

# Interaction Time, Play Time and Screen Time of Typically Developing Children

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## ABSTRACT

Exposure to language rich and stimulating environments plays a very crucial role in developing normal speech and language skills in children. The aim of the current research is to investigate the duration of parent child interaction, duration of playtime with the child and screen time in TD children. A total of 60 parents of TD children participated in the study. The TD children were in the age range of 1 to 5 years. A survey study was conducted, in which an online questionnaire was prepared using google form. The questionnaire consisted of 13 closed ended questions. Data collection was carried out by sending the questionnaire to the participants through WhatsApp- a mobile phone application. Participants consent was received prior to filling up the questionnaire. Their responses were compiled and mean percent responses were calculated, tabulated and described. The results of the study indicated that more than 50% of mothers and fathers spend about 3 hours interacting with child and compared to father, mother spend more time playing with the child and increased screen time found in TD children. Findings of the study would help Speech language pathologists and Rehabilitation professionals to counsel parents of children with communication disorders on language stimulation.

**Keywords:** Language stimulation, typically developing, parent's role, screentime.

## INTRODUCTION

Every parent expects eagerly to hear their child's first word and enjoys to see how they develop in communication. Speech and language skills are one of the wonderful and special aspect that mankind acquire. Learning to communicate begins first with social exchange between the infant and the caretaker and continues until the subtle rules governing polite forms, humor and sarcasm are finally mastered late in the school years.<sup>1</sup> Several theories in the past have been put forth to explain the process by which children acquire language. The prime proponent of social interaction theory, Lev Vygotsky in 1930s<sup>2</sup> - advocated that children learn language by interacting with adults. Adults or parents in the child's environment aid use Child directed speech to aid to child in language development. When adults interact with infants, they typically use a communication style. Some of these components of child directed speech or motherese are short utterances, syntactically simple but grammatically well-formed utterances, use of more concrete nouns and verbs and fewer modifiers in utterances, replacing proper nouns with pronouns, higher pitched voice with rising intonation patterns rather than falling patterns at the ends of the utterances, longer duration of spoken words with reduced rate of speech, obvious pauses and use of more than one stressed word in a utterance. While

interacting with toddlers or young children speak, adults simplify their verbal input, and alter the ways they respond to children's utterances. Parents, often respond to their child's speech by expanding or rephrasing or correcting the child's utterances and repeating the message. Parents tend to correct child's semantic errors initially and as the child grow, they also correct morphosyntactic and phonological errors.

Parents can be the best communication trainers for their child as they know their child's abilities well, and spend most of the time with the child, so there are more possibilities for interaction. They provide model to the child to learn language and speak, create opportunities for the child to initiate interaction, add words and meanings to the child's initial productions, during daily routines such as brushing, feeding, and bathing etc., child get to listen to same words again and again which helps the child to make strong representations of the words and meanings. Parents also correct the child's wrong productions, reinforce the appropriate productions, expand and extend the child's language which in turn add richness to the child's speech. Play is one important way provide rich language experience and interaction. During play, both parent and child connect with each other and enjoy interacting and makes language learning very joyful. In the same manner, early exposure to books at home enhances language development. Further singing and use of rhymes also aids in language development.

Parent child interaction is very essential for language development. However, exposure to screen time in early years, children especially less than 2 years, may reduce the duration of interaction between parent and child and hamper language development. Negative effects of early screen time on language development were reported by two studies. Chonchaiya and Pruksananonda (2008)<sup>3</sup> reported that children who started watching television at less than 12 months of age and watched television greater than 2 hours per day were approximately six times

more likely to have language delays. In another recent investigation, Perdana, Medise and Purwaningsih (2017)<sup>4</sup> studied screen time in 18 to 3 years typically developing children and children with language delay. It was found that children who watch TV greater than 4 hours per day have four times higher risk of developing language delay. American Academy of Pediatrics recommends screen time for children less than 18 months, only for video calls with adult supervision, for children between 18 to 24 months, only educational screen time under adult supervision and for children between 2 and 5 years, one hour of non-educational screen time on weekdays and up to three hours on weekends. There is an increasing need to develop awareness among parents on negative effects of increased screen time. The negative effects include obesity, reduced physical activity, affect cognitive, speech and language development, social and psychological wellbeing and eye related issues.

