

ORIGINAL ARTICLE

Determination the Needs of the Parents Having Children with Cochlear Implants During Transition to Pre-school Institutions

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Objective: Exploring the needs of the parents of children with cochlear implants during transition to pre-school institutions. The effects of variables such as the gender, chronological age of the child, duration of the using hearing aid before implantation, age of the implantation, duration of the using of cochlear implant, age at which child began attending rehabilitation center, age and educational state of the parents, socioeconomic level of the family, participation of the parents to the educational program, present of hearing impairment individuals in family are also considered.

Materials and Methods: 130 parents who have children with cochlear implant with ages ranging from 3 to 6 participated in this study. "The Scale Parental Information Needs in Transition to Kindergarten" was used to determine the parents' needs.

Results: It was found out that the families need all of the information related to transition to pre-school institutions. Except the educational state of the mother, the socioeconomic level of the family, the gender of the child and the participation of the child's father to the educational program, it was found out that the other demographic factors do not lead to any significant differences in the needs ($p < 0.05$).

Conclusion: These findings could be explained by the fact of inefficiency of parents' education in regard to solution of parent's needs. Preparing the children and families together and researching of the effectiveness of the services for resolving the needs of them during transition are equally important.

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Introduction

It is well established that the value of early years in the child's education is very important. During these early years personal, social, emotional and physical development of the child can be reached by the right planned and systematic pre-school education ^[1]. The transition to pre-school institutions presents a major change for both children and families. Children during this period could not be considered alone. For successful transition child's family must be included in this process. Supporting parents and their child is very important for achieving positive results ^[2].

A cochlear implant is a small, complex electronic device that can help to provide a sense of sound to someone who is profoundly deaf or hard of hearing. The purpose of cochlear implants is to help deaf individuals to develop their speech when they have been unable to do so through conventional prosthetics ^[3]. Research findings have shown that after early cochlear implantation and starting the process of appropriate rehabilitation development of children's language skills is more quickly and level of their speech intelligibility is better ^[4,5].

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Children with cochlear implants supported by parents and specialists show improvement related to their self-confidence and communication skills ^[6]. After implantation the performance of children depends on physiological and environmental factors ^[7]. Thus, children with cochlear implants attend special schools for children with hearing impairment or mainstream education with various support services ^[8]. The transitions between early intervention and preschool services, and later preschool and kindergarten, are emotional for all parents as they watch their little ones grow. If a disability such as hearing loss is added, these emotions are magnified. Issues associated with the disability intertwined with the responsibility of making the right choices for their children's future often results in a time of uncertainty that is exacerbated by an education process that can seem unwelcoming ^[9].

During the first five years of life, the number and complexity of transitions experienced by young children with disabilities and their families are numerous and complex. These mandated transition experiences have been documented to be stressful, inefficient, and problematic for children with disabilities and their families ^[10]. The transition from early intervention to preschool is usually characterized by the change of family-centered services to the child-centered services ^[11]. Thus, the needs of families are ignored. In the transition to preschool, most families are learning new vocabulary and procedures relevant to their child's situation. In this process, it is important to be sensitive to parents' need for information that is fully and clearly presented^[12, 13].

Parents may experience less anxiety when they are given information about the period and available support services ^[14]. Edson ^[13] indicated that kindergarten is the first step to elementary education, and that is the reason why parents ask many questions about kindergarten education. Parents need information about school and program choices available for their children, how they can establish contact with kindergartens, legal rights in this process, kindergarten rules and expectations ^[15, 16]. Studies on this subject emphasized that families wish to

participate in the transition period, need support from a specialist and more information about transition program ^[17]. According to the results obtained from the parents of disabled children, it was found that they need information about developmental characteristics of preschoolers, kindergarten curriculum and timetable and community services after early intervention program ^[15, 18, 19].

Successful transitions are those that meet the needs of both the child and the family ^[20]. In Turkey, following diagnosis children with disabilities, go through a series of educational levels such as early education, preschool and primary and their families are faced with decisions about transition at each level. These problems, starting with the difficulties in selecting appropriate educational arrangements, reach out to lack of knowledge about legal rights ^[21].

In our country cochlear implantation in children is applied in many centers since 1987 ^[22]. As a result of this application, children with cochlear implants need different educational and training opportunities from other children with hearing impairment ^[23]. For this reason, the aim of the study is to determine the needs of the parents of children with cochlear implants during transition to pre-school institutions. The effects of different variables on the needs of the parents such as gender of the child, the chronological age of the child, the period of the child's using hearing aid before cochlear implantation, the age at which children underwent cochlear implantation, the period of the child's use of cochlear implant, the age at which children began education, the period of the child's education, the age and educational state of the child's parents, the socioeconomic level of the family, taking professional consultation by the parents about their child's development, the participation of the parents to the educational program and taking psychological support in the child's educational setting, the present of hearing impairment individuals in family are also considered during the evaluation. Besides, results will be compared with the findings which were taken in study with parents having children with hearing impairment in transition to kindergarten in Turkey that has been done by the Akçamete, Kargin and Baydık ^[21].

Materials and Methods

Subjects

The study had been approved by Institutional Review Board' decision. The decision's number is LUT 09/85-15. The study period was from July 2009 until March 2010.

All children and their parents enrolled in the study were selected taking into consideration the inclusion criteria. The children of the parents participated in the study were between the ages of 3 and 6 years (63 girls (% 48.5) and 67 boys (% 51.5). The children had profound hearing loss, had at least one year regular experience with unilateral cochlear implant and they

had no other disability apart from hearing loss. By the start of the study, children had not began any pre-school educational institution.

