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# Analysis of the relationship between screen exposure and aggressive behaviors ın 3-6-year-old children

## 3-6 Yaş Arası Çocuklarda Ekran Maruziyeti ile Agresif Davranışlar Arasındaki İlişkinin Analizi

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**ABSTRACT**

**Aim:** This research aimed to examine the relationship between daily screen time, device type and media content with aggressive behaviors among preschool children aged 3-6 years in Türkiye. As children's exposure to digital media continues to increase, understanding its behavioral implications has become crucial. However, limited research in Türkiye has specifically addressed the link between screen use and aggression during early childhood.
**Methods:** The research employed a quantitative, parent-report design. Data were collected on children's daily screen time, device types used, and types of media content consumed. Aggressive behaviors were assessed using standardized behavioral scales. Correlation and variance analyses (ANOVA) were conducted to examine the relationships among these variables.
**Results:** The analyses revealed a statistically significant but weak positive correlation between screen time and aggression ($r = .19$, $p < .001$), suggesting that screen exposure may act as a contributing factor rather than a primary determinant of aggressive behavior. No significant differences in aggression levels were found based on device type ($F(2,460) = .569$, $p > .05$). However, content type emerged as a key variable: children regularly exposed to entertainment-oriented content exhibit higher aggression scores compared to those who watched educational programs for similar durations.
**Conclusion:** This study adds empirical evidence to the limited literature In Türkiye concerning early childhood media exposure and aggressive behavior. The findings emphasize the importance of a dual focus on both screen duration and content quality. Interventions should not only aim to regulate children's screen time but also support parent and caregivers in guiding children towards age-appropriate and educational media content. Given that the findings are based on parental reported, they should be interpreted with caution.

**Keywords*:*** aggressive behaviors, digital media use, early childhood, media content, preschool children.

**OZ**

**Amaç:** Bu araştırmanın amacı, Türkiye'de okul öncesi dönemdeki (3-6 yaş) çocukların günlük ekran süresi, kullandıkları cihaz türü ve maruz kaldıkları medya içeriği ile saldırgan davranış düzeyleri arasındaki ilişkiyi incelemektir. Günümüzde çocukların ekran maruziyetinin artması, davranışsal gelişimleri üzerindeki olası etkiler konusunda endişelere yol açmaktadır. Ancak, Türkiye'deki erken çocukluk döneminde ekran süresi ile saldırganlık arasındaki ilişkiyi ele alan çalışmaların azlığı, bu araştırmayı alanyazında önemli kılmaktadır.
**Yöntem:** Araştırma, ebeveyn raporlarına dayalı nicel bir çalışma olarak yürütülmüştür. 3-6 yaş aralığındaki çocukların günlük ekran süresi, kullandıkları cihaz türü ve izledikleri medya içeriğine ilişkin veriler toplanmıştır. Çocukların saldırgan davranış düzeyleri uygun ölçeklerle değerlendirilmiş, değişkenler arasındaki ilişkiler korelasyon ve varyans analizi (ANOVA) ile incelenmiştir.
**Bulgular:** Analiz sonuçları, ekran süresi ile saldırgan davranış arasında istatistiksel olarak anlamlı fakat zayıf bir pozitif korelasyon bulunduğunu göstermiştir ($r = .19$, $p < .001$). Bu bulgu, ekran süresinin saldırganlığın tek başına belirleyicisi olmaktan ziyade, katkıda bulunan bir faktör olabileceğini göstermektedir. Kullanılan cihaz türüne göre saldırganlık düzeylerinde anlamlı fark saptanmamıştır ($F(2,460) = .569$, $p > .05$). Ancak, izlenen içerik türü saldırganlık düzeylerini anlamlı biçimde etkilemiştir. Eğlence odaklı içeriklere düzenli olarak maruz kalan çocukların saldırganlık puanları, benzer sürelerde eğitici içerik izleyen çocuklara göre daha yüksek bulunmuştur.
**Sonuçlar:** Bu çalışma, Türkiye'deki erken çocukluk döneminde medya kullanımı ve saldırgan davranışlar arasındaki ilişkiyi inceleyen sınırlı literatüre katkı sağlamaktadır. Bulgular, ekran süresiyle birlikte içerik kalitesinin de çocuk davranışları üzerinde önemli bir rol oynadığını ortaya koymaktadır. BU nedenle, erken müdahalenin yalnızca erkan süresini kısıtlamaya değil, aynı zamanda ebeveynlerin çocukları yaşa uygun içeriklere yönlendirmelerine destek olmaya odaklanması önerilmektedir. Elde edilen veriler ebeveyn raporlarına dayandığından, sonuçların dikkatli biçimde yorumlanması gerekmektedir.

