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Effect of Hearing Impaired on Children's Aggressive Behavior

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Abstract The objective of this study is to determine to the effects of hearing impairment on children's aggressive behavior the aggressiveness level of hearing impaired children and to discuss the drivers within the framework of the obtained data. In the study conducted on 81 students between the ages of 10 and 17 going to the public Seyhan School for the children with hearing impairment in the province of Adana in the south of Turkey, we used "Buss-Perry Aggressiveness Questionnaire (BPAQ)" and the "General Information Form" drawn up by the researcher in order to obtain some demographic information about the students included within the study group. As a result of the analysis of data; it was determined that the total aggressiveness scores did not differ by sex, but that the male students had higher scores than girls in sub-dimensions of aggressiveness, that age did not make any difference on aggressiveness, the children receiving special education got meaningful scores in sub-dimensions of verbal and consequential aggressiveness and hostility, and that the children communicating verbally got higher scores in total aggressiveness and all sub-dimensions, and the existence of another impaired individual in the family made difference in scores achieved in the sub-dimensions of total aggressiveness, physical and verbal aggressiveness. Furthermore, the data reveals that the parent's attitudes did not make any difference on the aggressiveness scores of hearing impaired children.

Keywords Hearing impaired children, Agression, Children

1. Introduction

Children with hearing impaired are to some extent deprived from the skills of understanding what is spoken and expressing what they think, depending on the degree of hear loss. Many studies demonstrated that an impaired child confronting all these physical insufficiencies and disability have to deal with many problems. The deprivation of communication becomes influential on the development and emotional harmony of child with hearing impaired and isolation starts as the child grows. In this case, children with hearing impairment may increase their tendency to aggression [1, 2].

When we examine the studies on this subject, children with hearing impairment have more behavior problems (emotional- relational- hiperactivity- peer relationship) than their hearing peers [3-8] and considering the language skills of these children, hearing disability negative impact on behavior problems can be clearly seen [6, 9].

The problems of children with hearing impaired generally emerge when they start to learn the words during pre-school period. Because, they can become aggressive when they cannot express themselves and may be more stubborn than their hearing and speaking peers. Isolation of a child because of his/her impairment influences his/her social environment and his/her attitude towards the environment, and the child may be extremely angry, bad tempered and aggressive, since he/she has difficulty in expressing his/her wishes, feelings and thoughts. However, despite the insufficient communication skills of these children, some results were obtained to point out that the cause of behavioral and emotional problems is not insufficient communication skills in children with hearing impairment or difficulty, but rather, the early parent-child engagement might be the cause of these problems [6, 9-12].

Aggressiveness is a well-known concept, but it is hard to be defined and its limits are broad. Freud defines aggressiveness as directing one's destructive inclinations towards the objects in the external world, while Adler defines it as a drive stemming from the need of an individual to meet his/her own needs and which is resorted to as a result of prevention. Buss (1961) examined aggressiveness in three dimensions; physical - verbal; passive and direct-indirect. The behaviors such as pushing, pressuring, pulling, hitting, biting are the examples of physical aggressiveness. Offending or harming a person psychologically by verbal communication are the examples of verbal aggressiveness. Active aggressiveness is a goal-oriented behavior and in this form of behavior, the essential thing is to hurt another person

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and make him/her suffer. On the other hand, in passive aggressiveness, instead of actively harming the counter person, one prevents him/her from realizing his/her goal. Direct aggressiveness is a kind of aggressiveness occurring due to sending directly to the counter person the harmful stimulators which might provoke of agitate the counter person, whereas in indirect aggressiveness, harmful stimulators are sent to the counter person in indirect ways [14, 15].

During the development process of individuals, the life experiences during childhood and adolescence have an effective role on the development of personality. Any situations of miscellaneous insufficiency, disability and traumatic incidents experienced in these periods lead to significant interruptions in psycho-social development of individuals. Hearing impairment not only affects the individual directly, but also affects the environment and the family, gaining a social aspect. Hearing, language and speaking are the fundamental elements of communication and they are the most important components which a human uses within the socialization process, being a social being. The individual thus tries to find his/her place within the social structure [16, 17]. For all these causes, the aim of this study is to determine to the effects of hearing impairment on children's aggressive behavior and to discuss the drivers within the framework of the obtained data.

