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Evaluation of Home Communication Skills in Children with Speech Delay

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Abstract

Aim: The purpose of this study is to examine the communication skills of children with speech delay and to examine the impact of the child's gender, age, family type, attendance at kindergarten, socio-economic level of the family, parental occupation, educational status on the child's communication skills.

Materials and methods: Parents of 100 children between 3 and 6 yrs of age who were diagnosed with delayed speech were included. Parents' General Information Form and Home Communication Questionnaire were applied through face-to-face interview technique. Turkish Preschool Language Scale (TPLS)-5 was used in evaluating children's language and speech skills.

Results: 66% of children with delayed speech who participated in this study are boys and 34% are girls. When children spend time with adults, 89% of them play physical games and 83% learning games, 79% check books and 67% do daily work. The time children spend at home is as follows; 13.76 h with the mother, 4.76 h with the siblings, 4.51 h with the father, 1.24 h with the other family members, and 0.19 h with the other persons. Children spend an average of 2.79 h watching TV at the weekend, and 2.34 h during the weekdays on a daily basis.

Conclusion: The increasing use of erroneous and long-lasting technology (computer, tablet, etc.) in recent years constructs the basis for speech delay in early childhood. Especially important is the effective use of speech between the ages 0 and 3, the most critical period for language and speech development, by increasing educational verbal communication in the home environment and by keeping children away from intense visual stimuli as much as possible.

Keywords: Speech; Speech delay; Children; Home; Communication

Introduction

One of the most important means of communication among people is speech. It is a narration-focused language skill. The narration is necessary for the speech to take place; the ability to understand and symbolize, the language, the grammar of the native language, knowledge and vocabulary are other essential processes. These processes are realized in the mind of the individual, which results with the construction of the meaning and verbal expression [1-3].

Language is a code system with rules that communities share in order to communicate. When the individual learns the code system of a language, he/she will learn the language. Language development is examined under the headings of recipient and expressive languages. The recipient language is the ability of an individual to understand and interpret the language-specific codes. Expressive language is the language skill that is used to convey the individual's thoughts, feelings and desires to other individuals. Tools for expressive language are eye contact, sign, gesture, mimic and speech [3,4]. The language develops as an interaction of individual since he/she was born with environmental elements parallel to the sensory and cognitive development [4]. Due to the development and maturity of brain in the process up to the age of three, language and speech development progresses very rapidly. The complete acquisition of speech takes place as a result of a process and requires all rules of the language to be learned [5]. Delayed language and speech appears as the mismatch of the chronological and speech ages in the development process. The child has a speech development which obviously differs from the speech of his peers. The child will be considered as having a delay in language and speech if his/her way of speaking is different from his/her peers in a way that other individuals cannot understand. As a result of this situation, which is frequent during childhood, the professional life and social skills of the child are adversely affected. One of the most important reasons for the delay in the development of speech in children is the characteristics of the home communication environment [1-6].

The main purpose of our study is to examine the home communication skills of children with speech delay. In addition, the effect of the variables such as gender, age, family type, kindergarten attendance, socio-economic level, parents' occupation, educational status, television watching time, computer/tablet usage duration on communication skills is examined.

Materials and Methods

This study was initiated after the decision of the Faculty of Medicine, Clinical Researches Ethics Committee dated 16.03.2016

dated 2015/12 and numbered 99950669/263 which stated that the study is in compliance with ethical and scientific principles. The sample of the study consisted of parents (mother and father) of 100 children between 3 and 6 yrs of age who were diagnosed with language and speech delay according to the Preschool Language Scale-5 (PLS-5) test conducted in Hacettepe University Hearing and Speech Training Center. Otologic examinations and audiologic assessments were performed for all the children. Parents of children with an additional disability and/or illness other than delayed speech (hearing loss, mental retardation, neurological diseases, etc.) are excluded from the study. The Home Communication Questionnaire and the General Information Form were applied by the researchers through face-to-face interview technique to the parents of 100 children who experienced a speech delay.

