TIME SPENT ON SCREENS VERSUS OUTDOOR TIME: SPORTS AND ARTISTIC ACTIVITIES IN PRESCHOOLERS

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Abstract: *The research study focused on comparing the time preschool children spend on screens (TV, computer) versus time spent outdoors, while also exploring their involvement in sports and artistic activities from a gender perspective. A total of 130 parents of preschoolers participated by completing a questionnaire. Children spent the most time outdoors on weekends (M=4.92; SD=1.471) and weekdays (M=3.89; SD=1.295). Over half of the preschoolers (77 children, 59.23%) regularly participated in sports activities. The most popular sports were dance (11 children, 14.28%), swimming and football (10 children each, 12.98%), followed by gymnastics (7 children, 9.09%), basketball (6 children, 7.79%), handball (5 children, 6.49%), and hockey/skating (4 children, 5.18%). In terms of cultural-artistic activities, slightly fewer children participated (43.8%, 57 children) compared to those who did not (56.2%, 73 children). Among those involved, most (30 children, 52.63%) took painting or drawing classes. Other activities included learning musical instruments like piano, violin, or percussion, and ballet, each with 8 children (14.03%). The data revealed that boys were more inclined towards sports, while girls preferred artistic activities.*

Keywords: *preschoolers; sports activities; artistic activities.*

Introduction

Guidelines for movement in early years emphasize that meeting all three movement behavior recommendations (sleep, sedentary behavior, and physical activity) is important for the health and development of children (Christian et al., 2022). At their age, preschoolers are heavily dependent on adults for their physical activity behaviors (i.e., physical activity and sedentary behavior) (Eichinger, Schneider, De Bock, 2018). Public health organizations recommend that preschool-aged children accumulate at least 3 hours of physical activity daily (Vale et al., 2015). Despite this recommendation, children today spend an

unprecedented amount of time watching or interacting with screens (both television use and electronic media).

Background

As an integral part of children's lives in the digital era, screen media usage includes activities such as Internet browsing, computer use, mobile phone use, TV watching, and video games. These activities have become one of the most popular leisure activities for children and an increasingly used learning tool in schools (Bustamante, Fernández-Castilla, Alcaraz-Iborra, 2023). Research conducted in 2023 revealed that a large proportion of preschool children exceeded the maximum recommended screen time of ≤2 hours/day (61.7%; n = 262) (Walaa et al., 2023). Factors such as the child's age, mother's age, and the child's birth order among siblings were significantly associated with screen time duration (Walaa et al., 2023). Studies have concluded that preschoolers spend approximately the same amount of leisure time engaged in physical activities as in sedentary behaviors (Robatsch, Voitl, Diesner-Treiber, 2021). Other research indicates that preschoolers who spent more time on screens (both TV viewing and electronic media use) scored lower in language production, language comprehension, and parent-child closeness (Gath, McNeill, Gillon, 2023) and exhibited poorer psychosocial well-being (Zhao et al., 2018). Excessive screen time (TV, computer) is a major factor contributing to an increased risk of childhood obesity (He et al., 2005; Frank et al., 2018) and negatively impacts visual-motor integration and quality of life in preschool children (Mahmoud, Al-Tohamy, Abd-Elmonem, 2021).

Outdoor activities for preschoolers contribute to their development, quality of life, and health (Kolehmainen et al., 2023) as well as to positive emotional-social functioning (Abdessemed et al., 2021). Low levels of residential greenery and reduced time spent in parks have been associated with poorer general and mental health among 4-6-year-old children (Andrusaityte et al., 2020).

Research has identified key factors influencing children's outdoor experiences: paved surfaces, integration of natural elements, richness of space, playground facilities, resting facilities (Wang et al., 2024), trees, and shrubs in children's play landscapes (Boldemann et al., 2011), and walking/cycling/transport infrastructure (Merucci, Geneau, 2022; Lu et al., 2022).

