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Original Research

An Examination of Bullying Behaviors in Children in Relation to Problematic Media Use and Digital Game Addiction

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Abstract

Objectives: This study aimed to examine bullying behaviors in relation to problematic media use and digital game addiction among children. The research employed a quantitative analytic cross-sectional design.
Materials and Methods: The study sample consisted of 184 children aged 5–6 years, 184 parents, and six preschool teachers. Data were collected using a Personal Information Form, the Problematic Media Use Scale for Children, the Bullying and Victimization Behavior Assessment Form, and the Digital Game Addiction Tendency Scale. Data were analyzed with SPSS version 25.0.
Results: The results indicated that as the subscale of the Digital Game Addiction Scale for escapism increased, children's tendency to be in the victim role and problematic media usage also increased. A significant relationship was found between children in the passive-bully role and the life-immersion subscale of the Digital Game Addiction Scale. A strong association was demonstrated between the subscales of life dissociation from life, conflict, constant play, and life reflection on the Digital Game Addiction Scale and the scores on the Problematic Media Use Scale. In addition, digital game addiction and problematic media use were found to have predictive effects on children's bullying behaviors.
Conclusion: Developing intervention programs addressing digital game addiction and problematic media use during the preschool period is anticipated to serve as a preventive measure to reduce bullying behaviors.

Keywords: *peer bullying, digital literacy, preschool, computer games, video games*

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Introduction

In the 21st century, technology has become a ubiquitous element influencing numerous aspects of life, including health and education, and is present everywhere. Although technology provides many conveniences, it also raises certain concerns. Today, children actively use devices such as phones, computers, digital games, tablets, televisions, and the Internet (Mustafaoğlu et al., 2018). Research indicates that children in early childhood typically use one or more technological devices daily, with usage times ranging from 30 minutes to four hours (Coyne et al., 2021). In this context, the study conducted in Turkey by Tozduman Yaralı and Kavruk (2026) revealed that 73.5% of children aged 3 to 5 spend two hours or more per day in front of screens.

The American Academy of Pediatrics (AAP) recommends restricting screen time for preschool-aged children to one hour per day (American Academy of Pediatrics, 2018); however, research shows that daily screen time for preschool children often exceeds 3.5 hours (Konca, 2022). Additionally, one in five children has problematic phone use (Park & Park, 2021). Additionally, the study conducted in Turkey by Tozduman Yaralı and Kavruk (2026) found that problematic technology use among preschool children did not differ by gender.

Given that the preschool period is a critical stage for behavior problems (Alper, 2024), addressing the increasingly prevalent issue of bullying is important, as early intervention in preschool-stage bullying behaviors is deemed essential (Tanrıkulu et al., 2021). In the study conducted by Şahin and Turhan (2025), it was reported that children in preschool education settings are exposed to peer bullying at higher rates than in other developmental periods, as they spend most of their time in classroom environments. Problematic media use is identified as a risk factor for bullying behaviors (Bağcı-Çetin, 2023). In the scholarly literature, it is noted that children with digital game addiction and problematic technology use tend to exhibit higher levels of bullying behaviors (Hidayat et al., 2022; Zhao et al., 2020). In addition, it is emphasized that preschool children who exhibit bullying behaviors are more likely to display problematic behaviors in later years (Bağcı-Çetin, 2023). Based on this, examining bullying behaviors in preschool children in terms of problematic media use and digital game addiction is expected to guide future research in this area and form a basis for intervention programs.

Bullying in the Preschool Period: Problematic Media Use and Digital Games

Due to their developmental characteristics, preschool-aged children may exhibit risky or problematic technology use patterns even if they are not yet addicted. Problematic media

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habits observed in this period can lay the groundwork for irregular or addictive technology use in adolescence and adulthood (Domoff et al., 2020). Problematic technology use in preschool is associated with attention problems, aggressive behaviors, obesity (Mitchell et al., 2013), physical inactivity (Cox et al., 2012), and sleep problems (Restrepo et al., 2020). In the study conducted in Turkey by Tozduman Yaralı and Kavruk (2026), 75.8% of parents reported having rules regarding their children's technology use, while 19.4% stated that they were unable to enforce these rules; this finding highlights the critical importance of parents' ability to set and implement boundaries during the preschool period, when emotion regulation skills are being developed.