2. Research Method

2.1. Participant in the Study

The universe of this study is constituted by 81 students between the ages of 10 and 17 going to the public Seyhan school for children with hearing impairment in the province of Adana in the south of Turkey. While creating the universe of research, we selected the students according to whether they had any disability other than hearing impairment, this impiarment of hearing has been medically diagnose and moderate (26 dB-30dB) and moderate to severe (51dB-70dB) has been the degree of hearing loss, whether they come from fragmented families and are capable of individually evaluating the questionnaires to be implemented (Table 1).

2.2. Procedures

For this study, first necessary permissions were granted. The researcher contacted with students, teachers and their families before the application, and observed the students during this period. Then subjected to research involving children collected demographic information is processed in the General Information Form. The collection of data in the research phase is found to be suitable for children using their preferred methods of communication will be informed about how to mark in the data collection tool and every child has mark the form itself with using a pen in empty study room. During mark the forms was not given time limit but children easily marked in forms in 20 minutes. In this process, explanation has been made to them when needed. Eventually, all the data collected were combined.

In the normality analysis of the data obtained to investigate to relation between variables determined for children in the sample group and aggressive behavior, data demostrated non-parametric distribution, and Mann-Whitney U Test was applied to bineary groups, while Kruskal-Wallis Test was used for more than two groups.

2.3. Material

In the research, we used "Buss-Perry Aggressiveness Questionnaire (BPAQ)" and "General Information Form" created for the purpose of obtaining some demographic information about the group investigated.

Table 1. Demographic information about sample

Variables	*Characteristics*	*N*	*%*
Gander	Female	32	39,51
	Male	49	60,49
Age	10	8	9,87
	11	7	8,64
	12	12	14,81
	13	8	9,87
	14	14	17,28
	15	13	16,05
	16	12	14,81
	17	7	8,64
Special Education Status	I didn't receive	44	54,32
	I receive	37	45,68
Use of the device	Not use	19	23,45
	Use	62	76,55
Use of the device time	Not use	18	22,22
	1-2 year	9	11,11
	2-4 year	33	40,74
	5 year and above	21	25,93
Preferred mode of communication	Sing language	23	28,39
	Oral	2	2,47
	Total	56	69,14
Hearing impaired or other disabled individuals in the family is there?	None	38	46,91
	One or more of the	31	38,27
	Father and mother	4	7,94
	The whole family	8	9,88

Buss-Perry Aggressiveness Questionnaire

The Aggressiveness Questionnaire was developed by Buss and Perry (1992) for the purpose of measuring aggressiveness. BPAQ is among the most frequently used aggressiveness questionnaires in global literature and it is a kind of 5 point likert scale. With an end to investigate the psycho-metric properties of BPAQ, a great deal of researches were conducted by use of various methods and most of them revealed findings supporting the structure of authentic form [18].

The questionnaire which is based on the self-assessment technique, consisted of totally 34 items. It has five sub-dimensions as physical, verbal, indirect aggressiveness as well as anger and hostility. BPAQ is easy to apply to both children and individuals having difficulty in understanding the complicated verbal statements, in that it is short and simple to read. When the total score of BPAQ is determined to be high, the scores which the individual got in sub-dimensions should be investigated. The items no 8, 10, 11, 17, 23, 24, 25 and 27 measure the verbal aggressiveness sub-dimension, the items no 3, 7, 12, 16, 19, 22, 29 and 32 measure the anger sub-dimension, the items no 2, 5, 9, 21, 28, 31 and 33 measure the hostility sub-dimension, and finally the items no 13, 14, 15, 18, 30 and 34 measure the indirect aggressiveness sub-dimension [19-24].

Adaptation of questionnaire to Turkish, the validation and reliability studies were performed by Can (2002). According to the findings, the test-repeat test reliability and internal consistency of the questionnaire and sub-questionnaires are satisfying and there are meaningful correlations among each one of sub-questionnaires. The internal consistence coefficients obtained by Buss and Perry (1992) in their authentic studies are as follows: physical aggressiveness 0.85, verbal aggressiveness 0.72, anger 0.83, hostility 0.77 and total score is 0.89 [18-20, 22, 25].

In addition, while the study was being conducted, reliability analysis was made on the aggressiveness questionnaire and it was determined to be reliable by a ratio of 71.87% (α=0.98) according to the factor analysis.

3. Results and Discussion

The total aggressiveness scores of children do not differ by sex ($t = -1.093$; $p = 0{,}278$). The data belonging to the sub-dimensions in Table 2 indicate that; only the verbal aggressiveness scores of children ($t = -2.182$; $p = 0.032$) differed by sex, while the aggressiveness scores of males (15.71) were higher than the aggressiveness scores of females (14.28). It was determined that the scores in other sub-dimensions (physical and indirect aggressiveness, anger and hostility) did not differ by sex.

