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# Preschool children's media environments in Türkiye: a nationally representative study of screen exposure, parental mediation, and socioeconomic inequalities

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## Abstract

# Introduction:

Screen media use in early childhood is shaped not only by the amount of exposure but also by the quality and context of use. Using a nationally representative sample, this study examined screen exposure, parental mediation, co-use interactions, and instrumental use among preschool-aged children in Türkiye.

# Methods

Parents (N = 816) reported their children’s media use duration, frequencies of parent-assisted and solo use, quality of interaction during parent-assisted use, and instrumental screen use through in-person interviews.

# Results

Screen exposure was high relative to international recommendations, with over half of children using screens for at least 2 hours per day. Screen use was greater among children aged 2–5 years and those from lower educational backgrounds. While parent-assisted use was common, interactions during parent-assisted use were largely passive, and discussion of screen content was infrequent. Parental education emerged as a consistent correlate across multiple dimensions of children's media environments, with higher education linked to more parent-assisted use, less solo use, and more active engagement during parent-assisted use. Screens were also frequently integrated into everyday family routines and used as tools for behavioural management, particularly among parents of older children and those with lower educational attainment.

# Conclusions

As the first nationally representative study of preschool-aged children’s media environments in Türkiye, these findings suggest that paediatric guidance and public health interventions should address not only the reduction of screen exposure but also promotion of active parental mediation and equitable media environments during early childhood.

## What is Known

- Excessive screen use is common in early childhood, and parental mediation and family context influence children's media experiences and developmental outcomes.
- Most evidence on young children's screen use comes from Western, high-income countries, with limited population-based evidence from middle-income settings.

## What is New

- This study provides the first nationally representative assessment of preschool children's media environments in Türkiye, including screen exposure, co-use, solo use, interaction quality, and instrumental screen use.
- Parental education was associated with all major aspects of children's media environments, revealing socioeconomic inequalities that extend beyond screen time to parental mediation and engagement.

## Introduction

- The growth of mobile device access and ownership has yielded many opportunities and challenges for raising children [1, 2]. While recent developments in technology use may support learning and engagement of children to screen media, they also raise concerns regarding patterns of use, dependency, and potential developmental implications including difficulties in emotional, behavioral, cognitive and language development [3, 4]. These concerns are particularly important during early childhood, a period of rapid developmental change during which environmental influences, including digital media exposure, may have lasting consequences [5, 6].
  Importantly, emerging evidence suggests that developmental risks and benefits may depend not only on the amount of screen exposure, but also on the context in which screens are used, including whether use occurs with parental involvement, the quality of parent-child interactions during screen use, and the extent to which screens are integrated into everyday family routines [1, 2]. Consequently, understanding children's broader media environments has become an important priority for both developmental research and pediatric practice.

  Despite growing literature on children's screen media use, most evidence comes from Western, high-income countries [3, 5, 7, 8], limiting our understanding of children's digital experiences in middle-income contexts such as Türkiye, where cultural norms, caregiving practices, and socioeconomic conditions may differ substantially from those observed in Western contexts [9]. Moreover, existing studies have predominantly focused on screen time, with considerably less attention given to the quality and social context of children's media experiences, including co-use practices, parental mediation, and the use of screens as parenting tools. Nationally representative evidence on these dimensions remains particularly scarce.

  The ecological systems theory and family media ecology framework suggest that children's media experiences are likely to vary according to both developmental and family-level characteristics [10, 11]. Child age is particularly important given rapid changes in cognitive, social, and self-regulatory abilities during early childhood, reflected in screen use recommendations that distinguish between children under 2 years and those aged 2-5 years. Parental education is another key contextual

factor, influencing parenting practices, resources, and approaches to media regulation and mediation [12]. Examining these differences is important for identifying potential social inequalities in young children's digital experiences.

**Current study**

The overall aim of the current study was **to provide the first nationally representative assessment of preschool children's media environments in Türkiye** by examining **not only** screen media exposure, **but also** solo and parent-assisted screen use, the quality of parent-child interaction during shared screen use, and parental instrumental screen use **across key developmental and socioeconomic groups**. Specifically, we examined these dimensions according to child age (0 to <2 years vs. 2 to 5 years) and parental education levels. **By moving beyond measures of screen time alone, this study provides insight into the quality, context, and social patterning of young children's media experiences.**

# Methods

# Participants

Participants of this study were from a population representative survey in Türkiye (N = 816). Participants were recruited using a multistage random sampling strategy between January 24 and March 15, 2026.