Most children favor digital games for entertainment, which stands out as one of the most common reasons for Internet use (Tozduman Yaralı, 2024). Problematic media use and increasing tendencies toward digital game addiction among children appear to negatively affect the development of preschool-aged children (Bağcı-Çetin, 2023; Li et al., 2024). Yan (2006) showed that children under 10 perceive the Internet in a limited and superficial way, making younger age groups more vulnerable to online risks. Educational games can play a supportive role in child development, whereas prolonged use of entertainment-oriented games may have adverse effects. These negative effects vary by content, context, and individual characteristics (Haidt, 2024; Kanter, 2020; Rosyati et al., 2019). Inappropriate and prolonged playing of digital games is reported to increase aggressive and violent behaviors among preschoolers (Boz & Dinç, 2023; Li et al., 2024).

Bullying is defined as behaviors with a power imbalance between the bully and the victim, carried out systematically with the intention to harm (Hidayat et al., 2022). Victims of bullying experience adverse social, emotional, physical, and psychological development (Zhao et al., 2020). The concept of bullying is divided into direct and indirect forms. Direct bullying includes physical assault, derogatory words, and mocking imitation; indirect bullying involves social exclusion, deliberate ostracism from group activities, and spreading false rumors (Hazar & Ekici, 2021; Nwanosike et al., 2022). Today, bullying increasingly occurs in online environments, commonly referred to as cyberbullying (Selçuk, 2024). Therefore, children's engagement with technology appears to be a determinant for problematic media use, digital game addiction, and bullying behaviors (Nwanosike et al., 2022; Neumayer et al., 2023).

Theoretical Framework and Current Study

It has been shown that a child's age exerts a determining influence on how Internet use

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is perceived both technically and socially (Yan, 2006). As age decreases, children's abilities to recognize, assess, and manage potential online risks become more limited. Exposure to inappropriate content, prolonged technology use, negative themes in digital game content, and participation in online multiplayer games (Tozduman Yaralı, 2024) render children more vulnerable to dangers encountered in digital environments.

Bronfenbrenner's (1977) ecological systems theory explains individual development through interconnected multilayered environmental systems. With the advent of digitalization, this framework has been reinterpreted as the Neo-Ecological Theory (Navarro & Tudge, 2023). In Bronfenbrenner's ecological systems theory, the family is an important factor within the microsystem component. In this context, resources such as the "Parental Guide to Technology Addiction," prepared by the General Directorate of Health in Turkey, are provided to guide parents in managing their children's technology use (Ministry of Health, 2023). According to the neo-ecological perspective, a child's environment is no longer limited to family, school, and peer relationships; technological devices, online interaction spaces, and digital games have become important microsystem components. Based on the theory, it is posited that problematic media use leads to bullying behaviors by disrupting the child's relationships with the family and school within the microsystem. In this context, digital games and media environments provide powerful interaction spaces that influence children's social relationships, identity development, and behavior patterns. Problematic media use and digital game addiction may pose risks for the development of bullying behaviors in children. The neo-ecological approach offers a holistic explanatory foundation by evaluating such behaviors not only in terms of individual characteristics but also considering the quality of interactions within digital microsystems and the contexts of family and school.

Problematic technology use and digital games are described as capable of increasing bullying and aggressive behaviors while reducing prosocial behaviors in children. However, research on the relationship between bullying behaviors and problematic media use and digital game addiction in children appears to be limited to middle childhood (Hazar & Ekici, 2021). Given the importance of early intervention for healthy development, identifying the causes of bullying behaviors exhibited by preschool children is of great significance (Bağcı-Çetin, 2023). Therefore, this study aims to examine bullying behaviors in relation to problematic media use and digital game addiction. The following research questions were posed:

1) Is there a significant relationship between children's bullying behaviors and digital

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game addiction and problematic media use?

2) Is there a significant relationship between children's digital game addiction and problematic media use?

3) Do problematic media use and digital game addiction predict children's bullying behaviors?