The participants were 130 parents of children with unilateral cochlear implants. However, one child's father died, so total number of the fathers participated in the study was 129. All parents had given written informed consent. Families must be willing to participate in this study.

Participants were members of cochlear implant program run by Hacettepe University. Demographic characteristics of the children with cochlear implants are presented in Table 1.

Table 1. Demographic characteristics of the children with cochlear implants

Variable	Level	Number (n)	Percentage (%)
Age	3-4 years (33-48 months)	31	23.8
	4-5 years (49-60 months)	37	28.5
	5-6 years (61-78 months)	62	47.7
	TOTAL	130	100.0
Age at which child's hearing loss was detected	0-1 year (0-12 months)	93	71.5
	1-3 years (13-36 months)	37	28.5
	TOTAL	130	100.0
Age at which child's hearing loss was diagnosed	0-1 year (0-12 months)	79	60.8
	1-3 years (13-36 months)	51	39.2
	TOTAL	130	100.0
Age at which child was undergo cochlear implantation	before 3 years	88	67.7
	after 3 years	42	32.3
	TOTAL	130	100.0
Using hearing aid before cochlear implantation	Yes	124	95.4
	No	6	4.6
	TOTAL	130	100.0
Duration of using hearing aid before cochlear implantation	0-6 months	36	29.0
	7-12 months	55	44.4
	13 months and over	33	26.6
	TOTAL	124	100.0
Duration of using cochlear implant	at least 1 year (12 moths)	9	6.9
	1-3 years (13-36 months)	104	80.0
	3 years and over	17	13.1
	TOTAL	130	100.0
Using cochlear implant regularly	No	3	2.3
	Yes	127	97.7
	TOTAL	130	100.0

Status of child’s attending rehabilitation center, the age at which child began attending rehabilitation center, the duration of the child’s attending of rehabilitation center and type of training which was given there for children with cochlear implants are presented in Table 2. Also, demographic characteristics of the children’s parents and their participation in training which was given by rehabilitation centers are presented in Tables 3 and 4.

Instrument

An information form was used to gather data about parents and their children (Appendix 1). To determine the information needs of the parents "The Scale of Parental Information Needs in Transition to Kindergarten" done by Akçamete, Kargın and Baydık [21] in 2004 was used (Appendix 2). The scale consists of 24 statements and has three response alternatives to each statement: Yes, I am not Sure and No. The scale was delivered to the parents by interview, mail or e-mail. After reading the statements parents were needed to mark the response which reflects their view. During the interview with illiterate mothers and fathers researches marked the responses according to choices of participants. According to the points of the scale ‘Yes’ is 3 points, ‘I am not Sure’ is 2 points and

‘No’ is 1 point. The lowest score which can be obtained is 24 and the highest score is 72. If the score obtained from the scale is raising the parents’ information needs are also increasing.

Statistical analysis

Data was analyzed using SPSS-10 (SPSS Inc., Chicago, IL). Parental responses to the statements of "The Scale of Parental Information Needs in Transition to Kindergarten" were analyzed by using arithmetical means and percentages. Furthermore, Mann Whitney U Test was used to determine if the level of parental needs changed according to the presence of hearing impairment individuals in family, gender of the child, age at which child underwent cochlear implantation, age at which child began attending rehabilitation center, taking professional consultation by the parents about their child’s development, the participation of the parents to the educational program and taking psychological support in the child’s rehabilitation center. Furthermore, Kruskal-Wallis H Test was used to determine if the level of parental needs changed according to the age and educational state of the child’s parents, socioeconomic level of the family, chronological age of the child, duration of the child’s using hearing aid

Table 2. Information about attending rehabilitation centers by the cochlear implanted children

Variable	Level	Number (n)	Percentage (%)
Status of child’s attending rehabilitation center	No	4	3.1
	Yes	126	96.9
	TOTAL	130	100.0
Age at which child began attending rehabilitation center	0-3 years (0-36 months)	117	92.9
	3 year and over	9	7.1
	TOTAL	126	100.0
Duration of the child’s attending of rehabilitation center	Less than 1 year	9	7.1
	1-3 years (13-36 months)	70	55.6
	3 years and over	47	37.3
	TOTAL	126	100.0
Type of training	Individual	39	31.0
	Group	87	69.0
	TOTAL	126	100.0

Table 3. Demographic characteristics of the parents

Variable	Level	Number (n)	Percentage (%)
Age of mothers	25 years and younger	24	18.5
	26-30 years	60	46.2
	31-35 years	28	21.5
	36 years and over	18	13.8
Educational status of mothers	Illiterate	3	2.3
	Primary school	71	54.6
	Secondary school	16	12.3
	High school	27	20.8
	Higher education	13	10.0
	TOTAL	130	100.0
Age of fathers	25 years and younger	1	0.8
	26-30 years	39	30.2
	31-35 years	38	29.5
	36 years and over	51	39.5
	TOTAL	129	100.0
Educational status of fathers	Illiterate	2	1.6
	Primary school	28	21.7
	Secondary school	15	11.6
	High school	47	36.4
	Higher education	37	28.7
	TOTAL	129	100.0
Socioeconomic level of the family	Less than 500 TL	31	23.8
	500-1000 TL	53	40.8
	1000-2000 TL	32	24.6
	2000 TL and over	14	10.8
	TOTAL	130	100.0
Present of hearing impairment individuals in family apart from child with cochlear implant	Yes	16	12.3
	No	114	87.7
	TOTAL	130	100.00

before cochlear implantation, duration of the child's use of cochlear implant, duration of the child's attending of rehabilitation center. After Kruskal-Wallis Test for the double-comparison correction was done. Significance level alpha was taken 0.05.