Moreover, parents of children with communication disorders spend lot of time taking the child for different therapies, travel for therapies, household works, office work, caring for the child and other family members. In this busy schedule, they most often miss the joy of communicating, playing and spending quality time with the child. Moreover, they are also stressed and worried of the condition (communication disorder with associated deficits) of their child and fail to realize their part in improving child's communication skills and this hampers them to participate actively and joyfully interacting with their child.

It is essential that parents spend good quality time to provide adequate language rich environment for the child. However, till date there are no such reported study on language stimulation at home for young typically developing children. Investigation on language stimulation is very important as it provides guidelines to counsel and create awareness to parents of both typically developing children and children with communication disorders. The aim of the

study is to investigate the language stimulation of Typically Developing Children (TD) in home environment. More specifically, to investigate the duration of interaction and play time of TD children in the age range of 1 to 5 years with their family members, and their screen time exposure.

## **METHOD**

**Participants:** A total of 60 Telugu speaking parents of typically developing (TD) children in the age range of 1 to 5 years from Andhra Pradesh, India participated in the study. Of them, 28 children were females and 32 were males. All the participant's parents have completed bachelor's degree of educational qualification.

**Inclusion Criteria:** The following is the inclusion criteria -

1. Parents of children going to normal school.
2. Parents of children with no reported neurological and any health issues.
3. Parents of children with no reported hearing impairment.
4. Parents of children with no complains of delay in speech and language skills.

**Questionnaire:** An online questionnaire was developed to study the interaction time, play time of TD children with their family members, and their screen time exposure. The questionnaire has 3 sections and a total of 13 closed ended questions. Section 1 has 6 questions; section II includes 6 questions and section III has 1 question.

## **Questionnaire**

### **Section I: Duration of interaction with the child**

- I.1 "How much time father is interacting with the child?"
- I.2 "How much time mother is interacting with the child?"
- I.3 "How much time grandfather is interacting with the child?"

I.4 "How much time grandmother is interacting with the child?"

I.5 "How much time siblings are interacting with the child?"

I.6 "How much time maid is interacting with the child?"

### **Section II: Duration of playtime with the child**

II.1 "How much time father spend playing time with the child in a day?"

II.2 "How much time mother spend playing time with the child in a day?"

II.3 "How much time grandfather spend playing time with the child in a day?"

II.4 "How much time grandmother spend playing time with the child in a day?"

II.5 "How much time siblings spend playing time with the child in a day?"

II.6 "How much time maid spend playing time with the child in a day?"

### **Section III: To study the screen time of TD children**

III.1 "How long in a day your child spends in watching TV/ Phone / gadgets?"

The questionnaire was given to 5 Speech Language Pathologist for content validations and the recommendations were incorporated.

**Procedure:** The questionnaire was further fed in to google form to share with parents and parent's group. Data was collected from parents who met the inclusion criteria. Prior to the data collection an online informed consent form was signed by the parents. The online questionnaire was made using google form and the link was sent to parents through WhatsApp phone application and by contacting them through phone. The filled in google forms were submitted by the parents. The responses from parents were tabulated and mean scores and mean percent scores were calculated and presented descriptively.

## **RESULTS**

Results are presented under each section.