Methods

Research Model and Design

The study was conducted as a quantitative, cross-sectional research using a correlational survey design. In this study, a predictive correlational design was employed, aiming not only to describe relationships but also to predict the variance in the dependent variable. The correlational design is one of the quantitative research patterns aiming to reveal the existence and direction of relationships between two or more variables. Within this framework, the co-variation between variables is examined, and it is sought to determine whether there is a meaningful relationship and the nature of that relationship (Karasar, 2011).

Study Population

The population consisted of children aged 5–6 years attending preschool education institutions affiliated with the Ministry of National Education in Efeler district, Aydın, along with their parents and teachers. The sample size was determined via power analysis using G*Power 3.1. To test the relationship between Bullying Behavior Scores and the scores of the DOB and Problematic Media Use Scale, a correlation analysis was used. With a 95% confidence interval ($\alpha = 0.05$), 95% statistical power, and since no similar previous study existed, the effect size was assumed to be moderate ($r = 0.3$). Based on these parameters, the minimum number of children required for the study was calculated as 134. By adding a 10% possible loss rate and rounding the number, it was planned to include at least 150 parents in the study. Participants were included in the research through convenience sampling from the population.

The population consisted of children aged 5–6 years attending preschool education institutions affiliated with the Ministry of National Education in Efeler district, Aydın. Data were obtained through reports provided by the parents and teachers of these children. The sample of the study consisted of the teachers (six teachers) and parents of 184 children included in the research, who were selected from the population through random sampling. Table 1 presents the descriptive characteristics of the participating children and their parents.

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Table 1. Descriptive Characteristics of Children and Their Parents Participating in the Study (n=184)

Characteristic	Number	%
Child's Age		
5 years	56	30,4
6 years	128	69,6
Child's Gender		
Girl	79	42,9
Boy	105	57,1
Mother's Education Level		
Primary School	28	15,2
High School	73	39,7
University	70	38,0
Postgraduate	13	7,1
Father's Education Level		
Primary School	28	15,2
High School	51	27,7
University	89	48,4
Postgraduate	16	8,7
Father's Employment Status		
Unemployed	4	2,2
Employed	180	97,8
Number of Siblings		
1	70	38,0
2	78	41,4
3	22	12,0
4 ve üstü	14	7,6
Duration of Attendance in Preschool Education Institution		
First year	66	35,9
Second year	102	55,4
Third year	16	8,7
Child's Daily Screen Time		
1 hour or less	36	19,6
2 hour	58	31,5
3 hour	50	27,2
4 hours or more	40	21,7

Table 1 presents information on the child's age and gender, mother's and father's education, father's employment status, number of siblings, duration of preschool attendance, and the child's daily screen time. Examination of Table 1 shows that 69.6% (n = 128) of the participating children were 6 years old, and 30.4% (n = 56) were 5 years old. Regarding gender, 57.1% (n = 105) of the children were male. In terms of parental education, 39.7% of mothers were high school graduates, and 48.4% (n = 89) of fathers were university graduates. Among the children, 41.4% (n = 78) had two siblings. The majority (55.4%, n = 102) of the children were in their second year at the preschool institution. The daily screen time for 27.2% (n = 50) of the children was three hours.

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Data Collection and Ethical Considerations

Ethical approval for the study was obtained from the Adnan Menderes University Clinical Research Ethics Committee, dated 06.06.2023, and numbered 359095. After obtaining the necessary permissions from the Ministry of National Education, the data collection instruments and the informed parental consent form were distributed to preschool teachers by the researchers. The forms completed by the parents were collected by the teachers on behalf of the researchers.

Data Collection Tools

To collect data, the Personal Information Form, Problematic Technology Use Scale for Children, Bullying and Victimization Behavior Assessment Form, and Digital Game Addiction Tendency Scale were used. Necessary permissions were obtained from researchers who adapted or developed these instruments.

Personal Information Form

Prepared for parents to complete. It collects sociodemographic characteristics of participants, including parents' education and employment statuses, family socioeconomic status, number of children in the family, the child's age and sex, the child's daily screen time, and time spent using different media tools (10 items).