Regarding outdoor activity, a study from 2019 noted that preschoolers engaged in more physical activity and less sedentary activity on weekdays compared to weekends (Nilsen et al., 2019). Research findings indicate a decrease in total physical activities related to sports

and an increase in screen time among preschoolers. The family environment and parental support are important for preschoolers' physical activity levels and screen time (Beck et al., 2023). In this context, increasing physical activity intensity and supporting participation in organized sports are viable targets for enhancing cognitive and psychosocial development in preschoolers (McNeill et al., 2018), improving cognitive performance (Zhang et al., 2020), reducing cardiovascular and metabolic disease risks, and alleviating symptoms of depression or anxiety.

Participation in children's sports is increasingly popular and widespread in Western culture. Children who engage in physical leisure activities (jogging, football, aerobics, gymnastics, team sports) exhibit fewer or significantly reduced dependencies compared to their peers who spend their leisure time without engaging in any physical exercise (Lupu et al., 2014) and demonstrate enhanced executive function performance. Family expenditures and time allocation are relatively high for sports activities such as running and winter sports, while lower for other sports like fitness, walking, or swimming (Thibaut, 2017). Results show a significant association between the intensity of effort in team sports and the frequency of physical activities per week. Children who participated in high-intensity team sports were 2.5 times more likely to be physically active (Kudlacek, 2021).

Artistic activities serve as a resource for overcoming negative emotions and preventing anxiety and depression (GómezRestrepo et al., 2022). Participation in such activities can help children acquire healthy coping skills, strengthen emotional regulation abilities, and reduce anger-related issues (Gürkan, Çimke, Gürkan, 2024). Playgrounds with sports activities attracted 53% more users during activity periods. This increase was observed only among boys (Bliekendaal, Nauta, 2024). Sports are among the top activities for boys and less preferred by girls, who actively engage in artistic activities (Žumárová, 2015).

Methodology

The objectives of the research were to: (1) analyze screen time (TV, computer) versus outdoor time (outdoor activities), and (2) analyze sports and artistic activities as leisure options for preschoolers, including a gender perspective.

The method used was a survey through a questionnaire. The research instrument was a questionnaire developed and validated for this research (Cronbach's Alpha value of .893, indicating high consistency). Data was collected from May to June 2024. Consent was obtained before applying the instrument, explaining the research

purpose, method, instrument, associated risks, and participant rights to the subjects. Participants were assured of data confidentiality. On average, completing the questionnaire took 15-20 minutes per participant. The questionnaire had four dimensions: information about the child's life, information about leisure opportunities, information about the child's leisure time, and identification data. Items included dual-choice, multiple-choice, or Likert scale questions. The participant group consisted of 130 subjects, parents of preschool children, mostly female (91.5% - 119 subjects), with a minority of males (8.5% - 11 subjects). The average age of the group was 35.87 years. Most subjects were aged 31-40 years (85 subjects - 65.4%), followed by 24 subjects (18.5%) aged 41-50 years, 20 subjects (15.4%) aged 21-30 years, and one subject (0.8%) over 50 years old. Most subjects were married (90.8% - 118 subjects), with a small percentage in cohabitation (6.9% - 9 subjects) and divorced (2.3% - 3 subjects). In terms of family income, most families (52 - 40%) earned over 8001 RON, while fewer families had incomes ranging from 4001-5000 RON (13.1%), 5001-6000 RON (12.3%), and 7001-8000 RON (12.3%). Families earning below 3000 RON accounted for 3.1%, with two subjects (1.5%) refusing to answer this item. Most parents (46.9% - 61 subjects) reported having one child, 42.3% (55 subjects) had two children, 9.2% (12 subjects) had three children, and only 1.5% (2 subjects) had more than three children. The children of the investigated parents were predominantly female (79 – 60.8%), with males accounting for 51 (39.2%). Most children (58.5% - 76 subjects) were the firstborn, followed by 36.2% (47 subjects) as second-born, 3.8% (5 subjects) as third-born, and only 1.5% (2 subjects) as fourth-born. For the majority of parents (78.5% - 102 subjects), children attended a full-day kindergarten program (8 hours), while the remaining children (21.5% - 28 subjects) attended a half-day program (4 hours).