**Section 1: Duration of interaction with the child**

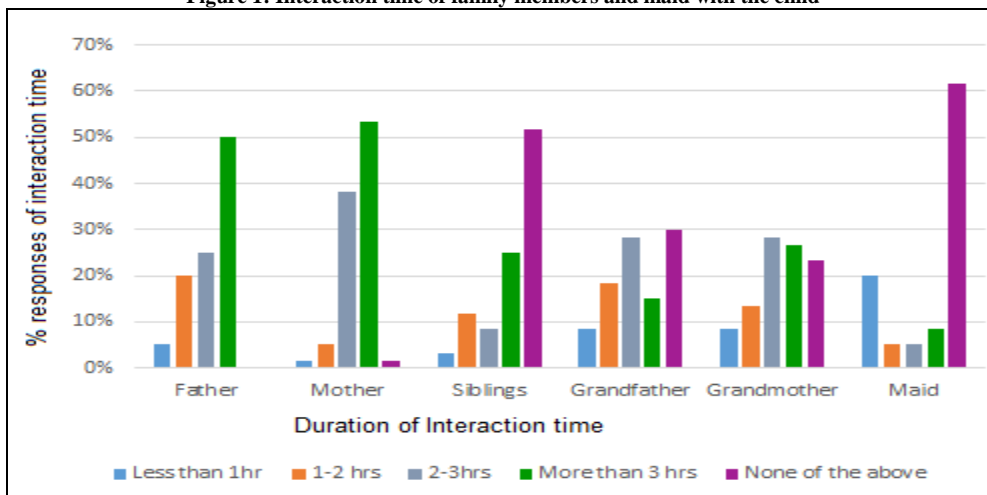
To find the duration of interaction between TD children and family members, the question “How much time the family members (father, mother, siblings, grandfather, grandmother) & maid spend interacting with the child in a day?” was asked. Of the 60 responses submitted by the parents, it is found that 5% of fathers spend less than 1 hour, 20% of fathers spend 1 to 2 hours, 25% of fathers spend 2 to 3 hours and 50% of fathers spend more than 3 hours interacting with the child. Similar to fathers, 53.3% of mothers also spend more than 3 hours interacting with the child, 38.3% of mothers spend 2 to 3 hours 1.6% of mothers spend less than 1 hour, and 5% of mothers spend 1 to 2 hours. About 3.3% of siblings spend less than 1 hour, 11.6% of siblings spend 1 to 2 hours, 8.3% of siblings spend 2 to 3 hours, and 25% of siblings spend more than 3 hours interacting with the child.

Parents responses indicated that 8.33% of grandfathers spend less than 1 hour, 18.33% of grandfathers spend 1 to 2 hours, 28.33% of grandfathers spend 2 to 3 hours and 15% of grandfathers spend more than 3 hours interacting with the child. Responses about grandmothers indicated 8.33% of grandmother spend less than 1 hour, 13.33% of grandmother spend 1 to 2 hours, 28.33% of grandmother spend 2 to 3 hours and 26.66% of grandmothers spend more than 3 hours interacting with the child. Twenty percent of maid spend less than 1 hour, 5% of maid spend 1 to 2 hours, 5% of maid spend 2 to 3 hours, and 8.33% of maid spend more than 3 hours interacting with the child. None of the above responses were opted for 1.6% of mothers, 51.6% of the siblings, 30% of the grandfathers, 23.33% of the grandmothers and 61.66% of maid. Table 1 and figure 1 shows the interaction time of family members and maid with the child in a day.

**Table 1: Interaction time of family members and maid with the child**

Duration of interaction	Percent responses and number of responses (n) of Interaction time					
	Father	Mother	Siblings	Grandfather	Grandmother	Maid
Less than 1hr	5% (3)	1.6% (1)	3.3% (2)	8.33% (5)	8.33% (5)	20% (12)
1-2 hrs	20% (12)	5% (3)	11.6% (7)	18.33% (11)	13.33% (8)	5% (3)
2-3hrs	25% (15)	38.3% (23)	8.3% (5)	28.33% (17)	28.33% (17)	5% (3)
More than 3 hrs	50% (30)	53.3% (32)	25% (15)	15% (9)	26.66% (16)	8.33% (5)
None of the above	0% (0)	1.6% (1)	51.6% (31)	30% (18)	23.33% (14)	61.66% (37)