**Anahtar kelimeler*:*** dijital medya kullanımı, erken çocukluk, medya içeriği, okul öncesi çocuklar, saldırgan davranışlar

## Intoduction

Technological developments have created space for individuals to meet their various needs with tools such as smartphones, tablets, and computers. The fact that many needs can be met through screens without changing the location and limited physical activity encourages individuals of all ages to use screen-based technological tools (Gökçen, 2023). Children mostly use the screen with tools such as smartphones, tablets and computers, which are typically provided by their parents and that families often use mobile devices to regulate children's emotions (Çelik et al., 2021; Domoff et al., 2019; Yıldız et al., 2022). These findings show that early screen habits are not shaped only by its duration but also by parents' motivations for use. The American Academy of Pediatrics stresses that children between two and five years old should be limited to a maximum of one hour of screen engagement per day, emphasizing on the importance of choosing high-quality content (Hill et al., 2016). However, current studies indicate that children in this age range are subjected to longer periods of screen exposure than recommended; for instance, McArthur et al.

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(2022) found that only 35.6% of children follow the guideline, and similar patterns have also been reported in Türkiye (Koyuncuoğlu & Akaroğlu, 2023; Yalçın et al., 2021).

Studies consistently show that increased daily screen time is linked to higher risks of both internalizing problems (e.g., sadness, anxiety) and externalizing problems (e.g., aggression, behavioral disorders) among young children (Bozkuş, 2021; Eirich et al., 2022; Zink & Belcher, 2020) Likewise, Hasan and Sahib (2025) found that excessive use of smartphones led to various psychosocial consequences in a study conducted with more than 120 children aged 3-6. In their study, they noted that behavioral problems including manifestations like aggressive forms of speech and tendencies toward social withdrawal were linked with screen exposure. In line with these findings, Öztürk and Yılmaz (2023) found a significant positive linkage between preschool children's duration of time devoted to playing video games and the levels of their aggression scores. Their results demonstrated that higher engagement with video games was positively correlated with heightened aggressive behaviors. Additionally, their study noted a possible inverse relationship between children's screen usage time and prosocial behaviors. Furthermore, Tezol et al. (2022) argued that children engaging in more than four hours of daily screen exposure were significantly more prone to exhibit problems and peer relationship issues. Given the increasing length of children's everyday utilization of digital devices, it is possible that these negative effects could become more evident over time.

Besides extended screen time, an important factor in research discussions is the type of media material that young children are regularly exposed to, which plays a crucial role in shaping various behavioral outcomes (Gökçe et al., 2021). Algorithm-based content distribution systems (such as YouTube Kids and TikTok) can unintentionally increase the rate of exposure to themes such as aggression, competition, or conflict, may expose children to increasingly intense age-inappropriate content, even if the initial viewing experience begins with well-intentioned content (Barker & Petley, 2020). Within this context, Bandura et al. (1961) believed that individuals can learn many social behaviors through observation and imitation. His "Bobo Doll" experiment demonstrated that children tend to imitate aggressive models to which they are exposed to. Complementing this perspective, General Aggression Model (GAM), originally developed by Anderson & Bushman (2002), posits that individuals' behavioral tendencies, emotional responses, and cognitive scenarios can be shaped by repeated exposure to violent stimuli. Similarly, the desensitization hypothesis – one of the foundational frameworks explaining media-related aggressions – repeated exposure to violent images may decrease children's emotional responsiveness to real-life aggression, increasing the likelihood of aggressive reactions (Carnagey, Anderson, & Bushman, 2007). Further evidence indicates that, studies (Anderson & Bushman, 2018; Gentile, Coyne, & Walsh, 2010) have shown that violent media content can increase aggression and hostility. Another study showed an association connecting the playing of violent video games with children's aggressive or hostile behavior (Bozkuş, 2021). Within this context, alongside the duration of use of digital technologies and media tools, the effect of violent behavior patterns that children are exposed to through these tools on children's behavior can also be taken into consideration.