Problematic Media Use Measure (PMUM)

Developed by Domoff et al. (2017) to assess problematic media use in children aged 4–11. Adapted by Furuncu (2019). In both the short and long forms, exploratory factor analysis supported a single-factor structure consistent with the original study. PMUM Cronbach's alpha = .97; PMUM-KF Cronbach's alpha = .92. The long form has 27 items, and the short form has 9 items. Items are rated on a 1 (never) to 5 (always) Likert scale. The total PMUM score is the mean of all item scores. For this study, PMUM Cronbach's alpha was 0.89.

Bullying and Victimization Behavior Assessment Form

Developed by Özyürek and Kurnaz (2019) to assess bully and victim behaviors. Completed separately for each child by the classroom teacher based on observations. Reliability is assessed via KR-20. Subscales: Bullying Behaviors (0.86), Victim Behaviors (0.88), and Passive-Bully Behaviors (0.71). The instrument comprises three subscales and 32 items labeled Zorba-Child Behaviors (Z1-Z13), Victim-Child Behaviors (K1-K14), and Passive-Bully-Child Behaviors (P1-P5).

Digital Game Addiction Tendency Scale (DPAT)

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Developed by Budak and Işıkoğlu (2022) to assess preschoolers' tendencies toward digital game addiction. Subscale reliabilities (Cronbach's alpha): Dissociation from Life 0.88, Conflict 0.90, Constant Play 0.82, Reflection on Life 0.70. The overall reliability is 0.93. Data for this scale are collected from parents and comprise four subscales: dissociation from life, conflict, constant play, and reflection on life. Cronbach's alpha for the DPAT in this study was 0.94.

Data Analysis

Data were analyzed using SPSS version 25.0. Descriptive statistics (counts, percentages, means) were reported, and analyses included variance, multiple regression, and correlation analyses. Pearson correlation was used for data with normal distribution; Kendall's Tau-b was used for non-normally distributed data. A p-value of <0.05 was considered statistically significant. The normality of the obtained data was examined using skewness and kurtosis values. Measurements with skewness and kurtosis values between +1.5 and −1.5 were accepted as normally distributed (Tabachnick & Fidell, 2013). In addition, the assumptions of the regression analysis were also examined. To assess the multicollinearity problem, the Variance Inflation Factor (VIF) and tolerance values were calculated. The analysis results showed that the VIF values were below 10 and the tolerance values were above 0.10, indicating that there was no multicollinearity problem among the variables.

Table 2. Scale Scores and Their Distribution

Scale	**Mean (Min–Max)**	**Standard Deviation**
Problematic Media Use Scale	**15,294 (Min:9, Max:30)**	**5,294**
Digital Game Addiction Tendency Scale – Total Score	42,935 (Min:20, Max:80)	0,920
Dissociation from Life	13,522 (Min:7, Max:25)	4,840
Conflict	11,010 (Min:5, Max:24)	4,873
Constant Play	11,484 (Min:5, Max:23)	4,169
Reflection on Life	6,919 (Min:3, Max:14)	2,528
Distribution of the Digital Game Addiction Tendency Scale by Categories	**n**	**%**
Very low addiction tendency	66	35,9
Low addiction tendency	65	35,3
Moderate addiction tendency	41	22,3
High addiction tendency	13	6,5
Very high addiction tendency	-	-
Bully–Victim Child Total	7,837(Min:0,Max:24)	6,019
Bully Child Behavior	2,826(Min:0,Max:13)	3,711
Victim Child Behavior	3,331(Min:0,Max:22) Mean:1	4,253 Range:22,00
Passive-Bully Child Behavior	1,679(Min:0,Max:5)	1,554

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Results

In this section, the findings obtained from the data analyses are presented in tables. Table 3 provides the results regarding the relationship between the children's bullying behaviors and their digital game addiction and problematic media use.