The sampling framework was designed to achieve national representativeness across both urban and rural areas using the Nomenclature of Territorial Units for Statistics (NUTS) classification system. To enhance representativeness, three metropolitan cities that together constitute approximately 30% of the national population were selected as Self-Representing Units (SRUs). The remaining interviews were distributed across NUTS regions proportionate to population size. Additional stratification procedures were implemented in specific regions to ensure balanced representation. In-person interviews (mean duration = 51 minutes) were conducted within each selected neighbourhood or village. In total, 102 sampling units across 25 provinces were included in the study. All parents provided informed consent prior to participation and received a feedback form upon completion. No financial compensation was provided. Table 1 presents the characteristics of the sample.

Table 1
Characteristics of the sample

| **Parents** | **N (%)** |
|---|---|
| Mothers | 526 (64.5%) |
| Fathers | 290 (35.5%) |
| Residential area | |
| Urban | 675 (82.8%) |
| Suburban | 141 (17.2%) |
| Regions | |
| Marmara | 269 (33%) |
| Aegean | 104 (12.8%) |
| Mediterranean | 105 (12.8%) |
| Black Sea | 70 (8.6%) |
| Central Anatolia | 120 (14.7%) |
| Southeastern Anatolia | 91 (11.1%) |
| Eastern Anatolia | 57 (7%) |
| Child age | |
| <2years | 108 (13.2%) |
| 2–5 years | 708 (86.8%) |
| Marital status | |
| Married | 805 (98.7%) |
| Separated or divorced | 10 (1.3%) |
| Education level | |
| Low[a] | 221 (27.1%) |
| [a]Primary school and middle school | |
| [b]High school | |
| [c]Vocational school, university or higher | |

| Parents | N (%) |
|---|---|
| Secondary[b] | 510 (62.5%) |
| Higher[c] | 85 (10.4%) |
| Employment | |
| Employed | 424 (52.1%) |
| Unemployed | 390 (47.9%) |
| [a]Primary school and middle school | |
| [b]High school | |
| [c]Vocational school, university or higher | |

## Measures

**Screen use duration**. Parents reported their child's average daily screen use using the following response categories: no screen use, less than 30 minutes, 30–60 minutes, 2 hours, 3 hours, 4 hours, and more than 4 hours. For analysis, responses were recoded into five categories: no screen use, ≤ 1 hour per day, 2 hours per day, 3 hours per day, and > 3 hours per day.

**Parent-assisted screen use**. Parents reported the frequency of their child's screen co-use using the question: *"How frequently does the child engage in screen use together with a parent?"* Responses were recorded on a 5-point Likert scale ranging from never to very often.

In addition, parents reported on the quality of their interactions during screen use in response to the question: *"During screen use with parents, how often do the following interactions occur?"* Items included watching TV/videos/cartoons together, playing games together, watching educational videos, and talking about screen content. Responses were recorded on a 5-point Likert scale ranging from *never* to *very often*. These items were grouped into two: a) passive parent-assisted co-use (watching TV/videos/cartoons) and b) active/enriched parent-assisted co-use (playing games, watching educational videos, and discussing content).

**Solo screen use**. Parents reported the frequency of their child's solo screen use using the question: *"How frequently does the child engage in screen use alone?"* Responses were recorded on a 5-point Likert scale ranging from never to very often.

**Instrumental screen use.** Parents reported the frequency with which they allowed their child to use screens across eleven everyday contexts and parenting situations. Specifically, parents indicated how

often they permitted screen use while eating meals at home, during spare time, while the parent was busy with housework, during travel, in public spaces, in social settings, early in the morning, before bedtime, as a reward, to keep the child quiet, or to calm the child. Responses were recorded on a 5-point Likert scale ranging from never to always.

**Child age and parental educational level**. Parents reported on their children's dates of birth and their highest educational achievement which was grouped into three categories: low education (primary school and middle school), secondary education (high school) and higher education (vocational education, university and higher).

**Statistical analyses.** All analyses were conducted using IBM SPSS Statistics (Version 29). Descriptive statistics were first computed to characterise the sample and the main study variables. For screen use duration, group differences by child age and parental education levels were examined using chi-square tests. Differences by child age and parental education levels regarding continuous measures were examined using independent samples t-tests and one-way ANOVAs, respectively. When significant effects were observed, post hoc comparisons with appropriate corrections (e.g., Bonferroni) were conducted. A principal component exploratory factor analysis with oblique rotation (i.e., varimax) was used to verify whether the eleven examples of instrumental use of screen media represent different types. Statistical significance was set at $p < .05$.