To get parents' permission, they were asked to sign the Information Consent Form and Voluntary Participation Form giving information about the study.

Data collection tools

General information form: The 'General Information Form' consists of questions for the child and the parents. The form is used to determine the factors that may affect the speech development of the children participating in the study such as chronological age, gender, parental education status and occupation, number of siblings, age of toilet training acquisition, age of suspected speech delay, birth order and the educational institution student attended at pre-school level.

Preschool Language Scale-5 (PLS-5) and home communication questionnaire

PLS-5 is a language assessment test widely used throughout the world to identify children with Auditory Perception (AP) and Expressive Communication (EC) delay or impairment, developed for use in children aged 0-7 yrs and 11 months [7]. PLS-5 was translated, adapted, and reliability and validity studies were conducted by Sahli and Belgin on a total of 1320 children between 0 and 7 yrs and 11 months of age. The Pearson correlation coefficients for the standard scales of Turkish PLS-5 resulted as follows in the end of the study- AP Raw Score:0.937, EC Raw Score:0.908 and TLS (Total Language Score) is 0.926. The correlation coefficients for age equivalence are, AP:0.871, EC:0.896 and TLS:0.887. The study results indicate that TPLS-5 is a valid and reliable language test for Turkish children [8].

PLS-5 consists of two standard scales, Auditory Perception and Expressive Communication; and three additional measurements, Language Sample Test, Articulation Screening Test, and Home Communication Questionnaire [7,8]. The Home Communication Questionnaire was prepared for children between 0 and 2 yrs and 11 months of age. It is a questionnaire to determine the communication behaviors of the person(s) taking care of the child with the child. It can also be used to assess communication skills of older children. Questionnaire includes questions about how the child's receptive and expressive language skills are in different settings. The Home Communication Questionnaire can also be used to support the results of the PLS-5 test and to prepare a service plan for families [7,8].

Statistical analysis

The data obtained as a result of the study were analyzed with the SPSS 20 statistical program. The frequency, percentage, minimum and maximum values, mean, standard deviation, Chi-square (χ^2) and eta coefficients were calculated. The significance level of the interpretation of the results was accepted as 0.05.

Results

66% of the children (N:66) participated in our study were boys and 34% (N:34) were girls. When the age range of children is examined; 35% are between the ages of 3.0-4.6 yrs, and 65% are between the ages of 4.6-6.0 yrs. 91% of the families have the nuclear family type, whereas 9% have the extended family type. 76% of the children had pre-school education and 24% did not receive pre-school education (Table 1).

		N	%
Gender of child	Boy	66	66.0
	Girl	34	34.0
Child's age	3.0 – 4.6 years	35	35.0
	4.6- 6.0 years	65	65.0
Family type	Nuclear Family	91	91.0
	Extended family	9	9.0
Status of kindergarten attendance	Attended	76	76.0
	Not attended	24	24.0

Table 1: Demographic information of children participated in study.

33% of the parents who participated in the research are high school graduates. 73% of the mothers are housewives and 61% of the fathers are employed in private sector. 48% of the families have a medium socio-economic level (Table 2).

		N	%
Mother's education level	Primary School	26	26.0
	Secondary School	11	11.0
	High School	33	33.0
	Associate Degree	6	6.0
	Undergraduate	22	22.0
	Graduate	2	2.0
Father's education level	Primary School	15	15.0
	Secondary School	15	15.0
	High School	33	33.0
	Associate Degree	5	5.0
	Undergraduate	26	26.0
	Graduate	6	6.0
Mother's occupation	Housewife	73	73.0
	Public Employee	20	20.0
	Private Sector Employee	7	7.0
	Self-Employed	0	0.0

	Other	0	0.0
Father's occupation	Housewife	2	2.0
	Public Employee	31	31.0
	Private Sector Employee	61	61.0
	Self-Employed	6	6.0
	Other	0	0.0
Socio-economic level	Low	19	19.0
	Average	48	48.0
	Good	29	29.0
	Very Good	4	4.0

Table 2: Demographic information of parents who have child with speech delay.