However, not all studies have supported this association. For example, Przybylski and Weinstein (2019) carried out a preregistered large-scale study found no significant association between adolescents' engagement with violent games and their aggressive behavior.

In this context, the subject of this study is the relationship between the amount of time children dedicate to being in front of the screens together with the type. The current study explores how both the duration of screen exposure and the type of media content consumed relate to aggressive behaviors among preschool children within the 3–6-year age group. Specifically, the study aims to determine whether screen duration and media content type influence aggression levels. Thus, the guiding research questions can be stated as follows:

1) Is there evidence of a statistically meaningful association between the average daily screen exposure of children within the 3–6-year age group and their levels of aggressive behavior?
2) Do aggression levels among children aged 3 to 6 vary based on the categories of media content to which they are exposed to?
3) Do aggression levels among children aged 3 to 6 differ depending on the type of digital device or media platform they use?

## Method

### Research Design

This study uses a quantitative survey design to examine how screen exposure relates to aggressive behavior in children aged 3 to 6. Rather than relying on interpretations or subjective opinions, this method involves collecting measurable data and analyzing it in a structured way. The aim is to uncover patterns that reflect the current situation and produce findings that can be tested and confirmed in other groups, making the results more dependable and meaningful (Burns&Grove,1993). In this context, the research process was carried out in a planned manner to enhance the trustworthiness and accuracy of the collected data, and scientific methods were systematically applied during the stages of gathering data, processing, and conducting analysis. Within the scope of this research, the relationship between the aggression levels of children aged 3-6 and various variables was examined. The study also evaluated how the duration of time children spent engaging with screens as well as the different categories of content they watched (educational programs, cartoons, etc.) affected their tendency towards aggressive behavior. In the line with this design, the survey method was used to investigate if a statistically meaningful association existed among two or more variables. For this purpose, the survey form prepared for the children's parents included questions about the children's daily screen usage times, screen type, and the type of content they watched. Correlation analyses were conducted on the dataset utilized within the research to identify and clarify the association among the variables. Variables such as demographic characteristics were also taken into account in the interpretation of the findings. In this way, the objective was to uncover the connection between the screen exposure of children and their levels of aggressive behavior in a more accurate and objective manner. The variables are discussed in detail in

the following sections, and the methodological design, the instruments of data gathering, and analytical stages are explained in a comprehensive manner.

**Participants**

Since young children are not developmentally able to self-report reliably, the data were collected indirectly through parent-reported measures. Parents (mothers and fathers) who had at least one child in the specified age range were invited to participate by completing an online questionnaire on behalf of their child. Using a convenience sampling strategy, an online survey was distributed via digital platforms to reach a broad audience. A total of 679 responses were received, of which 463 satisfied the predefined eligibility requirements and were subsequently incorporated into the final analysis. The qualified respondent consisted of parents of children within the target age range who regularly used screen-based devices and whose survey responses were complete and consistent. Thus, the final sample were 463 children aged 3 to 6 years. The participant group consisted of both girls and boys, with 40.6% identified as girls and 59.4% as boys, reflecting a demographically diverse sample. Among the participants, a considerable majority identified themselves as the mother of the child (n = 449, 97%), while only a small proportion reported being the father (n = 14, 3%). This shows that the study sample primarily consisted of mothers. The educational levels of participating parents varied. A small proportion had only completed elementary school (n = 3, .6%) or middle school (n = 5, 1.1%). A larger group had a high school diploma (n = 71, 15.3%) or had graduated from a vocational school (n = 45, 9.7%). The majority of participants held an undergraduate degree at the bachelor's level (n = 263, 56.8%), while a subsequent portion possessed a master's qualification (n = 58, 12.5%) and a smaller group with a doctoral degree (n = 18, 3.9%). This distribution indicates that most parents in the sample had a high level of education, particularly at least a bachelor's qualification or above. Participants were almost equally divided in terms of employment status. Approximately half of the parents reported that they were currently employed (n = 229, 49.5%), while the other half stated that they were not working at the time of the study (n = 243, 50.5%). The demographic characteristics of the participants are presented in Table 1.