## Results

# Screen media exposure: descriptives, and differences by child age and parental education level

The most common level of screen media use was 2 hours per day (30.4%, *N* = 242), followed by more than 3 hours (26.1%, *N* = 208), 3 hours (22.2%, *N* = 177), and 1 hour (18.7%, *N* = 149), while 2.6% (*N* = 21) of children did not use screens.

Screen use duration differed by age group ($\chi^2(4) = 60.41$, $p<.001$), with children aged 2–5 years more likely than those aged 0-<2 years to use screens for more than 3 hours per day (28.2% vs. 12.8%) and less likely to have never used screens (1.3% vs. 11.0%) or to use screens for no more than 1 hour per day (16.3% vs. 33.9%; Fig. 1). Screen time also differed by parental education ($\chi^2(8) = 44.96$, $p<.001$) with children of less educated parents more likely to have high screen exposure. For example, more than 3 hours of daily screen use was reported by 32.3% of children in the lowest education group compared with 20.7% in the highest education group (Fig. 2).

## Parent-assisted and solo use: descriptives, and differences by child age and parental education level

Parent-assisted screen use was common, with 56.5% of children often or always using screens with a parent or another adult, whereas 62.8% rarely or never used screens alone (Fig. 3). Parent-assisted and solo screen use did not differ by child age. However, parental education was associated with both forms of use. Higher parental education was associated with more frequent parent-assisted use and less frequent solo screen use, whereas children of parents with low educational attainment engaged in the highest levels of solo screen use (parent-assisted use: $F(2,811) = 11.20$, $p<.001$; solo use: $F(2,803) = 8.53$, $p<.001$).

**Quality of interaction during parent-assisted co-use: descriptives, and differences by child age and parental education level**

Discussion of screen content was the least frequent parent-assisted screen activity, with 26.0% of parents reporting never and 33.7% reporting rarely engaging in this behaviour (Fig. 4). In contrast, passive interaction was more common, with 39.6% reporting engaging sometimes and 35.1% often or very often.

There were differences by child age and parental educational level. Parents of children under 2 years reported significantly more frequent parent-assisted game playing ($M = 3.27$, $SD = 1.21$) than parents of children aged 2 to 5 years ($M = 2.82$, $SD=.99$), $t(790) = 4.06$, $p<.001$. In contrast, parents of children aged 2 to 5 years reported significantly more frequent discussion of screen content ($M = 2.34$, $SD = 1.01$) than parents of children under 2 years ($M = 1.85$, $SD=.97$), $t(773) =-4.52$, $p<.001$. No significant age-group differences were found for passive interaction or watching educational videos.

Differences were also observed by parental education level. One-way ANOVAs showed significant effects for watching educational videos, $F(2, 790) = 3.20$, $p=.041$, and discussing screen content, $F(2, 772) = 3.39$, $p=.034$. Bonferroni post hoc tests indicated that parents with secondary education reported more frequent watching of educational videos ($M = 2.77$, $SD = 0.95$) and discussion of screen content ($M = 2.34$, $SD = 1.00$) than parents with low education (educational videos: $M = 2.56$, $SD = 1.04$; discussion: $M = 2.13$, $SD = 1.06$; both $ps=.035$). No significant educational-level differences were observed for passive interaction or parent-assisted game playing.

**Screen use as a parenting tool: factor structure, descriptives, and differences by child age and parental education level**

Exploratory factor analysis supported a unidimensional structure, with all items loading strongly on a single factor (loadings>.58), which reflected parental instrumental screen use, defined as the use of screens as a general-purpose parenting tool to manage children's behaviour, daily routines, and situational demands. Based on this structure, a composite score was created by averaging all 11 items.

Parental use of screens was most evident during meals at home, with 29.7% of parents reporting use often and 6.7% very often. Screen use was also relatively common when parents were busy with housework (18.4% often, 8.5% very often) and during spare time (19.1% often, 6.9% very often). Around

one-fifth of parents reported using screens often or very often to calm the child (18.2% and 7.5%, respectively) or to keep the child quiet (16.7% and 7.2%, respectively) (Table 2).