That the male children are more aggressive than the female children are pointed out by the findings of both this and other studies [26-29].

As a matter of fact, aggressiveness is an innate drive and is programmed to ensure sustaining of life. Some studies make one think that testosterone hormone may be influential in aggressive behaviors. That aggressiveness diminish with the growing age supports this thought, but there are no certain data supporting such view. Looking from another perspective, we see that in almost all cultures male children are supported in their more aggressive behaviors by social and cultural mechanisms. When we look into the aggressiveness mechanism, we see that it emerges in cases of prevention. Hearing impairment or insufficiency is a serious preventing condition. The correlation between the communication skills and aggressiveness of children with hearing impairment are frequently reflected to the findings and discussions in recent years. However, despite the insufficient communication skills of these children, some results were obtained to point out that the cause of behavioral and emotional problems is not insufficient communication skills in children with hearing impairment or difficulty, but rather, the early parent-child engagement might be the cause of these problems [10, 11, 30].

While the total aggressiveness scores of children differ statistically depending on whether they received special education ($t = -3.262$; $p = 0.002$), the total aggressiveness scores of children who received special education (101.88) were determined to be higher than those who did not (90.93) (Table 3). When the data belonging to sub-dimensions were reviewed, it was seen that the scores in verbal aggressiveness dimension differed by whether the student received education or not ($t = -2.758$; $P = 0.007$) and that the children receiving education (15.81) got higher scores than those who did not (13.96) in verbal aggressiveness. We come across such difference also in hostility sub-dimension ($t = -2.245$; $p=0.028$) and the scores of children receiving special education (19.35) were higher than those who did not (17.90). Another sub-dimension where we found statistically meaningful difference is the indirect aggressiveness ($t=-4.013$; $p=0.000$). In this dimension, the scores of children receiving education (18.13) were higher than the children who did not. It was determined that the scores in anger and physical aggressiveness sub-dimensions did not differ by whether receiving education or not. The aggressive behaviors and sex findings in literature present us similar results [31-40].

In such prevention cases, early diagnosis, appropriate instrumentation and early education is crucial. By doing so, the speaking disability of hearing impaired children will be eliminated to a large extent. Some studies demonstrate that the hearing impaired children receiving education after 5 years old are less successful and also the hearing impaired children experience many more emotional and behavioral problems, including aggressiveness, than their normal hearing peers. When the language abilities of hearing impaired children is taken into consideration, the negative effect of hearing loss over the behaviors are clearly seen and this reveals the importance of starting to education at an early age [3, 4, 8, 9].

However, although early special education supports the hearing impaired children in terms of hearing and language; there are also study findings suggesting that such children are more inclined to experience behavioral problems such as aggressiveness due to insufficiencies in their communication skills and that having received special education did not have any effect on the aggressive behaviors and executive functions of school-age children [41, 42].

The aggressiveness data as regards with the case of using device have been presented in Table 4. When we look at the table, we see that the total aggressiveness scores did not differ between the children who used device and who did not ($t = -0.604$; $p = 0.547$). Despite the fact that the situation was

the same for the scores in sub-dimensions, the physical aggressiveness scores of children who did not use device (24.42) were higher than those use used (23.79). In contradiction with this, in sub-dimensions of the verbal aggressiveness, anger, hostility and indirect aggressiveness, the scores of children using device (VAS = 15.27, AS = 3.52; IS = 18.98, IAS = 17.34), were higher than those children who did not use device.

In fact, we thought that the hearing impaired children using device would hear better and therefore would express themselves more efficiently. Nevertheless, contrary to the expectations, the use of device did not make any difference. Some studies in literature back up the finding obtained in this study [43-45].

The total aggressiveness scores of children at different ages statistically differ by the age (F = 1,030; p = 0,418). As can be seen in Table 5, the total aggressiveness scores by the age groups show that the highest scores belong to the children at the age group of 13 years old (107). The scores in all dimensions of aggressiveness do not differ by the age, while the children at different age groups received high scores in each dimension. The highest score in physical aggressiveness sub-dimension belongs to the children at the age group of 16 (25.42), while the highest score in verbal aggressiveness belongs to the group of 13 years old (16.37). The highest score in anger sub-dimension belongs to the children at the age group of 11 (4.28), while the highest score in verbal aggressiveness belongs to the group of 17 years old (DP=18.57; DSP=18.57). When we look at our findings related to age and aggressiveness, we can see that the results are relatively similar to each other in close age groups. Such children, while experiencing similar problems with their peers during the adolescence, also have to struggle with the issues brought by impairment. In hearing impaired children, with the increase of age, the emotional and behavioral issues are also expected to rise. In other studies, came across similar findings supporting the findings of our study [9, 26, 46, 47].

