-democratic, permissive-authoritarian, and authoritarian-democratic parenting styles; students exposed to neglectful and authoritarian parenting reported feeling more worthless.

Discussion

This study's findings demonstrated a moderate, positive association between high school students' digital addiction and anti-mattering levels. Moreover, the study found that high school students' anti-mattering levels significantly and positively predicted digital addiction. Although variables such as gender, perceived family income, and perceived parenting style had an effect, it was concluded that feelings of worthlessness have a strong impact on digital addiction. These results suggest that as students feel more insignificant, they tend to turn more toward digital technologies, leading to increased levels of digital addiction. Similarly, previous studies have found that individuals who only feel significant in online environments are more likely to develop social media addiction and struggle to maintain a healthy balance between offline and online life. In other words, individuals experiencing anti-mattering in offline settings may increasingly seek validation through social media (Duradoni et al., 2024).

The sense of mattering is significantly associated with psychological distress, online activity, and problematic social media use among adolescents (Watson, Prosek, & Giordano, 2021). Additionally, ruminative thinking shows a positive relationship with digital addiction (Gao & Du, 2025). Considering anti-mattering as an internal risk factor, studies report negative correlations between digital gaming addiction and psychological resilience (Çiçek, 2021), digital addiction and psychological well-being

(Gezer, 2022), as well as digital and internet addiction with self-esteem (Paş, 2023; Wong et al., 2020).

These findings suggest that adolescents experiencing anti-mattering may increasingly seek refuge online, raising their risk of digital addiction. Those feeling invisible or unvalued offline may turn to digital platforms for recognition, deepening their dependence, which is further intensified by negative links between digital addiction and self-esteem, resilience, and well-being.

The study's descriptive results showed students had moderate digital addiction ("occasionally") and "sometimes" levels of anti-mattering, consistent with previous research reporting moderate psychological well-being and digital addiction levels (Arslan, 2019; Göldağ, 2018; Kaya & Vangözü, 2023). This suggests that students intermittently use digital environments when they feel insignificant.

Although the effect size was small, female students reported higher digital addiction and anti-mattering levels than males, aligning with some studies (Soyöz Semerci & Balcı, 2020; Paş, 2023; Gezer, 2022), but contrasting others that found higher digital addiction in males (Göldağ, 2018; Çiçek, 2021). Flett et al. (2022) found no gender difference in anti-mattering among university students, whereas Atkey (2015) noted that males felt more stigmatized when seeking psychological help due to experiencing anti-mattering. Çiçek (2021) found no gender difference in psychological resilience in high school students.

These mixed results indicate that gender's role in digital addiction and anti-mattering is complex and influenced by factors such as sample, gender norms, developmental stages, methods, and measurements, highlighting the need for further research.

The study found significant differences in high school students' digital addiction and feelings of worthlessness based on perceived family income. High-income students had higher digital addiction than middle-income peers, while low-income students reported greater worthlessness than middle- and high-income groups. These findings

align with Sarıkan (2023) and Paş & Çelik (2024), emphasizing socioeconomic status as a key factor in adolescents' psychological well-being and addictive behaviors.

Significant differences were also found in digital addiction and anti-mattering by perceived family attitudes. Students from authoritarian or permissive families showed higher digital addiction than those with protective attitudes, consistent with Kalen (2018) and Mutimmatul et al. (2018), who linked positive parenting to lower addiction. Anti-mattering was higher among students with neglectful and authoritarian parents compared to democratic and protective ones, suggesting these environments harm adolescents' psychological health. Thus, democratic and supportive family attitudes serve as protective factors against digital addiction and feelings of worthlessness.

This study highlights that psychological constructs like anti-mattering have a meaningful impact on comprehending and reducing digital addiction. Future research should explore these relationships in greater depth and consider psychological traits that may influence digital media usage habits. Doing so may help in developing more effective strategies to support adolescents' psychological well-being.

This study has several limitations. First, it was conducted only with high school students attending public schools in three major cities during the 2022-2023 academic year; therefore, the findings cannot be generalized to all high school students in Turkey. Second, the data rely on participants' self-reports, which may be affected by biases such as social desirability or recall bias. Third, the measurement tools used in the study are limited to assessing digital addiction and anti-mattering; the broader, qualitative aspects of students' digital use and experiences of feeling worthless were not examined. Fourth, the study employs a cross-sectional design, which does not allow for causal inferences about relationships between variables.

Future research is recommended to use larger sample sizes, qualitative methods, and longitudinal designs to address these limitations.

Declarations

Ethics Committee Approval and Consent to Participate

Ethical approval for the conduct of this study was obtained from the Educational Research and Publication Ethics Committee of Sakarya University, with the document number E-61923333-050.99-222325, dated February 20, 2023. The application was reviewed and approved at the committee meeting held on 15 February 2023, with decision number 19. Throughout the research process, the ethical principles outlined in the Declaration of Helsinki were followed, and informed consent was obtained from all participants.

Consent for Publication

Not applicable.

Availability of Data and Materials

The data sets used and/or analyzed for the current study, as well as those available in the online database, can be obtained from the relevant author upon reasonable request.

Competing Interests

The author declares that no competing interests exist in this manuscript.

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Authors' Contributions

Both authors contributed equally to this work. Each author participated in all phases of the research process, including study design, data collection, data analysis, and manuscript preparation. Both authors reviewed and approved the final version of the manuscript.

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