**Figure 1: Interaction time of family members and maid with the child**



## Section II: Duration of playtime with the child

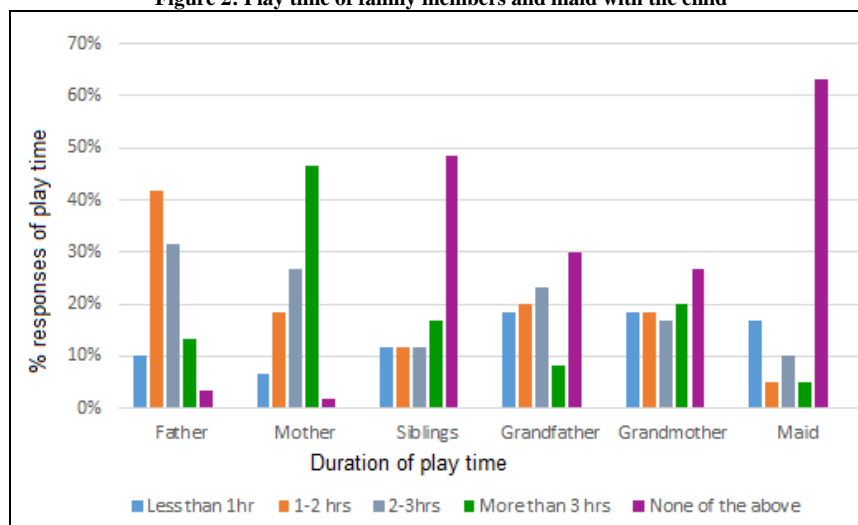
To find the duration of play time between TD children and family members, the question “How much time does family members (mother, father, siblings, grandfather, grandmother) & maid spend playing with their child?” was asked. It was found that in young children, 10% of fathers spend less than 1 hour, 41.6% of fathers spend 1 to 2 hours, 31.6% of fathers spend 2 to 3 hours and 13.3% of fathers spend more than 3 hours playing with the child. Also, 6.6% of mothers spend less than 1 hour, 18.3% of mothers spend 1 to 2 hours, 26.6% of mothers spend 2 to 3 hours and 46.6% of mothers spend more than 3 hours playing with the child. Responses playtime with siblings indicated that, 11.6% of siblings spend less than 1 hour, 11.6% of siblings spend 1 to 2 hours, 11.6% of siblings spend 2 to 3 hours and 16.6% of siblings spend more than 3 hours playing with the child.

Responses playtime with grandparents showed that, 18.3% of grandfathers spend less than 1 hour, 20% of grandfathers spend 1 to 2 hours, 23.3% of grandfathers spend 2 to 3 hours and 8.3% of grandfathers spend more than 3 hours playing with the child. Similar to responses for grandfathers, 18.3% of grandmother spend less than 1 hour, 18.3% of grandmother spend 1 to 2 hours, 16.6% of grandmother spend 2 to 3 hours and 20% of grandmothers spend more than 3 hours playing with the child. With respect to playtime with maid, 16.6% of maid found to spend less than 1 hour, 5% of maid spend 1 to 2 hours, 10% of maid spend 2 to 3 hours, and only 5% of maid spend more than 3 hours playing with the child. None of the above responses for play time was given for 3.33% of fathers, 1.66% of mothers, 48.33% of the siblings, 30% of the grandfathers, 26.66% of the grandmothers and 63.33% of maid. Table 2 and figure 2 shows the interaction time of family members and maid with the child in a day.

Table 2: Paly time of family members and maid with the child

Duration of play	Percent responses and number of responses (n) of play time					
	Father	Mother	Siblings	Grandfather	Grandmother	Maid
Less than 1hr	10% (6)	6.66% (4)	11.6% (7)	18.33% (11)	18.33% (11)	16.66% (10)
1-2 hrs	41.6% (25)	18.33% (11)	11.6% (7)	20% (12)	18.33% (11)	5% (3)
2-3hrs	31.66% (19)	26.66% (16)	11.6% (7)	23.33% (14)	16.66% (10)	10% (6)
More than 3 hrs	13.33% (8)	46.66% (28)	16.66% (10)	8.33% (5)	20% (12)	5% (3)
None of the above	3.33% (2)	1.66% (1)	48.33% (29)	30% (18)	26.66% (16)	63.33% (38)

Figure 2: Play time of family members and maid with the child





Overall percent score indicates that duration (more than 3 hours) spent in play with younger children was more by mother when compared to other family members.