Results

Parental needs in transition to kindergarten

Total score obtained from "The Scale of Parental Information Needs in Transition to Kindergarten" was analyzed to determine the parents' information needs

in transition to kindergarten. As shown by the scores in Figure 1, 34 parents received the highest (72 points) and 2 parents received the lowest scores (24 points). The scores of the rest (94 parents) seemed to be high that imply their information needs in transition to kindergarten can be identified as high. Arithmetical means and percentile values of the collected data were also analyzed to determine the parental needs in transition to kindergarten. Table 5 shows the rates and percentile values of the needs for the transition to kindergarten expressed by parents.

Table 4. Information about parents' participation in training which was given by rehabilitation centers

Variable	Level	Number (n)	Percentage (%)
Taking professional consultation by the parents about their child's development	No	27	20.8
	Yes	103	79.2
	TOTAL	130	100.0
Participation of the mother to the educational program in the child's rehabilitation center	No	61	46.9
	Individual	44	33.8
	Group	2	1.5
	Both (individual+group)	23	17.7
	TOTAL	130	100.0
Participation of the father to the educational program in the child's rehabilitation center	No	93	72.1
	Individual	27	20.9
	Both (individual+group)	9	7.0
	TOTAL	129	100.0
Taking psychological support by the mother in the child's rehabilitation center	No	99	76.2
	Individual	25	19.2
	Both (individual+group)	6	4.6
	TOTAL	130	100.0
Taking psychological support by the father in the child's rehabilitation center	No	117	90.7
	Individual	10	7.8
	Both (individual+group)	2	1.6
	TOTAL	129	100.0

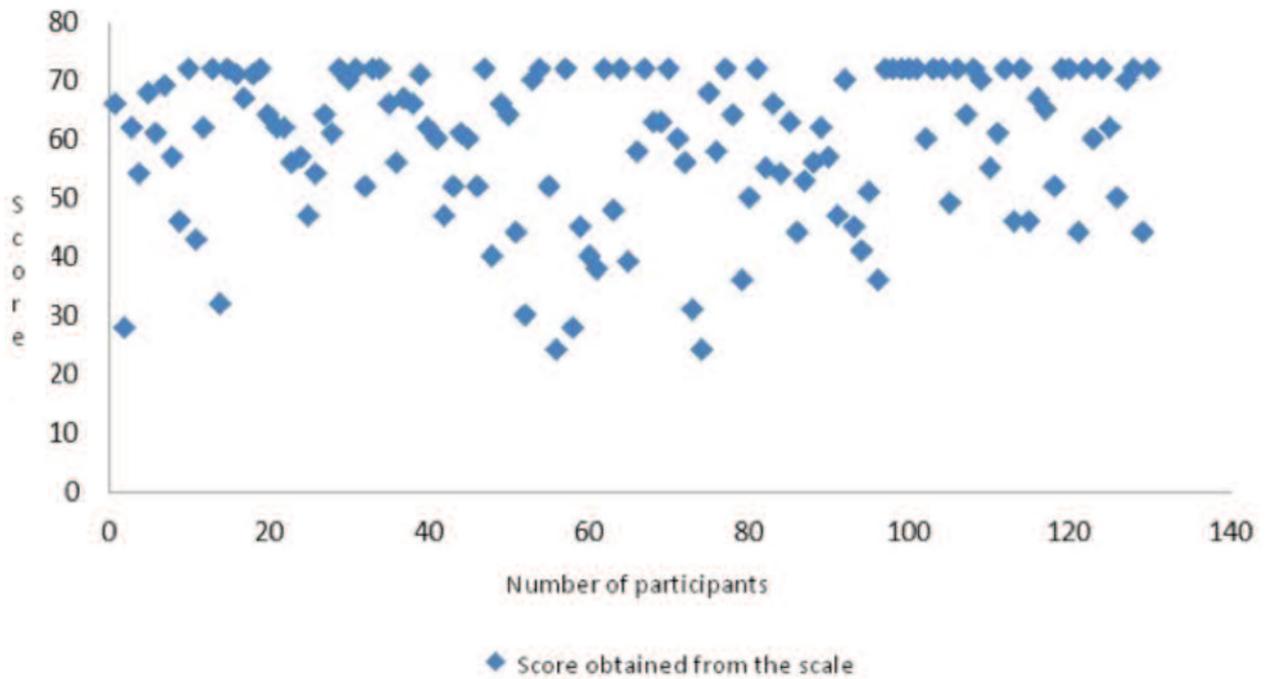


Figure 1. The distribution of scores obtained from the scale with number of participants.

Table 5. Item mean scores and distribution of responses according to choices for the scale of parental needs in transition to kindergarten

