

Background

There is considerable research examining the effects of audiovisual media on children's developmental outcomes (Dickinson et al., 2019; Rautakovski et al., 2021).

■ Previous work has shown that higher media time negatively affects children's language use (Christakis et al., 2009; Kim et al., 2021; Stockdale et al., 2022).

■ The types of programs children watch appear to moderate the adverse influence of media exposure, with educational programs fostering language outcomes and entertainment or adult-oriented programs negatively influencing language outcomes (Tomopoulos et al., 2010; Wright et al., 2001).

■ Prior work has primarily relied on parent reports to measure the amount of media exposure and the type of media content children receive, without direct measures (Madigan et al., 2020).

■ Therefore, it is unclear how closely these reports reflect the actual properties of child media exposure.

Purpose

The present study aims to answer the following questions:

■ What is the relation between the amount of audiovisual media exposure and children's language use?

■ Does the type of media content relate to children's language use and language environment (adult language use with child)?

Methods

Participants

- 11 typically developing children
- Aged 21-30 months (M=28.17, SD=2.52, female=6)

Materials & Equipment

■ The Language Environment Analysis (LENA) system was used to collect recordings. A total of 149 hours 23 minutes (M=13 hours 35 minutes) were recorded (1-2 day recordings per child)

■ Recordings of children's waking time were used to manually code:

- total child media exposure;
- the audiovisual media types.

■ 5-minute language samples of child-adult conversations (M=54 complete child utterances) were also transcribed

Measures

The amount and type of audiovisual media exposure were researcher-coded by listening to the recordings in 10-second intervals

Media type:

child-oriented
educationalchild-oriented
entertainment

adult-oriented

Children's language use:

1. Total number of words
2. Number of turns
3. Mean length of turn

Language environment:

1. Total number of adult words
2. Mean length of child-directed adult turn
3. Number of child-directed adult turns

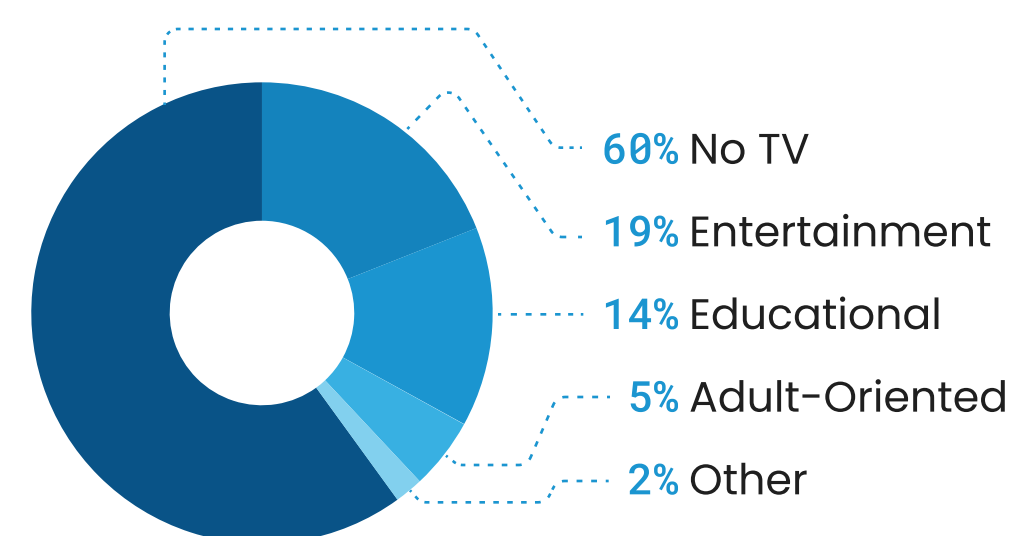
Analysis

Language samples were coded and analyzed using CLAN and CHAT (MacWhinney, 2000)