**Table 1.** Demographic of participants

| Demographic Variable | Categories | n | % |
|---|---|---|---|
| **Child's Gender** | Girls | 188 | 40.6 |
| | Boy | 275 | 59.4 |
| **Parent** | Mother | 449 | 97 |
| | Father | 14 | 3 |
| **Parent's Education Level** | Elementary school | 3 | .6 |
| | Middle School | 5 | 1.1 |
| | High school | 71 | 15.3 |
| | Vocational school | 45 | 9.7 |
| | Bachelor's degree | 263 | 56.8 |
| | Master's degree | 58 | 12.5 |
| | Doctoral degree | 18 | 3.9 |
| **Parent's Employment Status** | Employed | 229 | 49.5 |
| | Unemployed | 234 | 50.5 |
| **Total** | | **463** | **100** |

**Data collection tools**

**Demographic Information Form:** Demographic Information Form was prepared by the researchers to obtain personal details concerning the participating parents as well as their children. Within the survey form, participating parents were requested to supply personal information about their respective relation to their children (mother or father), their age, educational status, employment status, and information about the age and gender of their children.

**Screen Time Information Form:** Screen Time Information Form was designed by the researchers to gather detailed information about children's screen use habits. The form included questions about the average daily screen time, the types of screen-based devices used (e.g., television, tablet, smartphone, computer, game console), and the nature of the content consumed. Content categories were classified as educational (e.g., learning apps, instructional videos), entertainment (e.g., games, cartoons, general videos), social media, and video calls. Additionally, the screen types were asked to indicate which type of screen children used most frequently, choosing among television, smartphone or computer. Participants were allowed to select multiple options where applicable, ensuring flexibility in reporting and capturing diverse usage patterns.

**Social Competence and Behavior Evaluation-30 Scale (SCBE-30)-Anger Aggression Subscale:** The Social Competence and Behavior Evaluation Scale – Short Form (SCBE-30) was originally created by LaFreniere and Dumas (1996) and later adapted into Turkish by Çorapçı, Aksan, Arslan-Yalçın, and Yağmurlu (2010). This instrument is designed to assess the emotional as well as the behavioral characteristics of preschool children aged 3 to 6 and consists of 30 items rated on a 6-point Likert scale. It includes three main subscales: Social Competence, Anger-Aggression, and Anxiety-Withdrawal. The Social Competence subscale evaluates positive interpersonal skills such as cooperation and constructive conflict resolution. The Anger-Aggression subscale measures externalizing behaviors including defiance, impulsivity, and aggression toward peers or adults. The Anxiety-Withdrawal subscale captures internalizing symptoms including indicators such as sadness, shyness, as well as emotional withdrawal. The scale can be

completed by either teachers or parents who are familiar with the child's behavior. In the current research, only the specific Anger-Aggression subscale was utilized to assess levels of aggressive behavior. In the Turkish adaptation of the SCBE-30, the internal consistency of the Anger-Aggression subscale was high (Cronbach's α = .87). For the aim of this research, the internal consistency coefficient was computed to be α = .83, signifying a substantial level of reliability. Higher scores on the Anger-Aggression subscale indicate more frequent and intense aggressive behaviors, whereas lower scores reflect fewer externalizing behavior problems.