Item	M	Yes		I am not sure		No	
		n	%	n	%	n	%
1. I need information regarding how well the kindergarten will meet the needs of my child.	2.61	99	76.2	11	8.5	20	
2. I need information on the developmental characteristics of other children at age of kindergarten.	2.47	90	69.2	11	8.5	29	22.3
3. I need to know what my child will be taught.	2.56	101	77.7	1	0.8	28	21.5
4. I want to know if my child's developmental level and skill appropriate for kindergarten.	2.51	95	73.1	6	4.6	29	22.3
5. I need information about the similarities and differences between kindergarten and preschool.	2.47	89	68.5	13	10.0	28	21.5
6. I need information on the rules that my child and I should observe.	2.25	78	60.0	7	5.4	45	34.6
7. I need to know what the kindergarten teacher and administrators would expect from me and my child.	2.52	96	73.8	5	3.8	29	22.3
8. I need information about where my child could be evaluated to determine if she/he will attend kindergarten.	2.46	93	71.5	4	3.1	33	25.4
9. I need information about kindergartens that my child can attend.	2.38	87	66.9	5	3.8	38	29.2
10. I need to know how I can establish contact with kindergartens available for my child and visit them to observe.	2.40	88	67.7	6	4.6	36	27.7
11. I need information about what I should be watching for during my observation to choose the kindergarten for my child.	2.54	97	74.6	6	4.6	27	20.8
12. I need to know how I can help my child to get him/her ready for kindergarten.	2.52	96	73.8	5	3.8	29	22.3
13. I need to know what information I should provide to kindergarten administration during my child's enrollment.	2.31	84	64.6	2	1.5	44	33.8
14. I need information about my legal rights regarding my child's acceptance to kindergarten.	2.64	106	81.5	1	0.8	23	17.7
15. I need information about places that I could apply in case that my child would not be accepted by kindergarten.	2.61	104	80.0	1	0.8	25	19.2
16. I need to know how I can inform the kindergarten teacher about the disability and characteristics of my child.	2.40	89	68.5	4	3.1	37	28.5
17. I need to know how I can communicate my expectations from him/her to the kindergarten teacher.	2.42	90	69.2	4	3.1	36	27.7
18. I need know what I should do to introduce my child to the other children in the class.	2.52	96	73.8	6	4.6	28	21.5
19. I need to know what I should do to provide cooperation between the special education teacher and kindergarten teacher.	2.48	94	72.3	5	3.8	31	23.8
20. I need to know if my child would need special education while she is attending a kindergarten.	2.16	73	56.2	5	3.8	52	40.0
21. I need to know how I can give information about my child to other parents.	2.34	85	65.4	4	3.1	41	31.5
22. I need to know how I can meet with parents with similar circumstances to share our experiences.	2.45	90	69.2	8	6.2	32	24.6
23. I need to know how I can solve my child's problems in cooperation with the kindergarten teachers.	2.65	106	81.5	3	2.3	21	16.2
24. I need information about the persons and places in or out of school from which I can get information when my child experiences a problem.	2.62	104	80.0	3	2.3	23	17.7

Considering the responses to items, the top percentage level was 81.5% and bottom level was 56.2%. Thus, it is possible to suggest that parents need information about all areas for their children's transition to kindergarten. The item for which parents expressed the highest need level at 81.5% were the items of I need information about my legal rights regarding my child's acceptance to kindergarten and I need to know how I can solve my child's problems in cooperation with the kindergarten teachers. These items are followed by the items of I need information about places that I could apply in case that my child would not be accepted by kindergarten and I need information about the persons and places in or out of school from which I can get information when my child experiences a problem with a level of 80.0%. The parents selected the item I need to know if my child would need special education while she is attending a kindergarten at the lowest percentage of 56.2%.

Consideration of Parental Needs in Transition with Respect to Different Variables

Variables that may have an effect on parental needs in transition to kindergarten were considered in this study. The variables were determined according to the age and educational status of the child's parents, present of hearing impairment individuals in family, socioeconomic level of the family, gender, chronological age of child and , age at detection and diagnosis of hearing loss, age at cochlear implantation,

duration of the child's using hearing aid and cochlear implant, regular use of cochlear implant, rehabilitation center attendance, age of rehabilitation program onset, taking professional consultation by the parents about their child's development, duration of the child's attending of rehabilitation program, type of training which are taken by the child, participation of the parents to the educational program and taking psychological support in the child's rehabilitation center.

Analysis is made based on Kruskal Wallis H test whether the age of the parents and the educational status of the mothers and fathers had caused a significant difference about the requirements of the parents in transition process to kindergarten. According to the analysis conducted, it is noticed that the mothers' and fathers' ages had not caused a significant difference (Table 6). On the other hand, the educational status of the mothers had caused a significant difference about the requirements of the parents in transition process to kindergarten ($p < 0.05$). Because of number of illiterate mothers ($n=3$) in the study was insufficient for making comparison, they were excluded from the analysis. According to the results obtained from the Dunn's Z-test significant difference was found between the mothers who graduated from primary school and mothers who graduated from university ($p=0.001$, $p < 0.05$). It's meaning that the need level of mothers who graduated from primary school was higher than the need level of

Table 6. Comparison of parental need levels for the age of parents

Variable	Level	Number (n)	Mean rank	χ^2	p
Age of mothers	25 years and younger	24	66.94	1.239	0.744
	26-30 years	60	63.36		
	31-35 years	28	63.43		
	36 years and over	18	73.94		
Age of fathers	25 years and younger	1	26.00	2.084	0.555
	26-30 years	39	69.59		
	31-35 years	38	65.55		
	36 years and over	51	61.84		

* $p < 0.05$

mothers who graduated from university. However, the educational status of the fathers had not caused a significant difference ($p > 0.05$) (Table 7).

In addition, analysis is made based on Mann Whitney U test whether the presence of hearing impairment individuals in family had caused a significant difference about the requirements of the parents in transition process to kindergarten. These results also show that the present of hearing impairment individuals in family had not caused a significant difference ($p > 0.05$) (Table 8).

According to the analysis which was made based on Kruskal Wallis H test the socioeconomic level of the family was determined to be effective on the

requirements of the parents in transition process to kindergarten ($p < 0.05$) (Table 9). Results obtained from the Dunn's Z-test indicated that there was significant difference between the families who have income level less than 250 euro and families who have income level 1000 euro and over ($p = 0.001$, $p < 0.05$). Thus, the level of needs of families whose income were than 250 euro was higher than the others whom had 1000 euro and more. There was a significant difference between the families who have income level between 500-1000 euro and families who have income level 1000 euro and over ($p = 0.007$, $p < 0.05$). In other words, the needs of families who had 500-1000 euro were higher than the families who had 1000 euro and higher income levels.