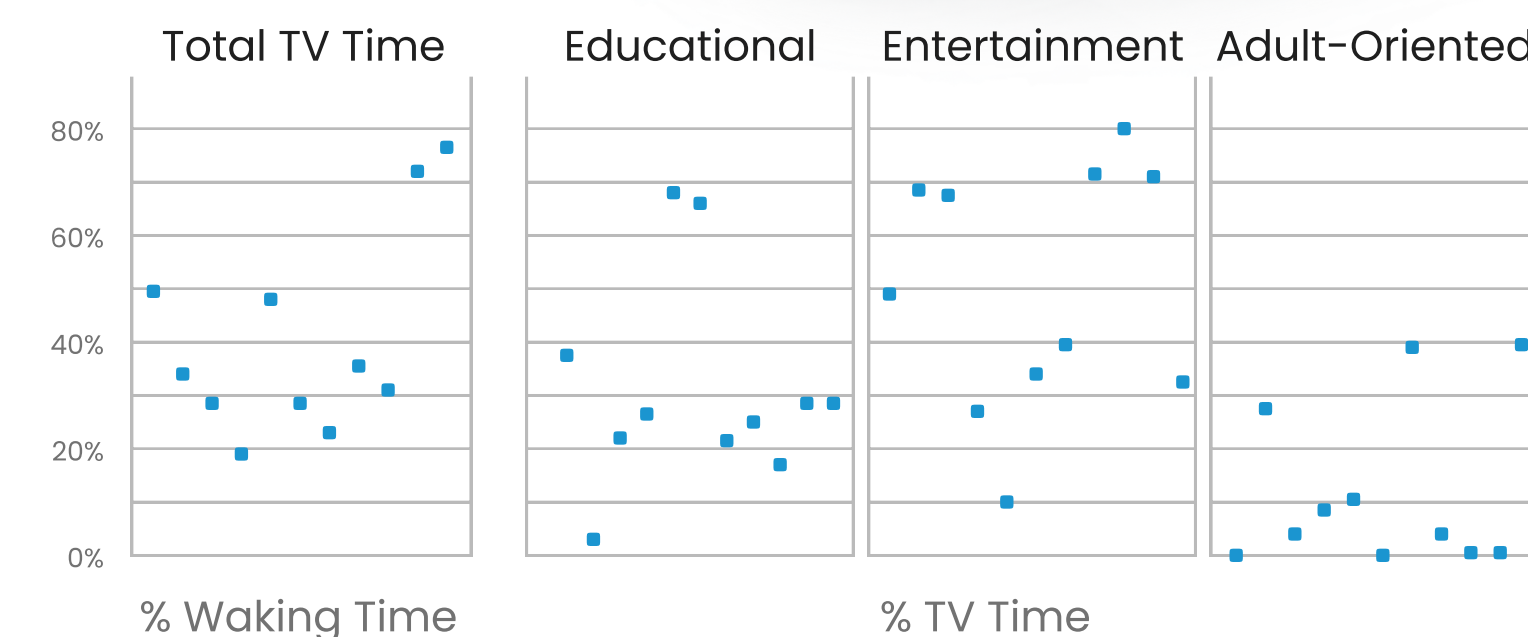


Results

On average, children were exposed to audiovisual media 40.25% of their waking time.



Child Waking Time Allocation



Correlation Analyses Between Media Time And Child Language Use And Language Environment (N=11)

		Child Educational	Child Entertainment	Adult-Oriented	Total Media Time
Children	Total Number of Words	-0.45	.77**	0.04	0.09
	Number of Turns	0.32	-0.03	-0.88**	-0.44
	Mean Length of Turn	-0.40	0.15	.77**	0.39
Adults	Total Number of Words	.61*	-0.30	-.65*	-0.39
	Number of Turns	0.47	-0.06	-.86**	-0.37
	Mean Length of Turn	0.45	-0.37	-0.23	-0.51

* $P < 0.05$, ** $P < 0.01$

Children

- When exposed to more adult-oriented media, produced longer turns, but the number of turns was lower
- When exposed to more child-oriented entertainment media, produced more words

Adults

- In households with more adult-oriented media, spoke to child less frequently and used fewer words in conversation with the child
- In households with more child-oriented educational media, used more words in conversation with the child

Implications

The use of naturalistic data collected through day-long recordings in families' homes allows us to measure children's exposure to audiovisual media more robustly than through parent reports.

While no connection between total media time and language use was identified, our findings indicate that the relationships between audiovisual media exposure and child language use may be different based on the type of media.

Results of our study can inform future research and interventions directed at child language development and audiovisual media exposure.

Future Directions

Next steps for this project include coding and analyzing data for a larger sample of participants and conducting regression analyses to control for demographic characteristics.

Acknowledgements

This research was funded by the ASHFoundation New Investigator Award (PI: Su).

Data collection efforts are supported by the University of Delaware Speech Language Acquisition and Multilingualism (SLAM) Lab (PI: Morini).

We thank all the families who completed the study. We thank Mels Ayala for help coordinating data collection efforts, and the members of the SLAM Lab for help with scheduling. The authors do not have any known or potential conflicts of interest. Images: Freepik.com, Texas Children's Hospital.