Table 2
Prevalences of parental instrumental screen use

| While eating meals at home | Never | Rarely | Sometimes | Often | Very often |
|---|---|---|---|---|---|
| | **80 (9.9%)** | **186 (22.9%)** | **251 (30.9%)** | **244 (29.7%)** | **55 (6.7%)** |
| During spare time | 151 (18.5%) | 227 (27.9%) | 224 (27.5%) | 156 (19.1%) | 56 (6.95) |
| While the parent was busy with housework | 105 (12.9%) | 248 (30.5%) | 241 (29.7%) | 150 (18.4%) | 69 (8.5%) |
| During travel | 236 (28.9%) | 239 (29.3%) | 192 (23.5%) | 113 (13.9%) | 35 (4.3%) |
| In public spaces | 346 (42.5%) | 198 (24.3%) | 173 (21.2%) | 73 (8.9%) | 26 (3.2%) |
| In social settings | 258 (31.7%) | 253 (31.1%) | 174 (21.3%) | 99 (12.2%) | 30 (3.6%) |
| Early in the morning | 345 (42.3%) | 216 (26.4%) | 146 (17.9%) | 63 (7.7%) | 46 (5.6%) |
| Before bedtime | 307 (37.7%) | 250 (30.7%) | 179 (22%) | 56 (6.8%) | 23 (2.8%) |
| As a reward | 185 (22.7%) | 220 (27%) | 255 (31.3%) | 130 (15.9%) | 26 (3.1%) |
| To keep the child quiet | 178 (21.9%) | 194 (23.8%) | 247 (24%) | 136 (16.7%) | 59 (7.2%) |
| To calm the child | 171 (20.9%) | 188 (23.3%) | 240 (29.8%) | 147 (18.2%) | 60 (7.5%) |

Parental instrumental screen use differed across child age and parental education. Parents of children aged 2 to 5 years reported significantly more frequent instrumental use of screens ($M$ = 2.50, $SD$=.77) than parents of children under 2 years ($M$ = 2.11, $SD$=.88), $t(799)$=-4.81 $p$<.001. A one-way ANOVA showed a significant effect of parental education on instrumental use of screens, $F(2, 797)$ = 13.83, $p$<.001. Bonferroni post hoc tests indicated that parents with low educational attainment ($M$ = 2.68, $SD$=.79) reported significantly greater instrumental screen use than parents with secondary education ($M$ = 2.39, $SD$=.77, $p$<.001) and higher education ($M$ = 2.30, $SD$=.81, $p$<.001). Instrumental screen use did not differ significantly between parents with secondary and higher education.

# Discussion

This study provides the first population-based evidence on young children's media environments in Türkiye. Beyond documenting the prevalence of screen exposure, the findings highlight important differences in parental mediation, co-use practices, and instrumental screen use, all of which have been identified as potentially important influences on children's developmental experiences with media. From a paediatric perspective, these findings suggest that screen use should be considered not only as a behavioural exposure, but also as a family context that may shape opportunities for learning, interaction, and self-regulation during early childhood.

When compared with AAP and WHO guidelines, the findings indicate substantial departures from recommended screen use practices. Only 11.0% of children under two years had never used screens, while almost one-third used screens for two or more hours daily. Among children aged 2 to 5 years, only 16.3% met the recommendation of no more than one hour of daily screen use, whereas over 80% exceeded this limit and more than half used screens for three or more hours per day. Consistent with international evidence, adherence to screen time guidelines was low; however, rates in the present study were lower than those reported in a recent meta-analysis [13]. These findings suggest that existing recommendations may not adequately reach or support Turkish families in managing children's screen use.

The high proportion of children exceeding recommended screen time thresholds is of particular relevance to paediatric practice because early childhood represents a critical period for establishing health behaviours and family routines. The findings suggest that routine contacts between healthcare professionals and families may provide important opportunities to discuss media use before patterns become firmly established.

The frequency of parent-assisted and solo screen use did not differ by age, suggesting that screen use occurs largely within a family context throughout early childhood. However, the quality of shared screen experiences varied. Parents of younger children were more likely to play games with their child, whereas parents of older children were more likely to discuss screen content. This pattern likely reflects age-related changes in children's cognitive and language abilities, indicating that developmental differences lie more in how screens are used than whether they are used with parents [14].