Results

We begin with the first objective: analyzing time spent on screens (TV, computer) versus outdoor time (see Table 1). Given the children's age, it is noteworthy that parents spend the most time with their children in outdoor activities, both on weekends (M=4.92; SD=1.471) and on weekdays (M=3.89; SD=1.295) (Vale et al., 2015; Andrusaityte et al., 2020). It is encouraging that parents choose to spend time with preschoolers outdoors, engaging in activities that meet the needs of young children at this age. Watching TV programs is the second choice for parents in spending leisure time with preschoolers (M=3.08; SD=1.236 – weekend TV time, and M=2.55; SD=1.086 – weekday TV time).

No.	Leisure Time Activities	M	SD
1	Outdoor time (weekends)	4.92	1.471
2	Outdoor time (weekdays)	3.89	1.295
3	TV time (weekends)	3.08	1.236
4	TV time (weekdays)	2.55	1.086
5	Computer time (weekends)	1.98	1.242
6	Computer time (weekdays)	1.75	1.135

Table 1. Mean Values for Leisure Time Activities

Currently, the age of children accessing computers is decreasing, and the time spent on computers is increasing. However, the surveyed preschoolers' parents seem not to follow this trend. Among the three investigated activities – "outdoor time," "TV time," and "computer time" – parents reported the lowest mean value for computer activities (M=1.98; SD=1.242) on weekends, as well as on weekdays (M=1.75; SD=1.135) (Nilsen et al., 2019). From the perspective of age categories, parents aged 21-30 years recorded the highest value: M=2.65; SD=.875 for "TV time on weekdays" and "TV time on weekends," respectively. The same age category (21-30 years) recorded the highest values for "playtime outdoors both during and at the end of the week": M=4.35; SD=1.496 and M=5.45; SD=1.050, respectively. The 31-40 age group had the highest mean: M=3.09; SD=1.351 for "computer time during weekdays" and weekends. Regarding family income, families with incomes below 3000 RON/month recorded the highest mean for "TV time during weekdays" – M=3.75; SD=.500, and weekends – M=4.75; SD=.500. For "computer time during weekdays," families earning between 3001-4000 RON recorded the highest mean: M=2.36; SD=1.502, while for weekends, families earning 5001-6000 RON recorded the highest mean: M=2.63; SD=1.025. Families with monthly incomes below 3000 RON also recorded the highest mean for "weekday outdoor time" – M=5.25; SD=.500. Families with monthly incomes between 7001-8000 RON recorded the highest mean for "weekend outdoor time" – M=5.88; SD=1.088.

The research explored whether parents watch TV/computer together with preschoolers. Unfortunately, the percentage of parents who "never," "very rarely," or "rarely" watch TV/computer with their children is higher (56.9% - 74 subjects) compared to those who "often" or "very often" watch TV/computer together with their children (43.1% - 56 subjects) (Beck et al., 2023). This situation is unfortunate given

the young age of the children, as an adult's presence is necessary to intervene when needed. Furthermore, the research aimed to identify what parents do while watching TV/computer with their children. Most parents (46.2% - 60 subjects) act correctly by watching with the child and discussing what they see. Twenty parents (15.4%) only watch with the preschoolers, while 24 parents (18.5%) perform personal/household tasks while the child watches TV/computer. A total of 26 subjects (20%) did not respond to this questionnaire item.

Following ANOVA, the results showed: $F(4) = 4.697$, $p < 0.001$ between "time spent on the computer during weekdays" and "parental presence when the child watches TV/computer"; $F(4) = 4.456$, $p < 0.002$ between "time spent on the computer during weekends" and "parental presence when the child watches TV/computer." A very high positive Pearson correlation was recorded between "time spent on the computer during weekdays" and "time spent on the computer during weekends" (.787**, $p = 0.01$). High positive correlations were also observed between "TV time during weekdays" and "TV time during weekends" (.631**, $p = 0.01$), and between "time spent outdoors with preschoolers during weekdays" and "time spent outdoors with preschoolers during weekends" (.550**, $p = 0.01$).