Table 7. Comparison of parental need levels for the educational status of the parents

Variable	Level	Number (n)	Mean rank	χ^2	p
Educational status of the mothers	Primary	71	70.06		
	Secondary	16	64.13		
	High school	27	62.41		
	Higher	13	34.04		
Educational status of the fathers	Primary	28	73.45		
	Secondary	15	66.70		
	High school	47	60.33		
	Higher	37	60.42		

* $p < 0.05$

Table 8. Comparison of parental need levels for the present of hearing impairment individuals in family

Present of hearing impairment individuals in family apart from child with cochlear implant	n	Mean rank	U	p
Yes	16	68.72	860.500	0.713
No	114	65.05		

* $p < 0.05$

Table 9. Comparison of parental need levels for the socioeconomic level of the family

Socioeconomic level of the family	n	Mean rank	χ^2	p
Less than 250 euro	31	80.26	14.235	0.003*
250-500 euro	53	61.48		
500-1000 euro	32	70.39		
1000 euro and over	14	36.86		

* $p < 0.05$

Also an analysis is made based on Mann Whitney U test whether the gender of the child had caused a significant difference about the requirements of the parents in transition process to kindergarten. The gender of the child had caused a significant difference on the requirements of the parents in transition process to kindergarten ($p < 0.05$). The need level of families with sons was higher than the need level of families with daughters (Table 10).

According to the results obtained from the Kruskal Wallis H test the chronological age of the child, the age at which child's hearing loss was detected, diagnosed and the duration of the child's using hearing aid before cochlear implantation and child's use of cochlear implant did not caused a significant difference about

the requirements of the parents in transition process to kindergarten ($p > 0.05$) (Table 11).

Furthermore an analysis was made based on Mann Whitney U test whether the age at which child had undergone cochlear implantation caused a significant difference about the requirements of the parents in transition process to kindergarten. According to the results the age at which child had undergone cochlear implantation did not cause a significant difference ($p > 0.05$) (Table 12).

Besides, an analysis was made based on Mann Whitney U test whether the age at which child had begun to attend rehabilitation center caused a significant difference about the requirements of the parents in transition process to kindergarten.

Table 10. Comparison of parental need levels for the gender of the child

Gender of the child	n	Mean rank	U	p
Girl	63	58.52	1671	0.039*
Boy	67	72.06		

* $p < 0.05$

Table 11. Comparison of parental need levels for the demographic characteristics of the children with cochlear implants

Variable	Level	Number (n)	Mean rank	χ^2	p
Age	3-4 years (33-48 months)	31	62.29	0.822	0.663
	4-5 years (49-60 months)	37	70.01		
	5-6 years (61-78 months)	62	64.41		
Age at which child's hearing loss was detected	0-1 year (0-12 months)	93	62.85	1.639	0.200
	1-3 years (13-36 months)	37	72.15		
Age at which child's hearing loss was diagnosed	0-1 year (0-12 months)	79	67.56	0.614	0.433
	1-3 years (13-36 months)	51	62.30		
Duration of using hearing aid before cochlear implantation	0-6 months	36	67.17	2.347	0.309
	7-12 months	55	57.01		
	13 months and over	33	66.56		
Duration of using cochlear implant	at least 1 year (12 months)	9	77.44	4.156	0.125
	1-3 years (13-36 months)	104	62.17		
	3 years and over	17	79.56		

* $p < 0.05$

Table 12. Comparison of parental need levels for the age at which child underwent cochlear implantation

Age at which child underwent cochlear implantation	n	Mean rank	U	p
Before 3 years	88	64.65	1773.500	0.708
After 3 years	42	67.27		

* $p < 0.05$

According to the analysis conducted, it is noticed that the age at which child had begun to attend rehabilitation center did not cause a significant difference ($p > 0.05$) (Table 13). In addition, an analysis is made based on Kruskal Wallis H test whether the duration of the child's attending of rehabilitation center and the type of training which are taken by the child in the rehabilitation center had caused a significant difference about the requirements of the parents in transition process to kindergarten. These results show that the duration of the child's attending of rehabilitation center and the type of training which are taken by the child in the rehabilitation center had not caused a significant difference ($p > 0.05$) (Table 14).

Analysis was made based on Mann Whitney U test whether the parents' participation in training which

was given by rehabilitation centers had caused a significant difference about the requirements of the parents in transition process to kindergarten. According to the analysis conducted, it is noticed that the taking professional consultation by the parents about their child's development, the participation of the mothers to the educational program in the child's rehabilitation center, the taking psychological support by the mothers in the child's rehabilitation center, the taking psychological support by the fathers in the child's rehabilitation center had not caused a significant difference ($p > 0.05$). At the same time, it is noticed that the participation of the fathers to the educational program in the child's rehabilitation center had caused a significant difference on the requirements of the parents in transition process to kindergarten ($p <$

Table 13. Comparison of parental need levels for the age at which child began to attend rehabilitation center

Age at which child began to attend rehabilitation center	n	Mean rank	U	p
0-3 Years (0-36 months)	117	63.46	522.000	0.966
3 Years and over	9	64.00		

* $p < 0.05$

Table 14. Comparison of parental need levels for the duration of the child's attending of rehabilitation center and the type of training which are taken by the child in the rehabilitation center

Variable	Level	Number (n)	Mean rank	χ^2	p
Duration of the child's attending of rehabilitation center	Less than 1 year	9	66.44	0.801	0.670
	1-3 years (13-36 months)	70	60.92		
	3 years and over	47	66.78		
Type of training	Individual	39	61.85	0.118	0.731
	Group	87	64.24		

* $p < 0.05$

0.05) (Table 15). The father's level of needs who do not participate in the educational program was higher than the ones who participate actively in the educational program which take place in the child's rehabilitation center.