Parental education emerged as a key determinant of children's media environments. Children of parents with lower educational attainment were more likely to experience higher screen exposure, more solo use, less parent-assisted use, and greater instrumental screen use. In contrast, higher parental education was associated with lower screen exposure and more active parental involvement. These findings suggest that socioeconomic differences extend beyond screen time to encompass broader patterns of parental mediation and engagement [10]. From a public health perspective, these findings indicate rat inequalities in children’s digital experiences may reflect broader social inequalities in child development and health. Notably, children from lower educational backgrounds may experience potential double disadvantage, characterised by both greeter screen exposure and fewer opportunities for enriching parent-child interactions around media [15, 16]. This pattern suggests a potential double disadvantage for children

from lower educational backgrounds, who experience both greater screen exposure and fewer opportunities for enriching parent-child interactions around media [17]. his pattern suggests that efforts to promote healthy media use should pay particular attention to socioeconomic disparities and support families who may face greater barriers to implementing recommended media practices.

Although parent-assisted co-use was common, shared screen experiences were often passive rather than actively engaging. Watching screens together was considerably more common than interactive activities such as discussing content, playing games, or viewing educational materials together. Discussion of screen content was the least frequently reported activity, despite being one of the most cognitively stimulating forms of parental mediation [18]. These findings suggest This distinction may be important for paediatric recommendations. Encouraging parents to be physically present during screen use may be insufficient if that presence does not involve discussion, scaffolding, or shared engagement with content. The findings therefore support growing calls for guidance that focuses on the quality of media engagement alongside the quantity of exposure [17, 19].

Screen use was closely embedded in daily family routines. Screens were most commonly used during meals, while parents completed household tasks, and to calm or occupy children. Around one-quarter of parents reported frequent use of screens for behavioural regulation, suggesting that screens often function as a practical parenting tool. These findings support a Family Media Ecology perspective [11], which views children's screen use as shaped by broader family routines, demands, and caregiving pressures rather than simply parental choice. While such practices may provide short-term support, frequent reliance on screens for regulation may have implications for children's emotional development and self-regulation. [20]. For paediatricians and other child health professionals, these findings suggest that discussions about screen use should be situated within broader conversations about family routines, caregiving demands, and strategies for supporting children's behaviour and emotional regulation. Screen use may often reflect parental workload and everyday family pressures.

# Practical Implications

These findings have important implications for paediatric practice, public health policy, and family support services. Given the high prevalence of screen exposure during the preschool years, healthcare professionals working with young children may be well placed to provide anticipatory guidance regarding healthy media habits during routine developmental and preventive care visits. Such guidance should extend beyond recommendations about screen time limits to include active parental mediation, co-viewing practices, and the promotion of developmentally appropriate media use. The strong and consistent associations with parental education further indicate that universal recommendations alone may be insufficient. Families with fewer educational resources may benefit from targeted and accessible support that acknowledges the practical challenges of managing children's media use within everyday family life.

# Strengths and Limitations

Strengths of the study include the use of a large population-based sample, providing the first nationally relevant estimates of early childhood screen use patterns in Türkiye. However, several limitations should be considered. The study also contributes evidence from an underrepresented middle-income context, helping to broaden a literature that has been dominated by findings from Western high-income countries. Screen use was reported by parents and may be subject to recall or social desirability bias. The absence of child sex data limits the ability to assess potential differences by child sex however differences by sex is not evident at this age and child sex is not a predictor of screen exposure under 5 years [21–23].

# Conclusions

In conclusion, screen media use among young children in Türkiye is widespread and frequently exceeds current recommendations. Parental education emerged as a key correlate of children's media environments, influencing screen exposure, co-use, solo use, and instrumental screen use. These findings suggest that paediatric guidance should move beyond screen time alone and address the quality of children's media experiences, patterns of parental mediation, and socioeconomic inequalities in media use.

# Abbreviations

AAP
the American Academy of Pediatrics
WHO
World Health Organization (WHO)

# Declarations

**Conflict of Interest Disclosures**: The authors have no conflicts of interest to disclose.

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**Abbreviations**: AAP: the American Academy of Pediatrics; WHO: World Health Organization (WHO)

**Author Contributions:** AB, GA and EEB designed the study. AB conducted data analysis and wrote the first draft of the manuscript. GA and EEB provided feedback and contributed to revising the remaining manuscript.

**Ethical approval:** Ethical approval for the study was obtained from the Ethics Committees of Essex University (Approval no: ETH2526-0049) and Ozyegin University (Approval no: 2025/16/01). The procedures used in this study adhere to the tenets of the Declaration of Helsinki**.**

**Data availability statement:** Data is available upon request from the first author.

**Artificial Intelligence Use:** ChatGPT and Grammarly was used to check grammar and English language errors in the text.