The average time children spend at home is 13.76 h with mother, 4.51 h with father, 4.76 h with siblings, 1.24 h with other family members and 0.19 h with other people. The children who participated in our study watch television for 2.79 h at weekends and 2.34 h on weekdays; play with other children 2.05 h at weekends, 2.30 h on weekdays; play with adults 1.88 h at weekends and 1.51 h on weekdays; play games on their own 1.69 h at weekends and 1.55 h on weekdays; and use computer or tablet for 0.99 h (Table 3).

My child is usually at home... (hour)	**N**	**Min**	**Max.**	**Mean**	**SD**
TV monitoring –weekdays	100	1	10	2.34	1.38
TV monitoring –weekend	100	0	10	2.79	1.72
Playing with adults-weekdays	100	0	12	1.51	1.76
Playing with adults-weekend	100	0	12	1.88	1.90
Playing with other children-weekdays	100	0	8	2.30	1.66
Playing with other children-weekend	100	0	6	2.05	1.41
Self-playing-weekdays	100	0	6	1.55	1.23
Self-playing-weekend	100	0	7	1.69	1.48
Tablet-computer usage	100	0	4	0.94	0.86

Table 3: Activities and durations of the child in the home environment. Min: Minimum; Max: Maximum; SD: Standard Deviation.

Favorite TV programs of 74% of children are cartoons, 17% of children are children's programs and 9% of children are movies. Children spend 89% of their time with adults playing physical games, 83% learning, 79% reading books and 67% doing daily work (Table 4).

When my child spends time with adults...	**Y/N**	**N**	**%**
Conducts daily work	Yes	67	67.0
	No	33	33.0
Plays physical games	Yes	89	89.0
	No	11	11.0
Plays games intended to learn	Yes	83	83.0
	No	17	17.0
Looks at books	Yes	79	79.0
	No	21	21.0

Table 4: Activities conducted by child while spending time with adults.

Children who participated in the research play games with other children on weekdays and at weekends; 60% share their toys with and talk to other children; 58% follow the instructions of other children or do what they say when playing on weekdays and at weekends (Table 5). Among the children who participated in the research, 94% play well with their toys, 89% play with two or more toys at the same time, 81% play simple games with parents, 80% realize known situations, 72% use their toys for symbolic games, 71% play by shaking and hitting objects one another, and 53% play unknown situations.

When playing with other children, my child sometimes...		**N**	**%**
Plays with other children but does not share his/her toys	No	56	56.0
	Weekday	10	10.0
	Weekend	3	3.0
	Weekdays and Weekend	31	31.0
Plays with other children and does what they do or what they say	No	35	35.0
	Weekday	6	6.0
	Weekend	1	1.0
	Weekday and Weekend	58	58.0
Plays with other children, tells them what they should do	No	59	59.0
	Weekday	5	5.0
	Weekend	2	2.0
	Weekday and weekend	34	34.0
Plays with other children by sharing his/her toys and speaking with them	No	34	34.0
	Weekday	5	5.0
	Weekend	1	1.0
	Weekday and weekend	60	60.0
My child does not play with other children	No	97	97.0
	Yes	3	3.0

Table 5: Activities Conducted By Child While Playing with Peers.

93% of the children responded to the voices, 93% raised their head and stopped what they were engaged in when their name was called, 90% looked at the direction indicated by the "look" direction, 89% looked at the talking person, 80% looked at the food stool or food falling from the table. 7% of the children do not react and they do not raise their head and stop what they were engaged in when their name was called (Table 6).

My child is attentive to things happening around him/her. For instance,	Y/N	N	%
Reacts to voices	Yes	93	93.0
	No	7	7.0
When I call his/her name, he/she lifts head by stopping what he/she is engaged at	Yes	93	93.0
	No	7	7.0
Looks at talking people	Yes	89	89.0
	No	11	11.0
Looks at food falling down from food stool/table	Yes	80	80.0
	No	20	20.0
When I say "Look", he/she stares at the place I point	Yes	90	90.0
	No	10	10.0

Table 6: Attention of child to exterior stimuli.

