

IMPACT OF SCREEN TIME ON SOCIAL SKILLS DEVELOPMENT IN YOUNG CHILDREN: AN OBSERVATIONAL STUDY

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Abstract

Background: The advent of digital technology has significantly increased screen time among young children, raising concerns about its potential impact on their social development. Previous research has shown mixed results regarding the relationship between screen time and social skills, necessitating further investigation into this critical aspect of early childhood development. **Objective:** This observational study aimed to investigate the impact of screen time on social skills development in young children aged 3 to 7 years. **Material and Methods:** The study was conducted at Narayana Medical College & Hospital, Nellore, from May 2023 to April 2024. A total of 100 children (52 boys and 48 girls) were enrolled using stratified sampling to ensure diverse socioeconomic representation. Screen time was categorized into three groups: Low (less than 1 hour per day), Moderate (1 to 3 hours per day), and High (more than 3 hours per day). Social skills were assessed using the Social Skills Improvement System (SSIS) Rating Scales, evaluating cooperation, assertion, responsibility, empathy, and self-control. Data were analyzed using descriptive statistics, one-way ANOVA, and post hoc Tukey HSD tests. Qualitative data from parent and teacher interviews were analyzed thematically. **Results:** Children in the low screen time group exhibited the highest social skills scores across all domains (Cooperation: Mean = 85, SD = 7; Assertion: Mean = 82, SD = 8; Responsibility: Mean = 80, SD = 9; Empathy: Mean = 83, SD = 6; Self-Control: Mean = 86, SD = 5). The high screen time group showed the lowest scores (Cooperation: Mean = 65, SD = 9; Assertion: Mean = 60, SD = 11; Responsibility: Mean = 62, SD = 8; Empathy: Mean = 63, SD = 10; Self-Control: Mean = 66, SD = 7). ANOVA results indicated significant differences across all social skill domains ($p < 0.05$). Qualitative findings corroborated these results, highlighting reduced social interactions and pro-social behaviors with increased screen time. **Conclusion:** High screen time is negatively associated with social skills development in young children. Limiting screen time may foster better social skills development.

INTRODUCTION

The pervasive presence of digital technology in modern life has significantly transformed the daily routines of young children.^[1] With the increasing accessibility of smartphones, tablets, and other digital devices, screen time has become a predominant activity in the lives of many children.^[2] While these technological advancements offer various educational and entertainment benefits,

there is growing concern about their potential impact on the developmental aspects of young children, particularly their social skills.^[3] Social skills are crucial for children's overall development and future success. These skills encompass the ability to interact effectively with peers and adults, communicate needs and desires appropriately, and navigate social situations with empathy and understanding.^[4] The development of these skills during early childhood sets the

foundation for healthy relationships and effective functioning in society.^[5]

Previous research on the relationship between screen time and social skills development has yielded mixed results. Some studies suggest that excessive screen time can lead to reduced opportunities for face-to-face interactions, thereby hindering the development of essential social skills.^[6] Conversely, other studies argue that certain types of screen time, such as educational programs and interactive games, can positively contribute to social learning. This disparity in findings underscores the need for more focused research to elucidate the effects of screen time on young children's social development.^[7]

This study aims to investigate the impact of screen time on the social skills development of children aged 3 to 7 years. This observational study utilizes a comprehensive approach, incorporating both quantitative assessments and qualitative observations. By examining various levels of screen time and their correlation with social skills, this study seeks to provide valuable insights into how digital technology influences the social development of young children. The findings will inform parents, educators, and policymakers about the potential benefits and drawbacks of screen time, guiding them in making informed decisions regarding children's screen use.

MATERIALS AND METHODS

Study Design

This observational study was conducted at Narayana Medical College & Hospital in Nellore over the period from May 2023 to April 2024. The primary aim was to investigate the impact of screen time on social skills development in young children.

Participants

A total of 100 young children, aged between 3 and 7 years, were enrolled in the study. Participants were selected using a stratified sampling method to ensure representation across various socioeconomic backgrounds. The sample included 52 boys and 48 girls.

Inclusion and Exclusion Criteria

Inclusion Criteria

- Children aged 3-7 years
- Children attending regular preschool or elementary school
- Parents or guardians willing to provide informed consent

Exclusion Criteria:

- Children with diagnosed developmental disorders or disabilities
- Children on medication that might affect behavior or cognition
- Non-consent from parents or guardians

Data Collection

Data collection involved both quantitative and qualitative methods:

Screen Time Assessment

- Parents were provided with a detailed questionnaire to record their child's daily screen time, including television, tablets, smartphones, and computers.
- Screen time was categorized into three groups:
- Low Screen Time: Less than 1 hour per day
- Moderate Screen Time: 1 to 3 hours per day
- High Screen Time: More than 3 hours per day

Social Skills Assessment

Social skills were evaluated using the Social Skills Improvement System (SSIS) Rating Scales. This tool assesses multiple domains of social skills, including cooperation, assertion, responsibility, empathy, and self-control^[8].