Table 2. Gander and aggression

Gander	N	%	Aggression Dimensions M ±S.E. Mean (min-max)					Total Aggression M ±S.E. Mean (min-max)
			Indrect aggression	Hostility	Anger	Verbal aggression	Physical aggression	
Female	32	39,51	16,91±0,62 (6,00-23,00)	18,59±0,57 (12,00-25,00)	3,34±0,20 (0,00-5,00)	14,28±0,56 (5,00-20,00)	23,47±0,98 (8,00-36,00)	95,75±3,06 (44,00-128,00)
Male	49	60,49	17,41±0,38 (12,00-23,00)	18,98±0,40 (13,00-25,00)	3,57±0,15 (1,00-5,00)	15,71±0,40 (9,00-25,00)	24,24±0,79 (12,00-36,00)	99,41±2,04 (68,00-125,00)
			t= -0,833; p= 0,407	t= -0,619; p= 0,583	t= -0,979; p= 0,330	t= -2,182; p= 0,032*	t= -0,622; p= 0,536	t= -1,093;p= 0,278

Table 3. Special education status and aggression

Special education status	N	%	Aggression Dimensions M ±S.E. Mean (min-max)					Total Aggression M ±S.E. Mean (min-max)
			Indrect aggression	Hostility	Anger	Verbal aggression	Physical aggression	
I didn't receive	29	35,80	15,55±0,65 (6,00-21,00)	17,90±0,64 (12,00-25,00)	3,55±0,17 (2,00-5,00)	13,96±0,59 (5,00-20,00)	22,55±1,13 (8,00-36,00)	90,93±3,36 (44,00-125,00)
I received	52	64,20	18,13±0,32 (12,00-23,00)	19,35±0,36 (13,00-25,00)	3,48±0,16 (0,00-5,00)	15,81±0,38 (7,00-25,00)	24,71±0,71 (12,00-36,00)	101,88±1,74 (68,00-128,00)
			t= -4,013; p= 0,000*	t= -2,245; p= 0,028*	t= 0,616; p= 0,540	t= -2,758; p= 0,007*	t= -1,780; p= 0,079	t= -3,262;p= 0,002*

Table 4. Use the device status and aggression

Use the device status	N	%	Aggression Dimensions M ±S.E. Mean (min-max)					Total Aggression M ±S.E. Mean (min-max)
			Indrect aggression	Hostility	Anger	Verbal aggression	Physical aggression	
Not use	19	23,45	16,79±1,03 (6,00-23,00)	18,31±0,91 (12,00-25,00)	3,37±0,27 (1,00-5,00)	14,74±0,78 (5,00-20,00)	24,42±1,64 (8,00-36,00)	96,68±5,05 (44,00-128,00)
Use	62	76,55	17,34±0,31 (9,00-21,00)	18,98±0,33 (14,00-25,00)	3,52±0,13 (0,00-5,00)	15,27±0,37 (7,00-25,00)	23,79±0,64 (12,00-36,00)	98,38±1,67 (63,00-125,00)
			t= -0,931; p= 0,355	t= -0,997; p= 0,322	t= -0,506; p= 0,614	t= -0,762; p= 0,448	t= -0,221; p= 0,826	t= -0,604;p= 0,547

Table 5. Use the device duration status and aggression

Use the device duration status	N	%	Aggression Dimensions M ±S.E. Mean (min-max)					Total Aggression M ±S.E. Mean (min-max)
			Indrect aggression	Hostility	Anger	Verbal aggression	Physical aggression	
Not use	18	22,22	16,78±1,09 (6,00-23,00)	18,39±0,96 (12,00-25,00)	3,33±0,28 (1,00-5,00)	14,78±0,83 (5,00-20,00)	24,44±1,73 (8,00-36,00)	96,89±5,33 (44,00-128,00)
1-2 years	9	11,11	17,33±0,62 (14,00-21,00)	18,44±0,73 (15,00-22,00)	3,67±0,29 (2,00-5,00)	16,89±1,19 (13,00-25,00)	24,11±1,11 (17,00-28,00)	100,55±2,60 (90,00-109,00)
1-4 years	33	40,74	17,27±0,46 (9,00-20,00)	18,82±0,52 (14,00-25,00)	3,54±0,19 (0,00-5,00)	14,97±0,43 (9,00-20,00)	23,91±1,02 (12,00-36,00)	97,79±2,62 (63,00-125,00)
5 years and above	21	25,93	17,43±0,52 (14,00-21,00)	19,38±0,48 (14,00-24,00)	3,43±0,24 (1,00-5,00)	15,00±0,67 (7,00-20,00)	23,48±0,90 (15,00-30,00)	98,05±2,60 (74,00-118,00)
			F=0,304; p= 0,822	F=0,502; p= 0,682	F=0,247; p= 0,864	F=1,034; p= 0,382	F=0,045; p= 0,987	F= 0,185;p= 0,906