**Section III: To study the screen time of TD children**

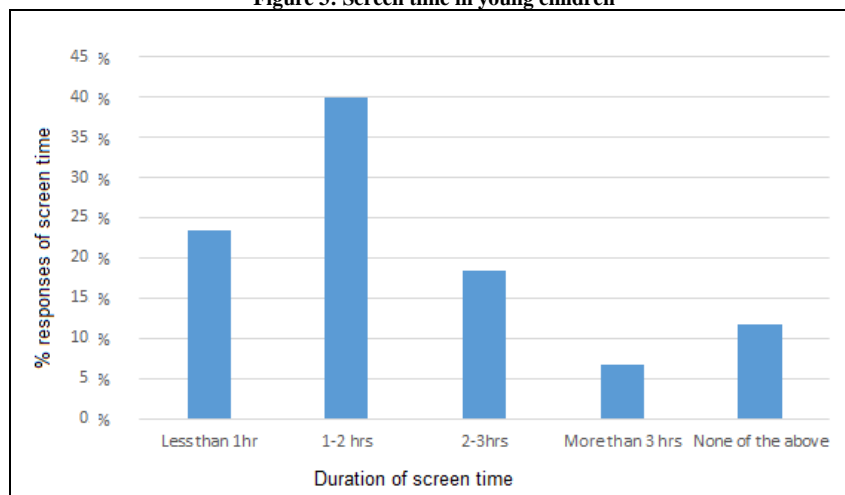
To investigate the duration of screen time in TD children in a day, the question “How long in a day does your child spend

watching TV/ Phone / gadgets?” was asked. Parents responses for question on duration of screen time in children revealed in young children, that about 23.3% of parent’s responses were for less than 1 hour, 40% for 1 to 2 hours, 18.3% for 2 to 3 hours and 6.6% for more than 3 hours of screen time and 11.6% of children are not exposed to screen time.

**Table 3: Screen time in young children**

Duration of screen time	No. of responses	Percent responses
Less than 1hr	14	23.33%
1-2 hrs	24	40%
2-3hrs	11	18.33%
More than 3 hrs	4	6.66%
None of the above	7	11.66%

**Figure 3: Screen time in young children**



**DISCUSSION**

The results revealed several interesting findings on duration of interaction time, play time and screen time of TD children in home environment. First, among the family members of young children, mother spends more duration interacting with the child. About 53.3% of mothers and 50 % of fathers of young children spend more than 3 hours in interacting with the child.

Second, it was found that mothers (46.6%) spend more time (3-4 hours) playing with their children compared to fathers (13.33%) and other family members. This finding may be attributed to the fact that most of the mothers participated in the study were housewives, so they could play more than 3

hours in a day compared to fathers and others.

Thirdly, about 40% of children have 1 to 2 hours and 24.9% of TD children have screen time more than 2 hours in a day. American Academy of Pediatrics recommends screen time for children less than 18 months could be allowed only for video calls with adult supervision, for children between 18 to 24 months, only educational screen time is allowed under adult supervision and for children between 2 and 5 years, on weekdays one hour of non-educational screen time could be permitted and on weekends up to three hours could be permitted. There is an increasing need to develop awareness among parents on negative effects of increased screen time.

The negative effects include obesity, reduced physical activity, affect cognitive, speech and language development, social and psychological well-being and eye related issues. Parents need to focus on the alternate productive ways to engage their children in activities such as playing outdoor games, playing unstructured games learning music instruments, cycling and to provide increased opportunity to socialize with other children and people of all ages.

None of the above responses were opted by parents in section 1- interaction time, section 2 -play time with family members & in section III for screen time of children. These responses were given probably because the child does not have that family member or that family member is not living with the child or they have not employed a maid or they don't have gadgets at home.

## CONCLUSION

Findings of the current study details the interaction time, play time and screen time of typically developing children in home environment in the state of Andhra Pradesh, India. Findings of the study would help Speech language pathologist and Rehabilitation professionals to counsel parents of children with communication disorders on language stimulation. Especially, the findings emphasis the need for each family to spend at least more than 5 hours a day in interacting and playing and to practice screen time of less than 2 hours per day with 1 to 5 years old children for providing appropriate language exposure

and healthy learning. With respect to increased screen time in children, there is an increasing need to develop awareness among parents on negative effects of increased screen time.

## Declaration by Authors

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**Conflict of Interest:** The authors declare no conflict of interest.

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