We continue with the second objective: analyzing sports and artistic activities as leisure options for preschoolers, including a gender perspective. Let us begin with analyzing sports practiced by preschoolers (see Table 2). It is noteworthy that more than half of the children systematically practice a sport (77 children - 59.23%). The most practiced sport by preschoolers is swimming (30 subjects – 38.96%), followed by sports dances (11 subjects – 14.28%) and football (10 subjects – 12.98%). These are followed by gymnastics (7 subjects – 9.09%), basketball (6 subjects – 7.79%), handball (5 subjects – 6.49%), and hockey/skating (4 subjects – 5.18%). Karate and skiing are at the bottom (2 subjects – 2.59% each).

No.	Type of Sport	No. of Subjects	Percentage	No.	Type of Sport	No. of Subjects	Percentage
1	Football	10	12.98%	6	Sports dances	11	14.28%
2	Handball	5	6.49%	7	Hockey/skating	4	5.18%
3	Basketball	6	7.79%	8	Gymnastics	7	9.09%
4	Karate	2	2.59%	9	Skiing	2	2.59%
5	Swimmin	30	38.96%				

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Table 2. Sports Practiced by Preschoolers

There are also preschoolers who practice a second sport, though they are few—27 children (20.76%). Given the age of the children, practicing a second sport is commendable. For the second sport practiced, only tennis is added to the list, with the remaining sports being those listed above.

The research aimed to analyze how often children engage in specific sports activities each week. A positive finding was that preschoolers participated in sports twice a week (44 participants – 57.14%) or weekly (27 participants – 35.06%). Additionally, 2 preschoolers engaged in sports three times a week (2.59%), and 3 preschoolers participated in sports four times weekly (3.89%) (Kudlacek, 2021). Only one preschooler (1.29%) reported practicing sports occasionally. These results highlight a strong interest in sports activities among preschoolers.

The study also examined preschoolers' participation in artistic activities. In contrast to sports, a higher percentage of children did not engage in artistic activities (56.2% – 73 participants) compared to those who did (43.8% – 57 participants). Among those practicing artistic activities, most attended painting/drawing classes (30 participants – 52.63%). This was followed by music instrument lessons (8 participants – 14.03%) and ballet classes (8 participants – 14.03%). Three children (5.26%) practiced two artistic activities, such as a musical instrument and ballet. The lowest percentages were recorded for choir and modeling courses, each with 2 participants (3.50%). Regarding frequency, most preschoolers attended artistic activities weekly (29 participants – 50.87%) or twice weekly (20 participants – 35.08%). A small number engaged three times weekly (1 participant – 1.75%), while others attended daily (3 participants – 5.26%) or monthly (2 participants – 3.50%). Two participants (3.50%) did not respond to this question.

The study explored gender preferences in sports and artistic activities (see Figure 1). Boys predominantly chose sports such as soccer (9 boys vs. 2 girls), basketball (4 boys vs. 2 girls), and karate (2 boys vs. 0 girls). Girls favored swimming (20 girls vs. 10 boys), dance (9 girls vs. 2 boys), gymnastics (7 girls vs. 0 boys), handball (5 girls vs. 0 boys), hockey/ice skating (4 girls vs. 0 boys), and skiing (2 girls vs. 0 boys).