Table 3. Relationship Between Bullying Behavior Scores and DPAT and PMUM Scores

Scale of Bully and Victim Child Behaviors		Dissociation from Life	Conflict	Persistent Play	Reflection on Life	Total DPAT	Problematic Media Use Measure
Victim Child	r	0,154	0,095	0,076	0,016	0,097	0,142*
	p	0,005**	0,098	0,166	0,772	0,074	0,010
Bully Child	r	-0,095	0,115	-0,030	-0,009	-0,003	0,061
	p	0,198	0,120	0,691	0,903	0,964	0,407
Passive-Bully Child	r	0,055	0,017	-0,033	0,173*	0,046	0,024
	p	0,458	0,818	0,654	0,019	0,534	0,745

*$p<0,05$ **$p<.01$

Table 3 shows that the Victim Child scores did not follow a normal distribution, so Kendall's Tau-b was used for correlations. For the Bully and Passive-Bully child scores, Pearson correlation analyses were conducted. A positive but weak statistically significant relationship was found between the Victim Child score, the DPAT Dissociation from Life score, and the PMUM score. Specifically, the Victim Child score showed a positive, weak association with DPAT Dissociation from Life (r and p values as reported) and with PMUM (r and p values as reported). The correlation analysis indicated that the Bully Child role was not significantly associated with the sub-dimensions of the DPAT or the Problematic Media Use Scale. However, in the regression analysis, Bully Child scores were found to be significantly predicted by the model. This apparent inconsistency may be explained by the methodological differences between correlation and regression analyses. While correlation analysis examines simple bivariate relationships between variables, regression analysis evaluates the unique contribution of each independent variable by controlling for the effects of other variables in the model. Therefore, a variable that does not show a significant bivariate correlation may become significant in a regression model due to shared variance among predictors or a possible suppression effect.

Table 4 shows that the subscales of the DPAT Dissociation from Life, Conflict, Constant Play, and Life on Reflection, and the PMUM scores have a statistically positive and strong

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relationship. Additionally, the total DPAT score has a positive and very strong relationship with the PMUM scores.

Table 4. Relationship Between DPAT and PMUM Scores

Digital Game Addiction Scale		**Problematic Media Use Scale**
Dissociation from Life	r	0,710**
	p	0,000
Conflict	r	0738**
	p	0,000
Constant Play	r	0,706**
	p	0,00
Reflection to Life	r	0,542**
	p	0,000
Total DGAS Score	r	0,808**
	p	0,000

**p<0,05 **p<*.01

Table 5. Differences in Bullying Score Means by Digital Game Addiction Tendency Groups (n = 184)

	Very Low DGAT		**Low DGAT**		**Medium/high DGAT**		**F/Chi-square**	**p**
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**		
Victim Child	2,909	4,623	3,508	4,381	3,642	3,601	4,202**	0,122
Bully Child	3,091	3,566	3,938	3,938	3,633	3,633	0,575	0,564
Passive-Bully Child	1,394	1,466	2,108	1,621	1,509	1,489	4,027	0,019

**Because the number of participants in the High DGAT group was small, groups were combined.*
***Kruskal–Wallis Analysis, p < 0.05*

The source of the difference in Passive-Bully Child scores was analyzed using the LSD test. The difference arises between the group with low addiction tendency and the very low (Mean Difference (I–J) = –0.714, SD = 0.267, p = 0.008, p < 0.01, 95% CI: –1.2410 to –0.1865) and the moderate/high (Mean Difference (I–J) = –0.598, SD = 0.283, p = 0.036, p < 0.05, 95% CI: –1.1567 to –0.0398) DGAT groups. The mean score of the low addiction tendency group differs from the other groups. Table 6 presents the effects of problematic media use and digital game addiction scores on bully and victim behaviors.

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Table 6. The Effect of PMUM and DPAT Scores on Bully and Victim Child Behaviors