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# Figures

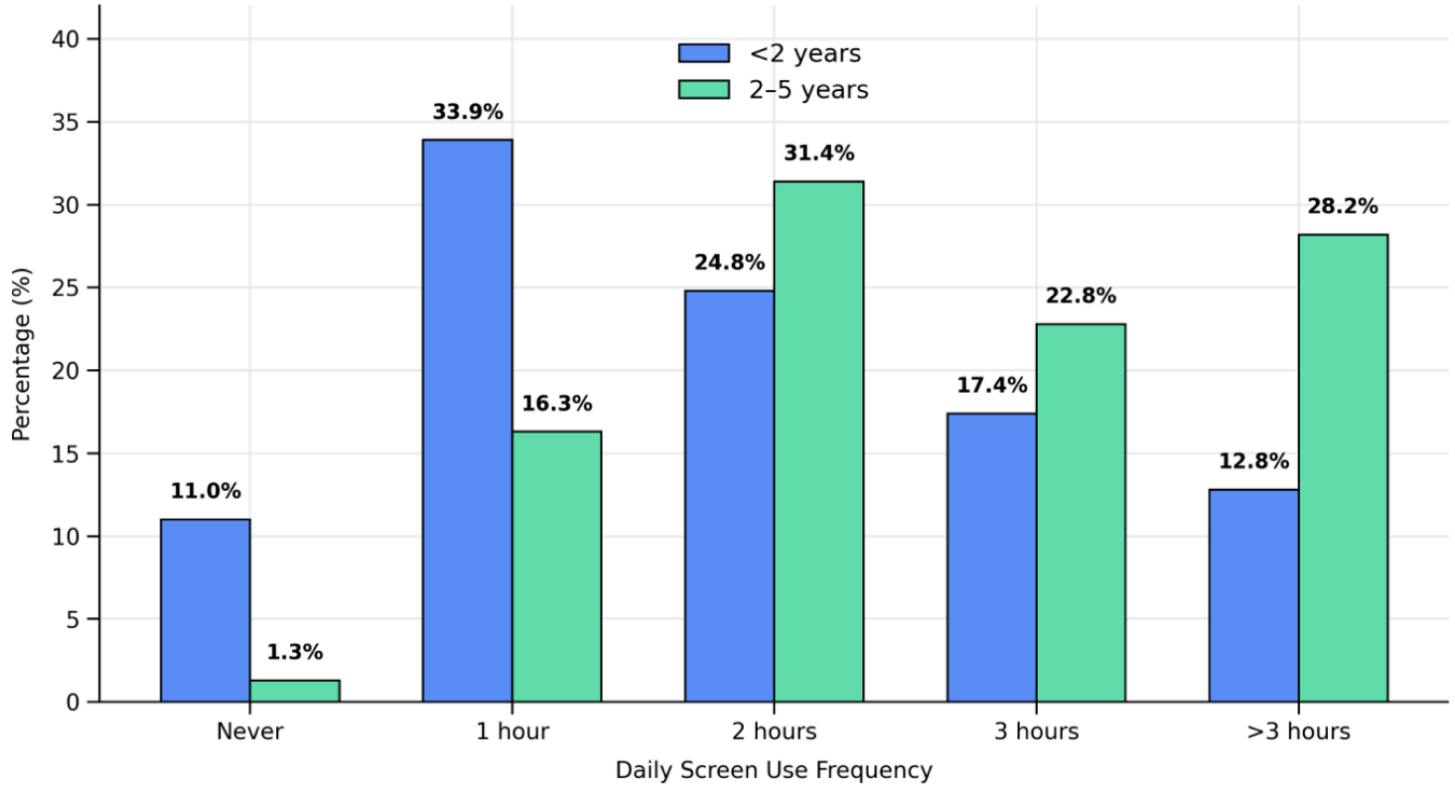



**Figure 1**

Prevalences of screen exposure duration by child age.

Groups with significant differences between them are shown by asterisks (*p<0.05).