**Data collection**

Data were collected online using a structured digital questionnaire completed by volunteer parents of children aged 3 to 6. To ensure broad reach and maximize participant diversity, the survey link was distributed, via several channels, among social media platforms (e.g., WhatsApp, Instagram, Facebook Groups), as well as in collaboration with early childhood institutions such as nurseries, preschools and kindergartens. This approach aimed to include families from varied socio-economic and demographic backgrounds and contributed to a heterogeneous and more representative sample of the target population. On the first page of the questionnaire, the objective of the study, the scope of use of the information to be collected, the principles of confidentiality and voluntariness were clearly stated, and a detailed informed consent form was provided. Participants read the explanations in this form, ticked the box indicating their consent to participate in the research, and were then directed to the survey questions. This process demonstrates that the research was conducted transparently in accordance with ethical principles and that participants' rights were protected. All responses to the survey were anonymized using a numerical coding method, and at no stage were participants' names, addresses, telephone numbers or similar personal identification information collected. This practice guarantees that the information shared is processed with absolute confidentiality and is applied as a fundamental ethical obligation to protect the privacy of participants. Participation in the study is completely on a voluntary basis. Participants have the option to discontinue the survey or terminate their participation at any stage of the data collection process without giving a reason and without encountering any negative consequences. Due to the scope and method of the study, no physical or psychological risks are anticipated for participants, and potential negative consequences have been minimized through prior assessment. To obtain enough responses and to allow participants to complete the survey at a time that was that was most suitable for their schedule, the data collection process continued for a total period of one month. During this period, reminders were sent when necessary, and additional information was provided to facilitate parents' responses.

**Data Analysis**

IBM SPSS Statistics 25.0 software was used in the analysis of the data. Before performing the core statistical analyses, the dataset was scanned for potential data entry errors, outliers, and missing values to ensure the integrity and accuracy of the findings. Kurtosis and skewness values for the aggression varied between -1 and +1 for all variables. This implies a normal distribution for the variable. A Pearson correlation analysis was performed to investigate the relationship between children's average daily screen time and their levels of aggressive behavior. Additionally, a one-way analysis of variance (ANOVA) was performed to identify whether aggression scores differed significantly based on the type of screen content children were most frequently exposed to. This allowed for comparisons among groups categorized by content type, including educational, entertainment, and video chat media. A one-way analysis of variance (ANOVA) was performed to assess if the levels of aggression scores differ based on the type of device that the children use.

**Findings**

**Relationship Between Daily Screen Time and Aggressive Behavior**

In the direction with the primary objective of the research, the relationship between children's daily screen time and their scores on the anger-aggression scale was examined using Pearson correlation analysis.

Table 2. Screen Time Correlational Analysis

| n=463 | Daily Screen Time (in minutes) |
|---|---|
| Aggression | 0.194* |

*p < .001

The analyses revealed a significant and positive association linking screen time with aggression levels (r=.19). This result indicates that as children devote increased amounts of time in front of digital screens, their levels of anger and aggression increase.

**Aggression levels and the Type of Media Content**

To evaluate the effect of screen content types on aggression levels, One-Way ANOVA was conducted. Table 3 shows the results of the analysis.

Table 3. One-Way ANOVA Results for Aggression by Most Frequently Used Content Type

| Measure | Entertainment (n=420) | | Educational (n=28) | | Video chats (n=15) | | F (460) |
|---|---|---|---|---|---|---|---|
| Aggression | M | SD | M | SD | M | SD | |
| | 22.71 | 5.32 | 17.79 | 4.82 | 20.73 | 5.65 | 12.07* |

*p < .001

*Note.* M = Mean; SD = Standard Deviation.

The analysis showed that the media content that children consume most often has a statistically significant impact on their aggression scores, F(2, 460) = 12.073, p < .001. To further identify specific group differences following the one-way ANOVA, post

hoc comparisons were conducted using the LSD. The results showed that young children with greater exposure to entertainment contents exhibited markedly higher aggression scores (M = 22.71, SD = 5.31, n = 420) than children who watched educational content (M = 17.78, SD = 4.81, n = 28). Children who most frequently engaged in video chats had a mean aggression score of 20.73 (SD = 5.65, n = 15), which is falling between the other two groups. The findings reveal that it is not merely the duration of children's engagement with screens, but equally the nature of the content they consume, is significantly contributing to aggressive behavior.