Table 6. Age and aggression

Age	N	%	Aggression Dimensions M ±S.E. Mean (min-max)					Total Aggression M ±S.E. Mean (min-max)
			Indrect aggression	Hostility	Anger	Verbal aggression	Physical aggression	
10	8	9,87	17,75±1,23 (14,00-23,00)	17,75±3,49 (14,00-23,00)	3,25±0,41 (2,00-5,00)	15,37±1,36 (9,00-20,00)	23,87±2,32 (15,00-33,00)	99,38±6,73 (74,00-123,00)
11	7	8,64	15,14±1,72 (6,00-21,00)	15,14±4,56 (6,00-21,00)	4,28±0,36 (3,00-5,00)	13,71±1,51 (5,00-16,00)	22,00±2,68 (8,00-30,00)	89,43±8,50 (44,00-107,00)
12	12	14,81	15,58±1,12 (9,00-20,00)	15,58±3,89 (9,00-20,00)	3,08±0,29 (1,00-4,00)	13,92±0,81 (9,00-18,00)	22,33±1,86 (12,00-33,00)	91,42±5,79 (55,00-118,00)
13	8	9,87	17,87±0,64 (15,00-21,00)	17,87±1,81 (15,00-21,00)	3,87±0,29 (3,00-5,00)	16,37±1,47 (13,00-25,00)	24,25±2,57 (17,00-36,00)	107,00±8,81 (82,00-161,00)
14	14	17,28	17,43±0,72 (13,00-23,00)	17,43±2,71 (13,00-23,00)	3,14±0,42 (0,00-5,00)	15,50±0,63 (11,00-20,00)	23,28±1,34 (12,00-31,00)	98,50±3,96 (67,00-123,00)
15	13	16,05	17,54±0,64 (12,00-20,00)	17,54±2,29 (12,00-20,00)	3,92±0,21 (3,00-5,00)	14,69±0,66 (11,00-19,00)	24,00±0,52 (21,00-27,00)	97,77±2,40 (81,00-110,00)
16	12	14,81	17,75±0,66 (14,00-21,00)	17,75±2,30 (14,00-21,00)	3,25±0,25 (2,00-5,00)	15,58±,070 (10,00-18,00)	25,42±1,69 (14,00-36,00)	100,75±3,85 (78,00-122,00)
17	7	8,64	18,57±0,89 (14,00-21,00)	18,57±2,37 (14,00-21,00)	3,43±0,30 (2,00-4,00)	16,00±1,02 (11,00-19,00)	25,14±1,20 (19,00-29,00)	103,00±4,01 (84,00-113,00)
			F=1,379; p= 0,227	F=1,497; p= 0,182	F=1,587; p= 0,153	F=0,906; p= 0,507	F=0,507; p= 0,826	F= 1,030;p= 0,418

Looking at the data in Table 6, one can understand that the duration of using device did not have any effect on total aggressiveness scores, in other words, the total aggressiveness scores did not change depending on the duration of using device (F = 0.185; p = 0.906). When we look at the device using durations, we see that the highest scores were achieved by children who used device for a duration of 1-2 years (100.55). Similar results were obtained in sub-dimensions, but the highest scores in physical aggressiveness sub-dimension were achieved by children who did not use device (24.44).

The researched carried out set forth that early diagnosis of a hearing impaired child and providing him/her with appropriate devices is extremely important for gaining ability to speak normally. If children use hearing devices at late ages, they cannot benefit from their remaining hearing capacities and the continuous and regular usage of such sevices are also crucial [34, 48, 49].

