

# Evaluation of 118 pupils of the Van school for the deaf

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**Objective** There are estimated 158.226 0-18-year-old hearing impaired children in Turkey. Van school for the Deaf was reviewed to ascertain of approach to those children.

**Methods** This study, was made in Van School for the Deaf and evaluated 118 hearing impaired students. Rوتين ENT examinations were performed and their private files were searched.

**Results** The percentage of consanguinity marriages was higher in respect to mean of Turkey. The percentage of using hearing aid before and after admittance to school

was very low. This is due to economical issues. In our study, hearing levels were very different and so individual education is very important.

**Conclusion** The problems of the hearing impaired children are of character which is required to be solved by the State by providing free hearing aid and early sufficient education and not left to the families' economical impossibility.

**Key words** Hearing impaired children, hearing aid, education.

## Introduction

In Turkey the earliest work in special education was carried out at the commercial school in Istanbul by its Austrian Principal Mr. Grafi (1,2). This school first began with the education of hearing impaired children. The children educated here ranged in age between 6-20 years. The education in this school was based on a sign approach. It was closed in 1919 after 30 years in service. In 1952-1953 there were three schools for the deaf one in Istanbul, one in Izmir, and one in Ankara.

The 1990 census found the ratio of the hearing impaired to total population to be 0.6%. Thus, it is estimated that there are 158.226 0-18-year-old hearing impaired children in Turkey. Of these children, those who are school age, that is, 4-18 years of age, are estimated to number 128.000.

Now, there are 44 schools for the hearing impaired in Turkey, which presently have a total

of 6.500 students. In addition, 470 students are studying in special classes, and 430 in integrated classes with hearing children. The number of the hearing impaired receiving special education is 7.400, accounting for only 5.75% of all the school age hearing impaired children in Turkey today (1).

In this study, we evaluated the hearing impaired students in Van School for the Deaf and tried to call attention to the subject.

## Material and Method

This study was made in Van School for the Deaf and evaluated 118 students. Rوتين Ear Nose Throat (ENT) examinations were performed and their private files were searched. We made audiometric, tympanometric tests and Auditory Brainstem Response (ABR) of the students. We used the committee classified the levels of hearing loss on the basis of 1964 ISO and 1969 ANSI standards, and we evaluated the levels of hearing loss (Table 1).

Table 1. The classification of the hearing impaired students.

0-20 dB	NORMAL HEARING	Hearing within normal limits. No training required.
21-35 dB	MILD HEARING LOSS	Will have difficulty hearing certain speech sounds. Should use a hearing aid and preferably sit in a front seat in class.
35-55 dB	INTERMEDIATE LEVEL OF HEARING LOSS	Will have difficulty comprehending a conversation. Should use a hearing aid and sit in a front seat in class. Needs training in hearing and speaking
56-70 dB	INTERMEDIATE ADVANCED LEVEL OF HEARING LOSS	Cannot follow a conversation without a hearing aid. Should be given both individual and group training in speaking.
71-90 dB	ADVANCED LEVEL OF HEARING LOSS	Cannot hear speech sounds. Can only hear loud noises in the environment. Needs a hearing aid, and special hearing and speaking training.
Above 91 dB	ALMOST TOTAL HEARING LOSS	Can only hear very loud sounds. Needs a hearing aid, an special hearing -speaking training.

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## Results

In our study, 27 girls and 91 boys, 118 hearing impaired children have been included. The children age range 8-18 years old and mean age was  $12.53 \pm 0.22$ . The findings concerning the child and the family was investigated (Table 2).

Table 2. The findings concerning the child and the family.

The findings	Percentage	Number of cases
Consanguinity marriages (total)	66	55.9%
One degree consanguinity	42	35.6%
Second degree consanguinity	9	7.6%
Third degree consanguinity	15	12.7%
Another hearing impaired people, in the family	35	29.7%
Meningitis	30	25.4%
Infectious disease	25	21.2%
Head trauma	4	3.4%

Birth of 109 children (92.4%) had become at home and only 9 (7.6%) in hospital. We evaluated the degree of hearing loss and classified the levels of hearing loss on the basis of 1964 ISO and 1969 ANSI standards (Table 3).

Table 3. The classification of the children according to the degree of hearing loss.

Hearing level	Number of the children	Percentage of the children
35-55 dB.	1	0.8%
56-70 dB	8	6.8%
71-90 dB	37	31.4%
Above 91 dB	72	61%

Before admittance to school, the number of the children using a hearing aid was 19, and those after admittance to school was 34 (Table 4).

Table 4. The number of using hearing aid.

	Number of the children	Percentage of the children
Before admittance to school	19	16.1%
After admittance to school	34	28.8%

We established that the number of the children using hearing aid was only 34, and had used it only in some lessons.

## Discussion

The causes of hearing impairments are considered to be genetic, acquired or unknown (3,4). Genetic hearing loss may be due to a number of chromosomal anomalies. It has been estimated that 50% of childhood sensorineural hearing impairment is due to genetic factors (4). Great majority of the genetic hearing loss are due to the consanguinity marriages (5). The percentage of the consanguinity marriages in Turkey was 23.4% in 1989 (6). But these rates are; 35.2% in Denizli School (7), 40% in Malatya School (5), 15.4% in K.Maraş School (8), 46.6% in Rize School (6), and 55.9% in Van School for the Deaf. The high rate of Van was attributed high percentage of consanguinity in this province in respect to mean of Turkey. Another result is the high percentage of meningitis, which is preventable and curable disease, as an etiologic factor in East Anatolia. These rates are; 4.8% in Denizli (7), 17% in Malatya (5), 21.6% in K. Maraş (8), and 25.4% in Van.

The use of hearing aids is regarded as one of the most imported tool in the rehabilitation of the hearing impaired towards acquisition of the spoken language (9). Generally, hearing impaired students started school-education at ages six or after (9). In our study, minimum age was 8 years old. First of all, mostly started wearing hearing aids after admittance to school. In our study, the percentage of using hearing aid before admittance to school was 16.1% and after admittance to school was 28.8%. Each rate is very low and this low rate is due to economical reasons. This hearing aid problem of the hearing impaired children must be solved by the State by providing free hearing aid.

If a child diagnosed to be hearing impaired on the basis of medical examination and audiometric tests, he will be admitted to a special educational center for training if he is under 4 years of age (1). On the other hand, if he is over 4 years of age, he will be administered various tests at a center for guidance and research run by the Ministry of Education with a view to determining the nature of his impairment. Decision will be made on the basis whether he will be educated at a school for special education or in a special class or in a integrated class at a school for normal children (1).

It is essential to start special education at an early age (1,2,9). Special education is an integral part of general education. Every child needing special education is entitled to special educational services irrespective of the kind and extend of his handicap (1). In our study, hearing levels of the children were very different and the importance of individual education has come to light.

In conclusions, if the hearing impaired child is diagnosed early and used appropriate hearing aid, he/she is able to obtain benefit from auditory input. So this hearing aid problem of the hearing impaired children must be solved by the State by providing free hearing aid. The number of schools for the Deaf are very low, therefore it must be increased and the importance of individual education must not be neglected.

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