**Aggression Levels and the Type of Digital Device or Media Platform**

To evaluate whether the type of digital device children most frequently use is associated with their aggression levels, a One-Way ANOVA was conducted. Table 4 shows the results of this analysis.

**Table 4**. One-Way ANOVA Results for Aggression by Most Frequently Used Digital Device

| Measure | Television (n=287) | | Smartphones (n=166) | | Computer (n=10) | | F (460) |
|---|---|---|---|---|---|---|---|
| Aggression | M | SD | M | SD | M | SD | |
| | 22.15 | 5.35 | 22.71 | 5.67 | 22 | 2.44 | 0.569 |

*Note.* M = Mean; SD = Standard Deviation.

The aggression scores were compared across three groups based on device type: television (n=287), smartphones (n=166), and computers (n=10). The result showed that no statistically significant variations were observed among the different device groups.

Despite the non-significant result, the mean aggression score (M=22.71, SD=5.57) was the highest for children who used primarily smartphones. This was followed by television users (M=22.15, SD=5.35), and computer users (M=22.00, SD=2.44). These differences, however, did not reach statistically significant, indicating that the type of digital device alone may not be a meaningful factor affecting children's aggressive behaviors.

**Discussions**

The findings of the present study show that increased daily screen engagement among young children (aged 3–6) is linked to and correlated with increased levels of anger and aggressive behavior. The findings support the potential link between screen time and aggression and are consistent with previous research on this topic. Consistency is observed with the results obtained from the study by Tamana et al. (2019), which analyzed data from the Canadian Child cohort. Tamana et al. (2019) found that preschoolers engaging with screens for periods exceeding two hours daily were observed to be at an increased likelihood to exhibit externalizing behaviors and attention problems. Although the study did not establish a direct connection observed between the duration of screen exposure and aggression, it clearly highlighted the detrimental consequences associated with digital screen exposure upon behavioral growth and maturation during an early childhood period of development. These findings confirm broader concerns about the effects of screen time on child development. Consistent with these findings, Bozkuş's (2021) review of previous research suggests that violent video games can intensify aggressive thoughts, feelings, and behaviors, and that this effect can strengthen aggressive tendencies over time. Bozkuş's findings suggest that the nature of media content can be a decisive factor in children's behavioral development. In this context, it is understood that not only the duration of children's engagement with digital screens, as well as the specific nature of the content exposed to plays an important role in aggression levels. A more recent study supporting these findings was conducted by Vasconcellos et al. (2025). This extensive meta-analytic review, which included a total of 117 long term investigations covering approximately 292,000 participants in childhood, revealed a two-way association linking the utilization of digital screens alongside psychosocial problems, including aggression. The study emphasizes that screen exposure not only predicts behavioral difficulties but is also influenced by them. This suggests that screen use creates a multi-layered and reciprocal effect mechanism on children.

Another important finding of the research is that, beyond screen time, the type of media content consumed by children is a critical factor in determining their levels of aggression. It was found that children who watched more violent or entertainment-focused programs had significantly higher aggression scores than children who watched primarily educational programs. This finding also coincides with the General Aggression Model developed by Anderson and Bushman (2018). According to this model, a child's individual characteristics and environmental factors such as exposure to violent content interact to affect the child's internal state. This interaction facilitates the emergence of aggressive behaviors by strengthening the aggressive mindset over time, increasing emotional arousal and decreasing the level of empathy. Empirical data also support this interpretation. The study of Gentile et al. (2017) shows that children's repeated exposure to violent video games and television programs not only triggers immediate aggressive reactions, but also reinforces aggressive cognitive scenarios, leading to more automatic aggressive behaviors. This indicates that aggression tendencies may become internalized and become permanent over time. Similarly, a meta-analysis conducted by Bender et al. (2018) found that prolonged exposure to violent media reduces empathy and promotes emotional depersonalization. This explains an important psychosocial mechanism contributing to the normalization of aggression. Likewise, Thomas, Marykutty, and Vijayakumar (2025) suggest that media-induced stress may increase emotional arousal and trigger aggressive responses in children by affecting the neuroimmune system. Akhmedova (2025) found that digital stress associated with screen exposure contributes to social withdrawal, anger, and externalizing behavior patterns in children. In the Turkish context, Özyurt et al. (2018) found that preschool children who regularly watch violent television programs not only exhibit more aggression but also show an increase in impulsivity and a decrease in prosocial behaviors. This highlights the wide-ranging effects of violent content on children's emotional and social development.