Model			Unstandardized B	Coefficients Std. Error	Srandardized Coefficients Beta	T	Sig	95.0%Confidence Interval for B	
								Lower Bound	Upper Bound
Bully Child	1	Costant	3,403	0,902		3,771	0,000	1,622	5,185
		Dissociation from Life	-0,543	0,143	-0,707	-3,789	0,000	-0,825	-0,260
		Constant Play	-0,405	0,157	-0,455	-2,584	0,011	-0,714	-0,096
		Reflection to Life	-0,216	0,162	-0,147	-1,334	0,184	-0,536	0,104
		Total DPAT	0,265	0,090	1,003	2,929	0,004	0,086	0,443
		PMUM	0,100	0,079	0,154	1,263	0,208	-0,056	0,256
Victim Child	1	Costant	1,409	1,022		1,378	0,170	-0,608	3,426
		Dissociation from Life	0,696	0,162	0,792	4,293	0,000	0,376	1,016
		Constant Play	0,237	0,177	0,232	1,336	0,183	-0,113	0,587
		Reflection to Life	0,473	0,183	0,281	2,577	0,011	0,111	0,835
		Total DPAT	-0,348	0,102	-1,149	-3,397	0,001	-0,550	-0,146
		PMUM	0,095	0,090	0,128	1,059	0,291	-0,082	0,272
Passive Bully	1	Costant	1,233	0,382		3,225	0,478	1,987	
		Dissociation from Life	0,016	0,061	0,051	0,271	-0,103	0,136	
		Constant Play	-0,115	0,066	-0,310	-1,740	-0,246	0,015	
		Reflection to Life	0,184	0,069	0,300	2,687	0,049	0,320	
		Total DPAT	0,007	0,038	0,067	0,192	-0,068	0,083	
		PMUM	-0,003	0,033	-0,010	-0,081	-0,069	0,063	

*$p<0,05$ **$p<.01$

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PMUM and DPAT scores were analyzed to examine their effects on Bully and Victim Child Behaviors using multiple linear regression analysis. As shown in Table 6, the model that includes all scale scores was tested for its effects on Bully, Victim, and Passive-Bully scores separately. The Durbin-Watson value of the model indicates a better fit as it approaches 2. A multiple linear regression analysis was conducted. The effect of the model, which included all scale scores together, on bully child, victim child, and passive-bully child scores was tested separately.

For the bully child:

The Durbin–Watson value of the model is 1.636 (the closer the value is to 2, the better the model. This indicates a good model).

For the victim child:

The Durbin–Watson value of the model is 1.791 (the closer the value is to 2, the better the model. This indicates a good model).

For the passive-bully child:

The Durbin–Watson value of the model is 1.467 (the closer the value is to 2, the better the model. This indicates a good model).

Discussion and Conclusion

In the present study, problematic media use and digital game addiction were found to be significantly associated with victim children's behaviors, whereas no statistically significant relationships were observed for bully children. Specifically, all correlations between bully child scores and digital game addiction and problematic media use variables were non-significant. This finding suggests that, within the current sample, digital media-related behaviors may be more strongly associated with victimization than with perpetration of bullying.

One possible explanation for this result is that bullying children may engage in aggressive behaviors due to factors other than digital media use, such as family environment, peer dynamics, or personality characteristics. Additionally, cultural context and parental monitoring may moderate the relationship between media use and bullying behaviors. Although previous studies have reported associations between excessive media use and bullying perpetration, the present findings indicate that such relationships may not be universal and may vary across samples. Therefore, these results highlight the importance of considering contextual and individual factors when interpreting the role of digital media in bullying behaviors (Çevik

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et al., 2021). Exposure to violent digital games is associated with increased aggression and bullying behaviors and with decreased empathy (Dursun & Çapan, 2018; Kılıç, 2019). Preschool-aged children may exhibit problematic technology use patterns. It is noted that problematic media use emerging in this early period can lay the groundwork for addictive technology use in later stages of life (Domoff et al., 2020). In the study conducted by Ahmad et al. (2025), it was reported that insufficient parental guidance makes preschool children more vulnerable to inappropriate online content and cyberbullying. Exposure to violent digital games is associated with increased aggression and bullying behaviors and with decreased empathy (Dursun & Çapan, 2018; Kılıç, 2019). In the study conducted by İpek and Taştan (2025), it is stated that parents' primary concerns regarding online media use include cyberbullying, the risk of gaming addiction, and a decline in concentration levels. In a study by Çavuş et al. (2016), those who preferred action-adventure and violence-themed digital games exhibited higher tendencies toward digital game addiction than those who preferred educational games. Other studies note that children tend to imitate bullying characters in digital games, and these behaviors may elevate peer bullying (Öztürk & Traş, 2024). It is emphasized that children become isolated socially through digital games (Dursun & Çapan, 2018). Based on the findings, increasing digital game addiction among children can socially isolate them and adversely affect their social and emotional development. Research indicates that adult mediation enhances the effectiveness of preschool children's touchscreen-based learning experiences by fostering self-regulation and resilience skills, thereby contributing to the development of more adaptive behavioral patterns (Benedetto & Ingrassia, 2021; Taherian Kalati & Kim, 2022).