Discussion

The results of this study indicate that generally the parents' responses to the statements of the scale were changed between 'yes' and 'I am not sure'. The scores of the most families seemed to be high that imply their information needs in transition to kindergarten can be identified as high. The families stated that they need the information (between percentages of 81.5% to 56.2% on particular items in the questionnaire) related to transition to pre-school institutions and it is mentioned in the scale. These findings could be explained by the fact of inefficiency of parents' education in regard to solution of parent's needs during transition to pre-school institutions which take place in educational programs for the children with hearing impairment in Turkey. This situation is related to the content and application of the family education programs.

In our country children with cochlear implants in early childhood are followed by the educational programs offered by educational specialists in the cochlear

implant centers or rehabilitation centers. During this period the focus of educational programs is narrowly on the support of the child's development, which leads to adopting an approach targeting the correction of the disability caused by hearing loss. The content of the family education programs does not contain special elements to meet the needs of the families during transition to pre-school institutions.

Thus the needs of children and their parents are ignored. However, meeting the various needs of parents in the transition to pre-school institutions plays an important role in the successful transition of the children.

In Turkey other researchers have indicated that families having disabled children need the additional information related to the different parts of their children's lives [24-26].

The findings of this study are supported by some professionals from other countries in the literature. Hanson et al. [27] and Rous et al. [28] reported that parents of the children with special needs during the entering preschool need information about the transition process and its components. In addition, most of the parents pointed the importance of information sharing with the specialists during the transition process.

Table 15. Comparison of parental need levels for the parents' participation in training which was given by rehabilitation centers

Variable	Level	Number (n)	Mean rank	χ ²	p
Taking professional consultation by the parents about their child's development	No	27	71.24	1235.500	0.370
	Yes	103	64.00		
Participation of the mothers to the educational program in the child's rehabilitation center	No	61	70.80	1781.000	0.128
	Yes	69	60.81		
Participation of the fathers to the educational program in the child's rehabilitation center	No	93	69.53	1253.000	0.026*
	Yes	36	53.31		
Taking psychological support by the mothers in the child's rehabilitation center	No	99	67.45	1.131	0.288
	Yes	31	59.27		
Taking psychological support by the fathers in the child's rehabilitation center	No	117	64.84	0.024	0.876
	Yes	12	66.58		

* p < 0.05

Besides, a study aimed to determine the needs of the families having pre-school hearing impaired children during transition to kindergarten has already showed the same results ^[21]. Both studies reported the item of I need information about my legal rights regarding my child's acceptance to kindergarten as the item with the highest need level at 81.5%. This item is followed by the item of I need information about the persons and places in or out of school from which I can get information when my child experiences a problem with a level of 80%.

In addition, this finding is similar to that which had been found by Rous et al. ^[28]. Rous et al. ^[28] have reported that families during the transition to the pre-school institutions need information about their legal rights, strategies and activities that will help them for preparing for this period.

Janus et al. ^[29] found that families of the children with special needs during the transition period have not enough knowledge about their legal rights. This finding supports the result of our study revealing that parents expressed the need level (80%) for the item of I need information about places that I could apply in case that my child would not be accepted by kindergarten. Similarly Hanline ^[19] in the survey of 92 parents of children with disabilities have reported that families expressed a desire for knowledge about the related services and legal regulations. Pianta and Kraft-Sayre ^[2] also have found that families of the children during the transition to preschool need information about their and teachers' roles in this process. It is similar with the item of I need to know how I can solve my child's problems in cooperation with the kindergarten teachers with a level of 81.5% and the item of I need information about the persons and places in or out of school from which I can get information when my child experiences a problem with a level of 80%. In our country this finding must be an indicator of the lack of attention to the issues such as child's and parents' legal rights, how to establish contact with the personal working in the kindergarten, where and how be educated children in preschool age.

Waxler et al. ^[30] pointed those parents of the children during the transition to the pre-school institutions need information about developmental characteristics of preschoolers. Similarly Yücel et al. ^[31] found that

21.5% of the parents with hearing impaired children have requested more information about the growth and development of their child. 64% of them stated that they were not sure if their knowledge was adequate or not. This finding supports the result of our study revealing that parents expressed the need level (69.2 %) for the item of I need information on the developmental characteristics of other children at age of kindergarten. These results might be explained by making comparison which is done by the parents of cochlear implanted children who benefit from mainstream education.

In another study, Fowler et al. ^[32] during the examination of the teacher's and child's roles in the period of transition to the kindergarten and moreover to the primary school have reported components of the successful transition. Furthermore identifying skills which are required by the kindergarten they found that parents need support during the teaching these skills to their children and promote for active participation in this process. It is similar with the item of I want to know if my child's developmental level and skill are appropriate for kindergarten with a level of 73.1 % and the item of I need to know how I can help my child to get him/her ready for kindergarten with a level of 73.8 %. This finding is similar with the finding from the study which was done by Sucuoglu ^[24]. Sucuoglu found that 84% of the fathers with disabled children need information about how to teach them some skills. Rous et al. ^[16] have reported that parents of the children with special needs during the transition to the mainstream education need information about educational options for their children. It is similar with the item of I need information about kindergartens that my child can attend with a level of 66.9 %.