When parents of delayed children take care of them, 96% are smiling, 89% are talking when parents speak, 89% are inviting parents to play, and 58% are talking with parents by using voices and words and waiting their turn to speak (Table 7).

My child enjoys being taken care of. For instance,	Y/N	N	%
He/she smiles when I speak with him/her	Yes	96	96.0
	No	4	4.0
He/she speaks whenever I speak with him/her	Yes	89	89.0
	No	11	11.0
He/she speaks with me by using voices and words and waiting his/her turn	Yes	58	58.0
	No	42	42.0
He/she invites me to play with him/her	Yes	89	89.0
	No	11	11.0

Table 7: Reaction of child to being cared with him/her.

97% of the children follow the instructions of their parents when gesture-matching words are used, 95% when gestures are used, 92% when words and simple phrases are used, 90% when single stage instructions are given and 79% when two stage instructions are given (Table 8).

My child follows my instructions when I act as below. For instance,	Y/N	N	%
When I use gestures	Yes	95	95.0
	No	5	5.0
When I use words that match with gestures	Yes	97	97.0
	No	3	3.0
When I use words and simple prepositional phrases	Yes	92	92.0
	No	8	8.0
When I give single commands	Yes	90	90.0
	No	10	10.0
When I give double commands	Yes	79	79.0
	No	21	21.0

Table 8: Children following directions.

Also, 97% of the children use different voices to express themselves: 93% use signs, 85% gestures and physical actions, and 66% use certain words for certain things (Table 9).

My child tells me what he/she feels and wants. For instance,	Y/N	N	%
He/she uses different voices to express himself/ herself	Yes	97	97.0
	No	3	3.0
Points out the things he/she wants	Yes	93	93.0
	No	7	7.0
He/she makes gestures	Yes	85	85.0
	No	15	15.0
He/she conducts physical actions	Yes	85	85.0
	No	15	15.0
Makes certain voices for certain things	Yes	80	80.0
	No	20	20.0
Uses certain words for certain things	Yes	66	66.0
	No	34	34.0
Speaks with prepositional phrases	Yes	38	38.0
	No	62	62.0
Speaks by sentences	Yes	32	32.0
	No	68	68.0

Table 9: Child's expression of feelings and wishes.

85% of the children say the names of their family members, 64% say the names of animals, 61% say the names of toys, 60% say the names of food, 54% say the names of daily routines and parts of the body, 43% say the names of clothes (Table 10).

My child can speak out words. For instance,	Y/N	N	%

Names of family members	Yes	85	85.0
	No	15	15.0
Animals	Yes	64	64.0
	No	36	36.0
Food	Yes	60	60.0
	No	40	40.0
Toys	Yes	61	61.0
	No	39	39.0
Daily routines	Yes	54	54.0
	No	46	46.0
Body parts	Yes	54	54.0
	No	46	46.0
Clothes	Yes	43	43.0
	No	57	57.0

Table 10: Words child can say.

82% of the parents stated that the child's speech was understood by those living in the same household, 51% by other family members, 32% by those responsible for the care of the child, 20% by those who knew the child and 11% by those who did not know the child at all (Table 11).

The persons below can understand the speech of my child…	**G/S**	**N**	**%**
Family members living in same household	Generally	82	82.0
	Sometimes	18	18.0
Other family members	Generally	51	51.0
	Sometimes	49	49.0
People who take care of child	Generally	32	32.0
	Sometimes	68	68.0
Acquaintances	Generally	20	20.0
	Sometimes	80	80.0
People who do not know him/her	Generally	11	11.0
	Sometimes	89	89.0

Table 11: People who understand the speech of child.

In addition, */b/* (84%), */d/* (84%) and */m/* (83%) phonemes were most correctly pronounced by the children (Table 12).