Consistent with the findings of Zink and Belcher (2020), our results also suggest that screen use in preschool years may be linked to socio-emotional difficulties, including problems in emotional regulation and peer relationships. Supporting this relationship, Moreno et al. (2022) demonstrated that screen exposure reduces empathy and increases aggressive behavior in a cross-cultural sample. Furthermore, Zhao et al. (2023) emphasize that screen time can indirectly increase aggressive responses by disrupting sleep patterns. In a similar vein, Hasan and Sahib (2025) highlighted that among more than 120 young children who use smartphones excessively exhibit violent speech patterns and social withdrawal. Although our study focused specifically on aggression, these findings together indicate that screen exposure may contribute to a broader spectrum of psychosocial difficulties in early childhood. On the other side, there was no significant difference in aggression levels based on the most frequently used device type, such as television, smartphone, or computer. A possible explanation for this situation is that it is possible to access similar content from all devices today. Therefore, the quality and duration of the content consumed becomes a more determining factor than the device itself. This finding is in line with the results obtained by Vasconcellos et al. (2025), who reported that the link between screen time and socioemotional difficulties was independent of the device used. In line with this, Tamana et al. (2019) found that the duration and content of media exposure are more influential on the developmental outcomes of children than the type of technological platform.

When evaluating these results, the role of the parents should also be taken into consideration. Previous studies (e.g., Domoff et al., 2019) show that children's screen exposure is often shaped by parents' choices and strategies. For instance, using mobile devise to calm children or manage daily routines. In this regard, the negative outcomes associated with excessive or inappropriate screen use may not only stem from the quantity and type of content. But also, from how parents mediate and regulate their children's access.

**Limitations**

The present research outlines several limitations that ought to be considered while interpreting the results. First, the reliance on parental self-reporting introduces potential measurement concerns, as caregivers may inadvertently misremember usage patterns or provide responses socially desirable responses regarding their children's behaviors and screen time. Additionally, the demographic composition of participants also presents notable constraints on the study's broader applicability of the findings. The participants predominantly consisted of mothers with higher levels of education, which may limit the generalizability of the results across different family structures and socioeconomic backgrounds. This imbalance restricts our understanding of how media-behavior relationships might manifest among other family members. Second, the study's cross-sectional approach, while undeniably valuable for identifying correlational patterns and establishing initial associations between variables, inherently limits our capacity to cultivate a thorough and well-rounded comprehension of the complex, dynamic relationship linking screen exposure and behavioral development over time. Finally, the categorization of media content represents an additional limitation. Grouping all entertainment media together under a single category may overlook distinctions relevant for developmental outcomes, and the current approach does not differentiate between passive viewing and interactive engagement. These different modes of interaction could potential have varying effects on behavioral patterns, though more research would be needed to establish the nature of such differences. Moreover, the cultural specificity also raises important questions about cross-cultural validity, particularly given the substantial variation in media landscape, parenting practices, and cultural attitudes toward childhood behavior across different societies.

**Conclusion**

This study analyzed the association between daily use of screen, the type of device used, and media content with aggressive behavior among children within the 3–6-year age range. The findings indicate a statistically noteworthy but weak positive-oriented correlation connecting the duration of screen exposure and aggression levels. This indicates that although the association is relatively weak, a rise in screen use appears to be associated with higher levels of aggressive behavior. The study also revealed that the media content type children are exposed assumes a critical role in shaping children's behavior. Children who often watched entertainment-oriented content showed higher levels of aggression scores in contrast to peers who watched educational programs for a similar amount of time. This shows that both how much time children spend on screens and what they watch are important. Entertainment media, which often includes violence, competitive themes, physical or verbal conflict can increase aggressive behaviors, while educational content can support social, emotional, and cognitive development. The type of device children use does not appear to affect their aggressive behavior scores.