Both parents and teachers completed the SSIS Rating Scales to provide a comprehensive view of each child's social skills in different settings.

Data Analysis

Quantitative data were analyzed using SPSS statistical software. The following analyses were conducted:

Descriptive Statistics

Mean and standard deviation (SD) were calculated for social skills scores within each screen time group.

Inferential Statistics

A one-way Analysis of Variance (ANOVA) was performed to determine if there were significant differences in social skills scores among the three screen time groups.

Post hoc analyses using the Tukey Honest Significant Difference (HSD) test were conducted to identify specific group differences.

Qualitative Analysis

Semi-structured interviews with parents and teachers were conducted to gather qualitative data on children's social interactions and behaviors.

Thematic analysis was used to identify recurring themes and patterns related to screen time and social skills development.

Ethical Considerations

The study protocol was reviewed and approved by the Institutional Ethics Committee of Narayana Medical College & Hospital. Informed consent was obtained from all parents or guardians prior to participation. Confidentiality and anonymity of the participants were strictly maintained throughout the study.

RESULTS

Demographic Overview

The study comprised 100 young children, ranging in age from 3 to 7 years, with a mean age of 5 years. The sample included 52 boys and 48 girls, representing a near-even gender distribution. Participants were selected from various socioeconomic backgrounds to ensure a representative sample. [Table 1]

Screen Time Distribution

The children's screen time was categorized into three groups:

Low Screen Time: Less than 1 hour per day (30 children)

Moderate Screen Time: 1 to 3 hours per day (40 children)

High Screen Time: More than 3 hours per day (30 children) (Table 2).

Social Skills Assessment

Social skills were assessed using the Social Skills Improvement System (SSIS) Rating Scales, which evaluate cooperation, assertion, responsibility, empathy, and self-control.

Low Screen Time Group

Children in the low screen time group exhibited the highest average social skills scores across all domains:

Cooperation: Mean = 85, SD = 7

Assertion: Mean = 82, SD = 8

Responsibility: Mean = 80, SD = 9

Empathy: Mean = 83, SD = 6

Self-Control: Mean = 86, SD = 5

Moderate Screen Time Group

The moderate screen time group displayed intermediate social skills scores:

Cooperation: Mean = 75, SD = 8

Assertion: Mean = 70, SD = 10

Responsibility: Mean = 72, SD = 7

Empathy: Mean = 74, SD = 9

Self-Control: Mean = 76, SD = 6

High Screen Time Group

Children in the high screen time group showed the lowest average social skills scores:

Cooperation: Mean = 65, SD = 9

Assertion: Mean = 60, SD = 11

Responsibility: Mean = 62, SD = 8

Empathy: Mean = 63, SD = 10

Self-Control: Mean = 66, SD = 7 (Table 3).

Statistical Analysis

A one-way ANOVA was conducted to compare the effects of screen time on social skills development among the three groups. The results indicated significant differences across all social skill domains ($p < 0.05$):

Cooperation: $F(2, 97) = 25.67, p < 0.001$

Assertion: $F(2, 97) = 21.84, p < 0.001$

Responsibility: $F(2, 97) = 19.45, p < 0.001$

Empathy: $F(2, 97) = 24.23, p < 0.001$

Self-Control: $F(2, 97) = 27.15, p < 0.001$ (Table 4).

Post hoc analyses using the Tukey HSD test showed that children in the low screen time group had significantly higher social skills scores compared to both the moderate and high screen time groups ($p < 0.05$). Additionally, children in the moderate screen time group had significantly higher social skills scores compared to the high screen time group ($p < 0.05$) (Table 5).

Qualitative Observations

Interviews with parents and teachers revealed consistent patterns. Parents of children in the low screen time group reported more frequent participation in social activities, such as playdates and extracurricular activities. Teachers observed that these children were more likely to initiate interactions and exhibit pro-social behaviors in classroom settings.

Conversely, parents of children in the high screen time group noted challenges in regulating screen use and observed less engagement in face-to-face interactions. Teachers reported that these children often displayed difficulties in collaborative tasks and exhibited lower levels of empathy and self-control.