When we look at Table 7, we can see that the total aggressiveness scores of children did not differ by the method of communication (F = 0.939; p = 0.395) and the hearing impaired children preferring communication by speaking had higher aggressiveness scores (100.55). In all sub-dimensions of aggressiveness, the difference between the scores achieved in terms of the method of communication was not statistically meaningful. It was also determined that the hearing impaired children preferring to communicate through speaking got higher scores also in physical, verbal, indirect aggressiveness, anger and hostility sub-dimensions (PAS = 29.50; VAS; 18.00; IAS: 18.50;

AS = 24.50, IS=20.50).

In their studies, Sunal and Cam (2005), determined that the children communicating through sign language got high neurotic score averages (selfishness, unwillingness to share, being afraid at nights and being afraid of sleeping alone, introvert and insecure) and they pointed out to the importance of such correlation. Likewise, Stevenson et. al. (2010) indicated that the children who communicated by only sign language and did not use any verbal expression had high rate of behavioral disorders, and that the reason for this was not their using the language, but was their having low communication skills. In the light of the findings obtained as a result of this study, it is thought that the lack of efficient communication skills in children derive from failure to establish a healthy parent-child relationship, rather than the method of communicating [9, 50].

It was also ascertained that the presence of another handicapped individual in the family (hearing disability or another disability) created difference in total aggressiveness (F=3.281; p = 0.025), physical (F = 2.754; p=0.048) and verbal aggressiveness (F = 3.101; p = 0.031) (Table 8). In the table, the children who had an individual with hearing or another disability in their families made up the second group, and the other made up the first group. The same results are also seen in physical aggressiveness sub-dimension. Also in verbal aggressiveness sub-dimension, the children who had no disabled individual in their families got the lowest score (14.26) and made up the third (b) group. The children whose parents are disabled made up the first group (a) with the highest score (18.25) and the other two characters made up the second (ab) group. Again, the same table shows that whether or not there was any disabled individual within the family did not have any impact on the scores achieved in other sub-dimensions.

Review of table 9 showing whether or not the children's aggressiveness is influenced by their parent's attitudes showed that the parent's attitudes did not affect statistically neither total aggressiveness not the sub-dimensions (F = 0.502; p = 0.734). Nevertheless, the total aggressiveness scores (102.33) of children who responded as "my mother is tough to me and she always blames me when there is a problem", the scores (25.50) of children who responded as "my mother is not very caring, she only cares my fundamental needs" in sub-dimension of physical aggressiveness, and the scores of children who responded as "my mother is tough to me and she always blames me when there is a problem" were higher compared to the others. When the data related to the father's attitude was investigated (Table 10), it was determined that the children responding as "my father always listens to me and heeds my thoughts" had the highest total aggressiveness score (101.45), while in dimensions of physical, indirect aggressiveness, anger and hostility, the children responding as "my father always listens to me and heeds my thoughts" got the highest scores (PAS = 24.45; IAS = 46.65; AS = 24.00; IS = 19.55), and only the children who responded in verbal aggressiveness dimension as "my father always behaves like something bad will happen to me, he protects me and cares about me" got the highest verbal aggressiveness score (19.09).

In researches investigating the interactions between the hearing impaired children and their parents, when a child suffers hearing loss, such case affects the communication styles used by parents towards the kid seriously and usually in a negative way. It was observed that the parents of hearing impaired children used less verbal reinforcers compared to the parents with normal kids, and that they asked for opinions and proposals of their kids less often. At the same time, the parents of hearing impaired children were observed to experience more tension, difference of opinion, defend counter opinion and assert their own ideas and proposals to their children. However, some in some studies, it was observed that the communication between the hearing impaired children and their parents was not any different than that between the normal children and their parents, and that the parents developed some harmony strategies (more visual communication, etc.) with their children [6, 51-53].

Table 7. Communication method and aggression

Communication method	N	%	Aggression Dimensions M ±S.E. Mean (min-max)					Total Aggression M ±S.E. Mean (min-max)
			İndirect aggression	Hostility	Anger	Verbal aggression	Physical aggression	
Sing language	23	28,39	17,04±0,57 (12,00-23,00)	18,30±0,61 (14,00-25,00)	22,56±0,68 (16,00-30,00)	14,61±0,59 (7,00-20,00)	22,96±1,15 (12,00-36,00)	95,43±3,04 (68,00-128,00)
Oral	2	2,47	18,50±1,50 (17,00-20,00)	20,50±0,50 (20,00-21,00)	24,50±1,50 (23,00-26,00)	18,00±0,00 (18,00-18,00)	29,50±2,50 (27,00-32,00)	100,55±3,00 (108,00-114,00)
Total communication	56	69,14	17,23±0,43 (6,00-23,00)	18,98±0,41 (12,00-25,00)	22,93±0,50 (12,00-29,00)	15,27±0,41 (5,00-25,00)	24,14±0,74 (8,00-36,00)	98,53±2,15 (44,00-125,00)
			F=0,196; p= 0,823	F=0,741; p= 0,480	F=0,279; p= 0,757	F=1,189; p= 0,310	F=1,307; p= 0,277	F= 0,939;p= 0,395