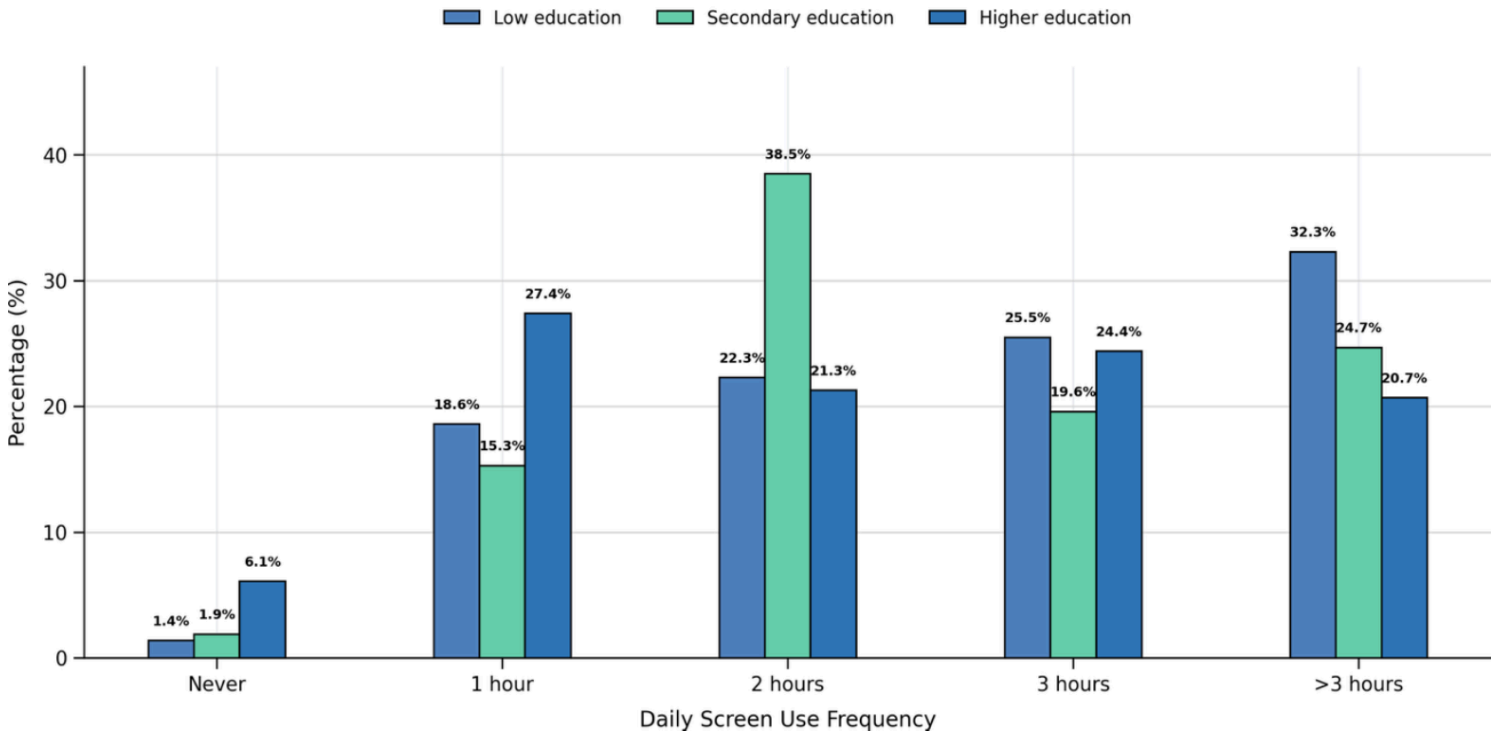



**Figure 2**

Prevalence of screen exposure duration by parental education level.

Groups with significant differences between them are shown by asterisks (*p<0.05).