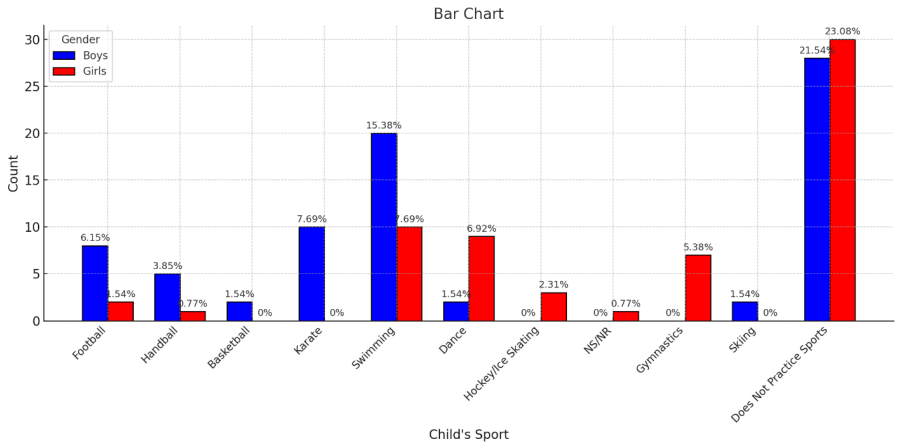

Figure 1. Gender Perspective on Children's Sports Preferences

In artistic activities, boys were less represented (see Figure 2). Two boys compared to one girl practiced both a musical instrument and ballet. Boys and girls were equal in practicing music and painting, with 2 participants each. Girls outnumbered boys in painting/drawing courses (23 girls vs. 8 boys), music instrument lessons (7 girls vs. 1 boy), ballet (7 girls vs. 1 boy), choir (2 girls vs. 0 boys), and modeling (2 girls vs. 0 boys).

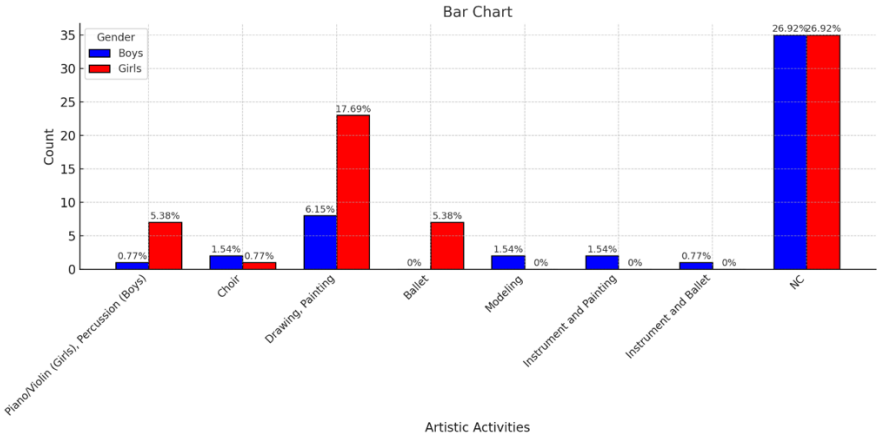

Figure 2. Gender Perspective on Children's Artistic Activity Preferences

Conclusions

Parents reported spending the most time with their children outdoors, particularly during weekends (M=4.92; SD=1.471) and weekdays (M=3.89; SD=1.295). ANOVA analysis revealed significant correlations between "time spent on the computer during weekdays" and "parental presence during screen time" (F (4)=4.697, p<0.001), as

well as between "time spent on the computer during weekends" and "parental presence during screen time" ($F(4)=4.456$, $p<0.002$).

Over half of the children systematically engaged in sports (77 children – 59.23%). Swimming (12.98%), sports dancing (14.28%), and soccer (12.98%) were the most practiced sports, followed by gymnastics (9.09%), basketball (7.79%), handball (6.49%), and hockey/ice skating (5.18%). Among artistic activities, painting/drawing courses were the most popular (52.63%), followed by music and ballet lessons (14.03%). Boys showed a preference for sports, while girls excelled in artistic activities (Žumárová, 2015). This research highlights the varied preferences of boys and girls and the importance of fostering opportunities for both sports and artistic pursuits among preschoolers.

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