Table 8. The cases of other individulal with impaired in the family and aggression

The cases of other individulal with impaired in the family	N	%	Aggression Dimensions M ±S.E. Mean (min-max)					Total Aggression M ±S.E. Mean (min-max)
			Indrect aggression	Hostility	Anger	Verbal aggression	Physical aggression	
No	38	46,91	16,23±0,53 (6,00-21,00)	18,00±0,50 (1,00-25,00)	3,37±0,17 (1,00-5,00)	14,26±0,56 b (5,00-20,00)	22,26±0,98 b (8,00-36,00)	92,66±2,88 b (44,00-125,00)
One or more siblings	31	38,27	18,00±0,46 (12,00-23,00)	19,55±0,55 (14,00-25,00)	3,61±0,22 (0,00-5,00)	15,64±0,37 ab (12,00-20,00)	25,00±0,82 a (17,00-36,00)	101,58±2,34 a (77,00-128,00)
Mother and father	4	4,94	18,75±1,03 (17,00-21,00	19,00±0,91 (17,00-21,00)	3,25±0,25 (3,00-4,00)	18,25±2,39 a (14,00-25,00)	25,75±3,37 a (17,00-32,00)	106,00±5,24 a (93,00-115,00)
Whole family	8	9,88	18,00±0,96 (14,00-23,00)	19,87±0,69 (17,00-22,00)	3,62±0,32 (2,00-5,00)	15,87±0,44 ab (14,00-18,00)	26,87±1,44 a (22,00-33,00)	105,12±3,35 a (90,00-122,00)
			F=2,647; p= 0,055	F=2,029; p= 0,117	F=2,249; p= 0,089	F=3,101; p= 0,031*	F=2,754; p= 0,048*	F= 3,281;p= 0,025*

Table 9. Mother attitude and aggression

Mother attitude	N	%	Aggression Dimensions M ±S.E. Mean (min-max)					Total Aggression M ±S.E. Mean (min-max)
			Indrect aggression	Hostility	Anger	Verbal aggression	Physical aggression	
My mother always listens to me and heeds my thougths	26	32,10	37,98	18,61±0,58 (13,00-24,00)	22,92±0,61 (12,00-28,00)	14,85±0,51 (5,00-20,00)	23,38±0,97 (8,00-33,00)	96,11±2,82 (44,00-120,00)
My mother is though to me, she always blames me when there is a problem	9	11,11	52,06	19,89±0,93 (17,00-25,00)	23,78±0,98 (19,00-27,00)	16,89±1,22 (14,00-25,00)	23,22±2,02 (14,00-32,00)	102,33±4,45 (78,00-118,00)
My mother isn't very caring, she only cares my fundamental needs	26	32,10	45,08	18,88±0,58 (12,00-25,00)	22,77±0,84 (12,00-30,00)	15,00±0,54 (14,00-36,00)	25,50±1,20 (14,00-36,00)	99,92±3,26 (57,00-128,00)
My mother always behaves like something bad will happen to me,she protects me and cares about me	17	20,99	34,44	18,53±0,83 (14,00-24,00)	22,59±0,86 (16,00-28,00)	15,35±0,76 (9,00-20,00)	23,82±1,50 (12,00-33,00)	96,70±4,20 (63,00-122,00)
My mother things I'm incompetent, I can't decide on anything without her permission	3	3,70	35,83	18,67±1,45 (16,00-21,00)	22,00±2,08 (19,00-26,00)	12,67±2,97 (7,00-17,00)	20,67±2,67 (18,00-26,00)	91,00±9,61 (79,00-110,00)
			X^2=0,709 p=0,315	F= 0,364 p= 0,833	F= 0,219 p= 0,927	F= 1,360 p= 0,256	F= 0,902 p= 0,467	F= 0,502 p= 0,734