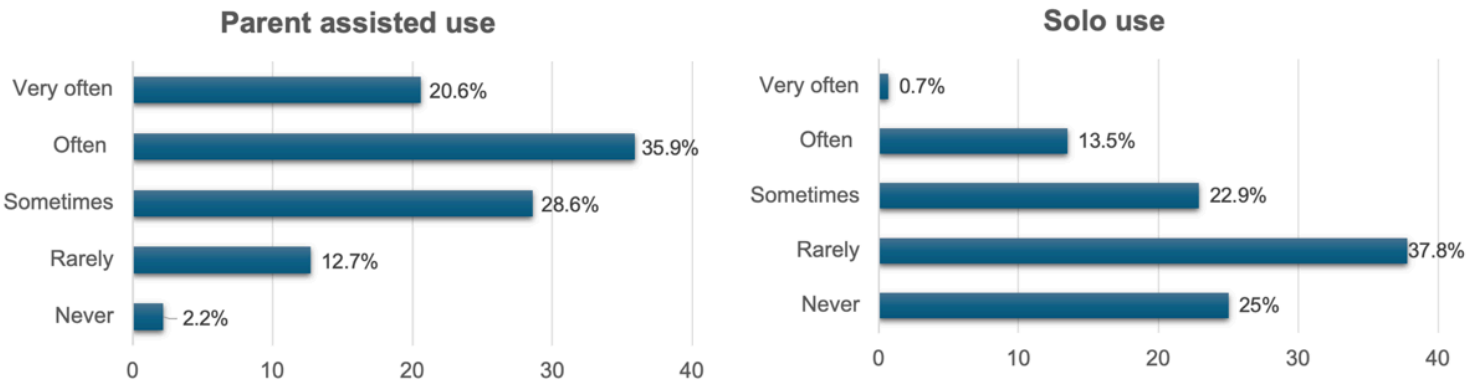



**Figure 3**

Frequencies of parent-assisted co-use and solo screen-use.

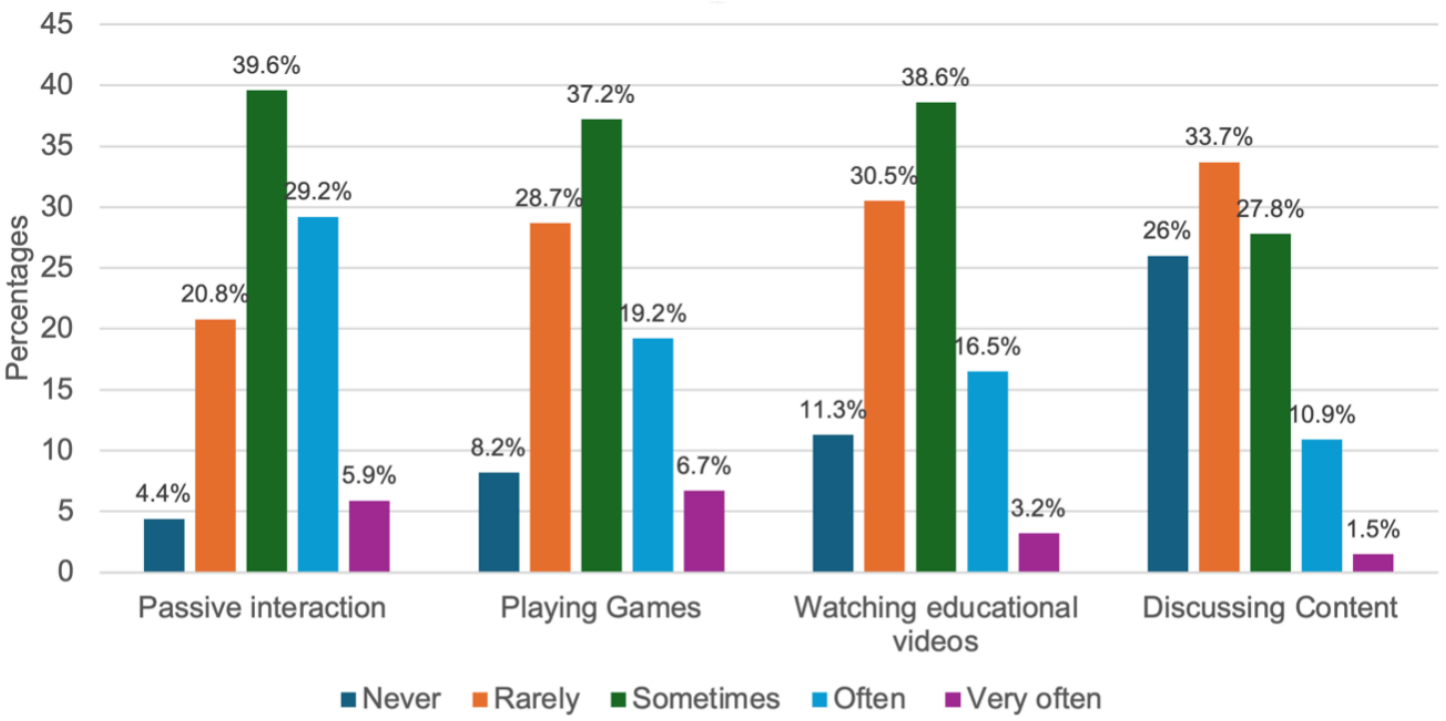



**Figure 4**

Prevalences of the of quality of interaction during parental co-use.