My child pronounces these voices correctly (Turkish Phonemes)	**Y/N**	**N**	**%**
/b/	Yes	84	84.0
	No	16	16.0
/c/	Yes	63	63.0
	No	37	37.0
/ç/	Yes	61	61.0
	No	39	39.0
/d/	Yes	84	84.0
	No	16	16.0
/f/	Yes	60	60.0
	No	40	40.0
/g/	Yes	62	62.0
	No	38	38.0
/h/	Yes	60	60.0
	No	40	40.0
/j/	Yes	44	44.0
	No	56	56.0
/k/	Yes	51	51.0
	No	49	49.0
/l/	Yes	55	55.0
	No	45	45.0
/m/	Yes	83	83.0
	No	17	17.0
/n/	Yes	79	79.0
	No	21	21.0
/p/	Yes	63	63.0
	No	37	37.0
/r/	Yes	24	24.0
	No	76	76.0
/s/	Yes	43	43.0
	No	57	57.0
/ş/	Yes	45	45.0
	No	55	55.0
/t/	Yes	63	63.0
	No	37	37.0
/v/	Yes	58	58.0
	No	42	42.0
/y/	Yes	69	69.0
	No	31	31.0
/z/	Yes	40	40.0

	No	60	60.0

Table 12: Voices pronounced correctly by child.

The relationship between the pronunciations of the phonemes and the variables

Children's gender and */t/* voice pronunciation was related ($p<0.05$). */t/* voice can be pronounced by 63 children, of whom 74% are boys and 25.4% are girls. Among the 37 children who cannot pronounce it, 19% are boys and 18% are girls. There was no relationship between the gender of the children and the pronunciation of the other voices mentioned in the table ($p>0.05$). The ages of children and their ability/inability to pronounce */ç/*, */d/* and */n/* were related ($p<0.05$). 16% of children are able to pronounce */ç/* in the range of 3.0-4.6 yrs and 45% in the range of 4.6-6.0 yrs. 23% of children are able to pronounce */d/* in the range of 3.0-4.6 yrs, 61% in the age of 4.6-6.0 yrs. 22% of children are able to pronounce */n/* in the range of 3.0-4.6 yrs, 57% of them in the age of 4.6-6.0 yrs. The ages of children and their ability/inability to pronounce other voices had no relations ($p>0.05$). The relationship between children's */b/* voice pronunciation and the time spent by the child at home with the siblings was found to be moderate at 0.401.

The relationship between the time spent by the children at home with the mother and the ability to pronounce the voice */c/* is 0.463, the ability to pronounce the voice */ç/* is 0.416, the ability to pronounce the voice */d/* is 0.462, the ability to pronounce the voice */j/* is 0.402, the ability to pronounce the voice */r/* is 0.510 and the ability to pronounce the voice */s/* is 0.449 – all are moderate. The relationship between the time the child spends watching TV at the weekends and the ability to pronounce the voice */f/* is 0.391, and the ability to pronounce the voice */ş/* is 0.412 and the ability to pronounce the voice */m/* is 0.404 – all are moderate.

The relationship between the time spent by the child at home with the siblings and the ability to pronounce the voice */h/* is 0.373, the ability to pronounce the voice */k/* is 0.423, the ability to pronounce the voice */l/* is 0.518, the ability to pronounce the voice */n/* is 0.406, and the ability to pronounce the voice */p/* is 0.481 – all are moderate. The relationship between the time spent by the children at home with the father and the ability to pronounce the voice */t/* is 0.419 and the ability to pronounce the voice */v/* is 0.424 – both are moderate.

Conclusion

Language development is a complex process that begins with the birth. Although there are basic elements that are determined in the language development process, they may vary according to the child. Factors such as psychosocial development, biological development, social communication development, neurological development, and intelligence are influential in the development process. The language itself is examined in two parts. Receptive language is the perception and interpretation of what is said by the listener. On the other hand, expressive language is produced by the speaker to convey his/her feelings and thoughts. In the process of language development, these two factors need to develop in harmony with age. Gender variable plays an important role in language development. Girls' vocabulary is larger than boys [9,10].