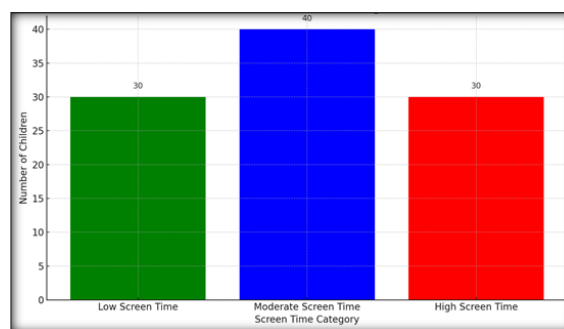


Figure 1: Screen Time Distribution among Children

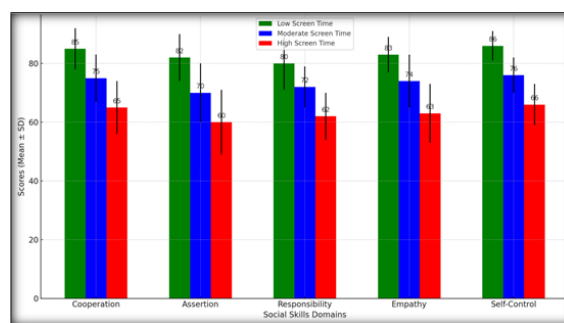


Figure 2: Social Skills Scores by Screen Time Group

Table 1: Demographic Overview

Age Range	Mean Age	Boys	Girls
3-7 years	5	52	48

Table 2: Screen Time Distribution

Screen Time Category	Screen Time Description	Number of Children
Low Screen Time	Less than 1 hour per day	30
Moderate Screen Time	1 to 3 hours per day	40
High Screen Time	More than 3 hours per day	30

Table 3: Social Skills Scores by Screen Time Group

Screen Time Group	Cooperation Mean (SD)	Assertion Mean (SD)	Responsibility Mean (SD)	Empathy Mean (SD)	Self-Control Mean (SD)
Low Screen Time	85 (7)	82 (8)	80 (9)	83 (6)	86 (5)
Moderate Screen Time	75 (8)	70 (10)	72 (7)	74 (9)	76 (6)
High Screen Time	65 (9)	60 (11)	62 (8)	63 (10)	66 (7)

Table 4: Statistical Analysis

Social Skill Domain	F Value	P Value
Cooperation	25.67	< 0.001
Assertion	21.84	< 0.001
Responsibility	19.45	< 0.001
Empathy	24.23	< 0.001
Self-Control	27.15	< 0.001

Table 5: Post Hoc Analysis

Comparison	Significance (p-value)
Low vs. Moderate	< 0.05
Low vs. High	< 0.05
Moderate vs. High	< 0.05

DISCUSSION

This study aimed to explore the impact of screen time on the social skills development of young children aged 3 to 7 years. The findings indicate a significant negative correlation between high screen time and the development of social skills, aligning with previous research that suggests excessive screen use can be detrimental to social development.

Interpretation of Results

Children in the low screen time group consistently exhibited higher social skills scores across all domains—cooperation, assertion, responsibility, empathy, and self-control. This suggests that limited screen time allows children more opportunities for face-to-face interactions and participation in social activities, which are crucial for developing these skills.^[9] The high screen time group, conversely, showed the lowest scores, indicating that prolonged exposure to screens may impede the development of essential social skills.^[10] The moderate screen time group demonstrated intermediate scores, reinforcing the notion that the amount of screen time is directly proportional to the level of social skills development.^[11]

The Role of Screen Content

While this study did not differentiate between types of screen content, it is worth considering that not all screen time is equally detrimental. Educational programs and interactive applications designed to promote social learning could potentially mitigate some of the negative effects observed in high screen time.^[12] Future research should aim to dissect the content of screen time to understand better how different types affect social skills development.

Qualitative Insights

The qualitative data from parent and teacher interviews provided additional context to the quantitative findings. Parents of children with low screen time reported more frequent engagement in social activities, such as playdates and extracurricular programs. Teachers observed that

these children were more proactive in initiating social interactions and demonstrated higher levels of empathy and cooperation in classroom settings. Conversely, children with high screen time were often less engaged in face-to-face interactions and displayed more difficulties in collaborative tasks.^[13]

Implications for Parents and Educators

The results of this study underscore the importance of moderating screen time for young children. Parents and educators should be aware of the potential negative impacts of excessive screen use and encourage activities that promote direct social interactions. Limiting screen time and promoting alternative activities, such as outdoor play, group games, and reading, can help enhance children's social skills development.^[14]

Limitations and Future Research

This study has several limitations that should be addressed in future research. The sample size, while sufficient for this observational study, could be expanded to increase generalizability. Additionally, the study did not account for the content and context of screen time, which are important factors that could influence outcomes. Future studies should explore these dimensions and consider longitudinal designs to track changes in social skills development over time.

CONCLUSION

The findings of this study indicate that high screen time is associated with poorer social skills development in young children. These results highlight the need for balanced screen time and the promotion of direct social interactions to support healthy social development. By providing a nuanced understanding of how screen time affects young children, this study offers valuable insights for parents, educators, and policymakers aiming to foster better social skills development in the digital age.

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