Similarly, Hanson et al. ^[27] reported about a higher level of parents' participation in the transition process if the families know about program options available for their children with disabilities who started pre-school education. These findings must be an indicator of the lack of attention to the issues such as the educational options that present for children with disabilities, activities at home that would assist parents in preparing their child for kindergarten. Whereas issues related to the features of cochlear implanted children, development of the child's skills at home and

other information needs related to the child's education should be taken into account.

In another study, Yücel et al. [31] have reported that 66.2% of the parents with hearing impaired children were in need of assistance while explaining their children's hearing problem to others. Sola and Diken [26] found that mothers who have at-risk infants and toddlers with premature/low birth weight for development delays were in need of information while explaining their children's problem to others. In our study it is similar with the item of (I need to know what information I should provide to kindergarten administration during my child's enrollment) with a level of 64.6 %, the item of (I need to know how I can inform the kindergarten teacher about the disability and characteristics of my child) with a level of 68.5 %, the item of (I need know what I should do to introduce my child to the other children in the class) with a level of 73.8% and the item of (I need to know how I can give information about my child to other parents) with a level of 65.4 % . These findings can be explained by the society's and educational staff's need of information in the fields of special needs and features of cochlear implanted children in the society and during educational process.

Most and Zaidman-Zait [33] found that mothers of cochlear implant candidates or current users need to meet parents of other implanted children to achieve their informational and emotional needs. Bailey and Simeonsson [34] found that mothers of handicapped infants need to meet with other parents of handicapped children. In our study, this finding is similar with the item of (I need to know how I can meet with parents with similar circumstances to share our experiences) with a level of 69.2 %. The request to meet other parents has been described in the literature as an "emotion-focused" coping strategy [35]. Parents often seek out their peers in order to validate and manage their feelings toward the child's condition. The need to meet with other parents corresponds with the literature suggesting that peer support leads to a feeling of well-being [36-38]. Several researchers have also mentioned about the parents' desire to meet with other families in the same situation and it is defined as coping strategy. Parents need to confirm and control their own feelings and by this way they feel more comfortable so their feelings of

loneliness are reducing [35]. These findings indicate that in order to meet the needs of parents of implanted children, it is crucial to provide the emotional support for them. Families should have an opportunity to meet other parents of cochlear implanted children, for both informational and emotional needs.

Fenlon [39] found that parents of disabled children starting kindergarten need detailed information about special education that is available for their child. In our study, it is similar with the item of (I need to know if my child would need special education while she is attending a kindergarten) with a level of 56.2%. These findings could be explained by the necessity of the special education for supporting child's development and providing family counseling.

In our study, the effects of different variables on the needs of the parents of children with cochlear implants during transition to pre-school institutions were explored. These variables were the gender of the child, chronological age of the child, duration of the child's using hearing aid before cochlear implantation, age at which child underwent cochlear implantation, duration of the child's use of cochlear implant, the age at which child began attending rehabilitation center, duration of the child's attending of rehabilitation center, age and educational state of the child's parents, socioeconomic level of the family, taking professional consultation by the parents about their child's development, participation of the parents to the educational program and taking psychological support in the child's rehabilitation center, present of hearing impairment individuals in family are also considered during the evaluation. Except the educational state of the mother, the socioeconomic level of the family, the gender of the child and the participation of the child's father to the educational program, it was found out that the other demographic factors do not lead to any significant differences in the needs of the parents. Akçamete et al. [21] have reported that needs of the families with hearing impaired children in transition to kindergarten depended only from the paternal age and this variable had caused a significant difference on the requirements while other variables had not caused a significant difference. In our study, the needs of the parents having cochlear implanted children during the transition to the pre-school institutions were affected

by another and greater number of variables. It was found out that the needs of the parents having cochlear implanted children during the transition to the pre-school institutions were not affected by the variables related to the child such as the chronological age of the child, age at which child's hearing loss was detected, age at which child's hearing loss was diagnosed, age at which child was undergo cochlear implantation, duration of the child's using hearing aid before cochlear implantation, duration of the child's using of cochlear implant, age at which child began attending rehabilitation center, duration of the child's attending of the rehabilitation center and type of services is taken by child in the rehabilitation center.

If we summarize the results of our study concerning to the variables such as duration of the child's attending of the rehabilitation center, age at which child began attending rehabilitation center and duration of the child's using of cochlear implant number of participations in these groups must be increased.

Sola and Diken ^[26] found that the child's age had not caused a significant difference on the requirements of the mothers who have at-risk infants and toddlers with premature/low birth weight for development delays. Akçamete et al. ^[21] have reported that the child's age, age the child started education had not caused a significant difference on the requirements of the families with hearing impaired children in transition to kindergarten. Akçamete and Kargın ^[25] have reported that the child's age had not caused a significant difference on the requirements of the mothers with hearing impaired children. . In our study, the child's gender had caused a significant difference on the requirements of the parents having cochlear implanted children during transition to pre-school institutions. At the same time, other researchers have indicated that the child's gender had not caused significant difference on the needs of families ^[21, 25, 26].

We found that the needs of families with sons appeared to be higher than the needs of families with daughters. This trend could be explained by the evidence of parents' concern for the future of their children. The boys' families are concerned about their children more than the girls' family because of impossibility of the boys' child bearing. Therefore, it is important to meet

the information needs of the boys' parents during their transition to the pre-school education.

It was found out that the needs of the parents having cochlear implanted children during the transition to the pre-school institutions were not affected by the variables related to the families such as the age of the child's parents, educational state of the child's father, presence of hearing impairment individuals in family, taking professional consultation by the parents about their child's development, taking psychological support by the parents in the child's rehabilitation center, participation of the mother to the educational program in the child's rehabilitation center. The results of our study concerning the variables such as age of the child's father, taking psychological support by the father in the child's rehabilitation center, presence of hearing impairment individuals in family apart from child with cochlear implant number of participations in these groups must be increased.