In our study, 66% of the children who participated in the survey were boys and 34% were girls. According to this data, gender can be considered a risk factor for delayed speech.

Age variation in language and speech development influences other factors in the child's development as well as language development. In a study, it was stated that chronological age and language development were directly proportional [11]. Considering the age range of children participating in our study, 35% are between the ages of 3 and 4 yrs 6 months and 65% are between the ages of 4 yrs 6 months and 6 yrs. The majority of the children participating in the study are over the age of 4 yrs.

Pre-school period is a period when child development is at a rapid level. Language development is very important before literacy activities are started. The ability of the child to express himself /herself properly, to speak properly, to correct speech disorders is supported by activities in pre-school education [12]. 76% of the children who participated in the school had pre-school education, whereas 24% did not have. The number of children who received pre-school education is higher than the number who did not. Pre-school language training activities in speech therapy help to correct speech impairment.

The language development and acquisition process that start in the family environment continues with the factors such as television, computer, technological devices, friends, environment, school and social life relations [13]. The multiplicity of foreign cartoons and their translations have a negative effect on the conversation. 74% of the children who participated in this study said that their favorite program on TV was cartoons; 17% said children's programs and 9% said movies. According to this data, we can say that the cartoons have a role in speech delay. According to a study [14], if the number of the individuals in a family is low, the interest that the parents will show to their children and the time they will spare for their children will be much higher. The number of siblings is also effective on language development. According to the advocated view, the care that the child receives and the quality of time have more impact than the number of siblings. The level of parental education affects the quality of the time spent with the child. Parents with a high educational level are able to create positively influential environments for children's language acquisition and expressive language development [6,11,15] by finding positive behaviors in the development of the child. The basic stages of language are similar, but the social environment and social interaction are important factors in the speed of language acquisition. Healthy communication between the mother and the child affects the language development process positively, especially with the parents in the family [16]. It is also shown that the quality time spent with the father is a factor in language development [17].

Some researchers [18] investigated the effects of parental education on children's language development and reported that maternal love affects the speed of voice production. It is also evident from the study of our work that when parents take care of children with delayed speech; 96% of them smile, 89% speak with their parents when they speak, 89% invite parents to play games and 58% speak with their parents using voices and words and waiting for their turn to speak.

When we look at the data in our study, we can say that the duration of television watching is one of the important reasons for speech delay. Studies on the subject indicate that the length of time spent watching television and using computer leads to a lack of verbal communication [19].

The characteristics of children's family structures lead to changes in the level of children's learning from TV and their level of influence. According to some studies, children in developed countries watch TV at least 3 h and 38 mins every day [20]. This result is consistent with our research result. Children spend 2.79 h at weekends, 2.34 h on weekdays watching TV and 0.94 h on computers or tablets. A computer or tablet, which is common in almost every household, appears to reduce the time children spend on TV; however, the time children spend on a screen does not seem to change at all. General impacts of television on children are learning about gender roles, relationships with the opposite sex, parent-child relationships, violence tendency, reading, thinking, success, creativity, self-perception and language development. As it can be seen, these impacts can be positive or negative. Among the impacts that negatively affect language development in children who watch television are the lack or delay of reading habits, an increase in the tendency for violence, difficulty in social relations, and distractibility [21]. In our study, it was also found that there was a moderate correlation between the times spent watching TV during weekends and pronunciation of some phonemes (*/f/*, */ş/*, */m/*). The increasing use of erroneous and long-lasting technology (computer, tablet, etc.) in recent years constructs the basis for speech delay in early childhood. Especially important is the effective use of speech between the ages 0 and 3, which is the most critical period for language and speech development, by increasing educational verbal communication in the home environment and by keeping children away from intense visual stimuli as much as possible.

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