**Recommendations**

Drawing upon the results obtained in this research, it is advised that parents and caregivers adopt a dual approach by limiting the duration of children's engagement with screens and closely monitoring the nature of media content they consume. Instead of focusing only on reducing screen exposure, efforts should be directed toward encouraging age appropriate, educational, and prosocial content that supports children's emotional, cognitive and social development. To support this, parents and caregivers must practice conscious digital parenting. Rather than using screen as a passive form of entertainment, parents should enrich children's experience by co-viewing content, asking reflective questions during and after viewing, and discussing the messages being conveyed. Establishing screen-free routines, setting consistent time limits, and modelling balances screen use themselves are practical strategies that can significantly enhance children's relationship with the digital media. Educational institutions and healthcare professionals should also provide guidance and practical tools to help families manage screen use effectively. In this context, teachers should be systematically trained by schools to better grasp and evaluate the consequences of prolonged screen exposure together with unsuitable or non-age-inappropriate content on young leaners' social development. Professional development seminars or in-service training programs can provide teachers with up-to-date information and strategies to guide both their students and parents. In addition, schools can play an active role in raising parents' awareness by involving teachers in

communication efforts – such as organizing parent workshops, seminars or sharing curated educational content through letters or meetings. Teachers can also directly contribute by educating students about healthy screen habits in age-appropriate ways. For example, using classrooms discussions, stories, or visual tools to explain the difference between beneficial and harmful media can empower even young children to make mindful choices.

Finally, policymakers should consider creating guidelines and public awareness campaigns that emphasize the importance of content quality, not just screen time duration. These efforts should go beyond general recommendations and offer actionable strategies that can be implemented at local, regional, and national levels. For instance, public service campaigns through television, social media and schools could highlight why content quality matters, helping caregivers make better-informed decisions. Policymakers should also fund more research and pilot programs that evaluate the influence and consequences of different forms of digital media content upon the behavior and overall well-being of children. In disadvantaged communities, policies should aim to ensure equitable access to high-quality, non-violent educational content through public libraries, community centers, and subsidized digital platforms.

In light with these recommendations, future research should explore how various types of media content impact within the broader domains of child development, including aspects like emotional regulation as well as social skills, using long-term studies to better understand the lasting effects. Researchers should also pay closer attention to the qualitative aspects of children's media experiences, such as narrative style, character modelling, and behavioral patterns. Mixed-method approaches can offer a deeper understanding. These methodologies demonstrate a significant capability in capturing the nuanced dynamics of children's engagements with media, resulting in more sophisticated and contextually applicable insights regarding the ways in which digital media experiences shape developmental pathways.

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**Competing Interests**

The authors hereby state that they hold neither any competing financial or non-financial interests nor personal association that might in any way affect or bias the research presented within this manuscript.

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**Ethic Statement**

This research was carried out in complete accordance with the ethical guidelines outlined in the Helsinki Declaration. Every procedure that involved human participants received formal approval from the Bahçeşehir University Committee for Scientific Research and Publication Ethics (No: E-85646034-604.01-104414, Date: 30.04.2025)

**Informed Consent**

Formal informed consent was secured from each of the individual participants who took part in this research study. Participation was voluntary, and participants could withdraw at any time without any consequences.

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**Author Contributions**

F.N.K.: Concept, Design, Data Collection, Analysis and Interpretation, Literature Review, Writing, and Critical Review.
S.A.T.: Design, Data Collection, Analysis and Interpretation, Literature Review, Writing, and Critical Review.
S.N.K.: Design, Data Collection, Analysis and Interpretation, Literature Review, Writing, and Critical Review.
S.S.: Supervision, Guidance in Concept Development, Writing Assistance, and Manuscript Review.

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