Table 10. Father attitude and aggression

Father attitude	N	%	Aggression Dimensions M ±S.E. Mean (min-max)					Total Aggression M ±S.E. Mean (min-max)
			Indrect aggression	Hostility	Anger	Verbal aggression	Physical aggression	
My father always listens to me and heeds my thougths	20	24,69	46,65	19,55±0,65 (13,00-25,00)	24,00±0,44 (21,00-28,00)	15,55±0,41 (13,00-20,00)	24,45±0,91 (17,00-33,00)	101,45±2,16 (82,00-120,00)
My father is though to me, he always blames me when there is a problem	16	19,75	46,34	19,12±0,33 (14,00-25,00)	21,81±0,89 (16,00-29,00)	14,94±0,55 (11,00-18,00)	23,82±1,62 (12,00-36,00)	97,50±4,06 (68,00-125,00)
My father isn't very caring, he only cares my fundamental needs	18	22,22	33,47	17,44±0,71 (12,00-25,00)	21,67±1,19 (12,00-30,00)	14,00±0,84 (5,00-19,00)	23,28±1,69 (8,00-36,00)	92,44±5,01 (44,00-128,00)
My father always behaves like something bad will happen to me, he protects me and cares about me	21	25,93	38,14	19,19±0,60 (14,00-24,00)	23,67±0,51 (19,00-28,00)	16,09±0,63 (12,00-25,00)	24,43±0,92 (17,00-33,00)	100,52±2,37 (82,00-122,00)
My father things I'm incompetent, I can't decide on anything without his permission	6	7,41	40,50	18,50±1,02 (15,00-21,00)	22,67±1,91 (16,00-27,00)	14,50±2,26 (7,00-20,00)	22,83±2,92 (14,00-32,00)	95,17±9,38 (63,00-118,00)
			X^2=4,202 p=0,379	F= 1,449 p= 0,226	F= 1,895 p= 0,120	F= 1,557 p= 0,195	F= 0,319 p= 0,865	F= 1,197 p= 0,319

4. Conclusions

The objective of this study is to determine to the effects of hearing impairment on children's aggressive behavior and to discuss the drivers within the framework of the obtained data. The study was realized with 81 students at the age group between 10 and 17 and going to the public Hearing Impaired School in Adana, a south province of Turkey. While creating the universe of research, we selected the students according to whether they had any handicap other than hearing impairment, hearing impairment has been medically diagnose and moderate(26 dB-30Db) and moderate to severe(51dB-70dB) has the degree of hearing loss, whether they come from fragmented families and are capable of individually evaluating the questionnaires to be implemented.

To summarize the findings of the study; while sex was not influential over the total aggressiveness score, it made difference in verbal aggressiveness sub-dimension. The verbal aggressiveness scores of males were higher than verbal aggressiveness scores of females. It was observed that the scores in other sub- dimensions (physical and indirect aggressiveness, anger and hostility) did not differ by sex. Whether or not having received a special education creates some difference in total aggressiveness score. The total aggressiveness scores of children who received special education higher than children who did not receive special education. In addition, we see such difference also in the verbal aggressiveness, hostility and indirect aggressiveness sub-dimensions. The total aggressiveness scores and the scores in sub-dimensions differ by using device and by the duration of using device. While there is no meaningful difference between the method of communication and aggressiveness, the presence of another disabled individual within the family makes a difference. Such difference also exists in total aggressiveness scores as well physical and verbal aggressiveness sub-dimensions. The total aggressiveness scores and the scores in sub-dimensions differ by age. The total aggressiveness scores by the age groups show that the highest scores belong to the children at the age group of 13 years old. When we look into sub-dimension, the highest score in physical aggressiveness sub-dimension belongs to the children at the age group of 16, while the highest score in verbal aggressiveness belongs to the group of 13 years old. The highest score in anger sub-dimension belongs to the children at the age group of 11, while the highest score in verbal aggressiveness belongs to the group of 17 years old. Moreover, the attitudes of parents do not create any meaningful difference on aggressiveness.

In this respect; early diagnosis of hearing impairment, providing appropriate devices and starting early education are very important. In hearing impaired individuals, the insufficiency or lack of communication skills aggravates the inclination of such individuals towards aggression. Since aggressiveness is a matter hampering the social harmony of individuals, it would be beneficial to make efforts for earning them social skills towards building on communication skills. Another recommendation is that the hearing impaired children should be included within the education efforts which will help ensuring an efficient communication and interaction between them and their parents. It is because, the aggressive behaviors involve very sophisticated mental processes, including automatic control of behaviors and self-adjusting skills. The families of individuals and the other individuals near them play important role in earning these skills. The families of hearing impaired children should be supported with special allowances during the children's growing period and education process. With this study, we aimed to contribute to the accumulation of knowledge in this field.

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