Several authors have pointed out the effect of other hearing impaired individual's presence in family and mother and fathers ages, educational status on their needs. Yucel et al. ^[31] found that the number of hearing impaired individuals in the family had not caused significant difference on the needs of families having children with hearing impairment. According to Sola and Diken ^[26] the mother's age had not caused a significant difference on the requirements of the mothers who have at-risk infants and toddlers with premature/low birth weight for development delays. Akçamete et al. ^[21] have reported that the educational state of the child's fathers, mothers had not caused a significant difference on the requirements of the families with hearing impaired children in transition to kindergarten. In addition, although there was no statistically significant difference between needs of mothers from different ages, it could be suggested that the needs of parents increased as the age decreased, when arithmetical means were considered. When fathers' age was considered, the needs of younger fathers appeared to be higher.

Also, Akçamete and Kargın ^[25] have reported that the mother's age had not caused a significant difference on the requirements of the mothers with hearing impaired children.

It was found out that the needs of the parents having cochlear implanted children during the transition to the pre-school institutions were affected by the variables related to the families such as the educational state of the child's mother, socioeconomic level of the family and participation of the father to the educational program in the child's rehabilitation center. Sola and Diken^[26] found that the educational state of the child's mother had not caused a significant difference on the requirements of the mothers who have at-risk infants and toddlers with premature/low birth weight for development delays. In addition, although there was no statistically significant difference between needs of mothers from educational states, it could be suggested that the needs' level of mothers who graduated from the university were higher than the needs' level of mothers from other groups, when mean scores were considered. Akçamete, Kargin^[25] and Akçamete et al.^[21] have reported that the educational state of the child's mother had not caused a significant difference on the requirements of the mothers with hearing impaired children. It was noticed that the total score of parents who graduated from the primary school were higher than the total score of parents who were graduated from the secondary education and university. Besides, the monthly income had not caused a significant difference on the requirements of the mothers who have at-risk infants and toddlers with premature/low birth weight for development delays^[26]. In our study, when mothers' educational state was considered, the needs of mothers who graduated from the primary schools appeared to be higher than the needs of mothers who graduated from the university. This trend could be explained by the fact that level of knowledge of mothers who graduated from the primary schools are more limited than the level of knowledge of mothers who graduated from the university.

In this study, when monthly income was taken into account, the needs' level of families who have the monthly income less than 250 euro (the lowest income level) appeared to be higher than the needs' level of families who have the monthly income 1000 euro and over. In addition to that the needs' level of families who have the monthly income between 500-1000 euro appeared to be higher than the needs' level of families

who have the monthly income 2000 TL and over (the highest income level). This trend could be explained by the fact that families with lower income levels experience difficulties of achieving additional support services which providing for money. Therefore, the needs' of families with lower income levels appeared to be higher.

When participation of the father to the educational program in the child's rehabilitation center was considered, the needs of fathers who participated in the educational programs appeared to be higher than the needs of fathers who did not participate in the educational programs. This trend could be explained by the fact that level of knowledge of fathers who participated in the educational programs are more limited than the level of knowledge of fathers who did not participate in the educational programs. In addition, it is also possible to suggest that the fathers' knowledge related to child's education is more limited.

In addition to these major findings of this study, several limitations should also be considered. First of all, this study is limited by the number of participants which was 130. To generalize the results a similar study must be done with a greater number of parents. In addition to this, the scale for part of participants was delivered by mail and e-mail. Therefore, some of the data was collected through mail and e-mail. Though this method is recognized in the literature, interview of participants from the point of gathering more valid and reliable data contains less limitations. Therefore, data gathering in the further researches must be done by interviewing of parents for their more valid and reliable manner of the needs' expression.

Conclusion

The results of this study demonstrate that the families stated that they need the information (between percentages of 81.5% to 56.2% on particular items in the questionnaire) related to transition to pre-school institutions and it is mentioned in the scale. These findings could be explained by the fact of inefficiency of parents' education in regard to solution of parent's needs during transition to pre-school institutions which take place in educational programs for the children with hearing impairment in Turkey. According to these results; preparing the children and

their families together for transition to pre-school institutions seem useful. This can be performed by implementing of cooperation between the special education teacher and kindergarten teacher, organization of training seminars, informational meetings for parents, parent support groups, home visits, phone calls, notes, information meeting for staff of pre-school institutions, visiting to the pre-school institutions by parents and their children before starting them, using of individualized transition plans which was developed by specialists and other activities. In addition, the preparing informative book for the parents having children with cochlear implants passing to pre-school institutions will lead to a much better outcome.

Along with these, researching of the effectiveness of the services for resolving the needs of parents and their children during transition to pre-school institutions is necessary.

Besides, a study aimed to determine the needs of the families having pre-school hearing impaired children during transition to kindergarten has already showed the same results.

Except the educational state of the mother, the socioeconomic level of the family, the gender of the child and the participation of the child's father to the educational program, it was found out that the other demographic factors do not lead to any significant differences in the needs of the parents. Probability of affecting the needs of parents having children with cochlear implants during transition to pre-school institutions by the various variables must be investigated again by the increasing number of parents who participated in the study.

Meeting the needs of the family and child with cochlear implant by effective use of the informative book for the parents having children with cochlear implants passing to pre-school institutions and other our suggestions make this process more smooth and can help families and their children to adapt and participate in the pre-school education program.

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