Another finding indicates a positive, significant relationship between the Passive-Bully Child score on the Bullying and Victimization Form and the Life Reflection subscale of the Digital Game Addiction Tendency Scale. In this context, passive-bully children may reflect the content of the digital games they are exposed to more in their lives than those in bully or victim roles. Aksel (2019) similarly notes that children exposed to violent digital games tend to exhibit aggression (Aksel, 2018). Research indicates a relationship between bullying behaviors and problematic gaming tendencies (Öztürk & Traş, 2024). Children with high digital game addiction tend to withdraw from social environments and prefer to live independently, whereas those with lower addiction require more autonomy (Dursun & Çapan, 2018). Studies suggest that as the time children spend on screens increases, exposure to violent content in digital games

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harms their social, emotional, and psychological development, increasing the risk of peer bullying.

Another finding shows a very strong positive relationship between PMUM and DPAT scores and the victims of bullying. It was found that 11% of the variance in Victim Child scores is explained by all scale scores. This finding can be explained by the fact that some variables, which do not appear significant in the correlation analysis, may show their specific contribution to the dependent variable in regression analysis when the effects of other variables are controlled, possibly due to a suppression effect (Tabachnick & Fidell, 2013). In this context, Demirel (2022) reported that students who used technological devices for five hours a day or more had higher levels of emotional sharing deficit, self-righteousness, harming others, and general bullying tendencies compared with students who used these devices less than one hour or between one and two hours daily. Similarly, Butasım (2024) stated that emotionally and socially unsupported children have a higher likelihood of bullying. Korkut and Özyürek (2023) found that children who bully often exhibit deficiencies in social skills. Conversely, victims of bullying may develop an addiction to excessive media use (Moral-García et al., 2025). Studies show that bullied children tend to be quieter, have lower self-confidence, weaker leadership traits, be withdrawn, isolated, less cooperative, and often have few playmates (Çevik et al., 2021; Korkut & Özyürek, 2023).

When examining the results, it is notable that problematic media use and digital game addiction were significantly associated with victimization, whereas no significant relationship was found for bullied children in the present sample. This finding suggests that digital media-related behaviors may be more strongly linked to experiences of being bullied rather than to bullying perpetration.

One possible explanation is that bullying behaviors among preschool children may be influenced more by environmental, familial, and interpersonal factors than by digital media use alone. In contrast, victim children may be more likely to turn to digital games and media as a coping mechanism, which may increase their risk of problematic use and social Dissociation from Life.

Therefore, the present study highlights the importance of addressing problematic media use and digital game addiction, particularly among victimized children, while also considering broader contextual factors in understanding bullying behaviors. These findings emphasize the

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need for early preventive interventions that focus on both digital media literacy and psychosocial support in early childhood.

This study has several limitations that should be acknowledged. First, the cross-sectional and correlational design does not allow for causal inferences regarding the relationships among digital game addiction, problematic media use, and bullying behaviors. Therefore, future longitudinal and experimental studies are recommended to examine the temporal direction and causal mechanisms underlying these associations. Second, the data were collected through parent- and teacher-reported self-report instruments, which may be subject to social desirability bias and perceptual inaccuracies. Future research may benefit from incorporating multiple data sources, direct observations, and qualitative methods to enhance the validity of the findings. In addition, the sample was limited to a specific district, which restricts the generalizability of the results. Studies conducted with larger and more diverse samples across different socio-cultural contexts would strengthen the external validity of the findings. Finally, individual, familial, and environmental factors were examined in a limited scope in the present study. Future research should consider including variables such as parental attitudes, digital parenting practices, school climate, and children's emotional and behavioral characteristics to provide a more comprehensive understanding of bullying behaviors and digital media use.

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Conflict of Interest

There is no conflict of interest between any institution, organization, or researcher within the scope of this study.

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