

A study of hearing impairment in school children

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Abstract

Background: Hearing loss as less as 15 dBHL can create hearing disability in children and consequently impairment in their mental growth Aims and Objectives: To study hearing impairment in school children. **Methodology:** This was a cross-sectional study carried out in the school children during the one month period i.e. June 2017 to July 2017. There were total 437 school children were examined by the consent of their parents or care takers. The etiological cause and type of the hearing lost was found out. The collected data was arranged in the tabular form and expressed in percentages. **Result:** In our study we have seen that The overall prevalence of hearing lost in the school children was 10.07% and the majority of the patients were in the age group of 10-11 were 13.33%, followed by 9-10 were 12.86%, 8-9 were 11.29%, 11-12 -9.84%, 7-8 were 8.33%, 12-13-6.78%, 6-7 were 6.00%. The majority of the patients were Male i.e. 56.82% and Female were 43.18%. The majority of hearing lost found unilateral i.e.79.55% and Bilateral found in 20.45%. As per etiology the majority of the patients were having CSOM in 25.00%, followed by ASOM in 20.45%, Trauma -15.91%, Wax-13.64%, Sensory neural Hearing lost-11.36%, Secretary Otitis Media and Idiopathic were in 6.82%.The most common cause of hearing lost was Conductive in 75.00% , Sensory neural Hearing lost -11.36% and Mixed -13.64. **Conclusion:** It can be concluded from our study that The overall prevalence of hearing lost in the school children was 10.07% and the majority of the patients were in the age group of 10-11 were 13.33% of the patients were Male, The majority As per etiology the majority of the patients were The majority of hearing lost found having CSOM, The most common cause of hearing lost was conductive followed by Sensory neural Hearing lost. **Key Word:** hearing impairment, school children, CSOM, ASOM, Conductive deafness

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Received Date: 14/05/2018 Revised Date: 23/06/2018 Accepted Date: 12/07/2018

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DOI: <https://doi.org/10.26611/1016712>

Access this article online	
Quick Response Code:	Website: www.medpulse.in
	Accessed Date: 17 July 2018

not examined, is normally detected later because one of the ears is healthy. For the impact of unilateral hearing loss on children's academic achievement, it was found that 30% of children with unilateral deafness lag in academic performance, at least 1.2 years behind their normal peers in terms of academic achievement⁶. Unilateral hearing loss has remarkable effects on academic achievement, language development, and children's auditory perception⁷. So we have carried out this study see the type and etiology of hearing lost in school children.

INTRODUCTION

Hearing loss as less as 15 dBHL can create hearing disability in children and consequently impairment in their mental growth^{1,3}. Due to the occurrence of secreted middle ear otitis during a critical period of development of children, these impairments can create various developmental disabilities in children. These disabilities can cause behavioral complications in six functional areas: mental maturity, perception, speech and speaking, cognition and general intelligence, academic achievement, and interpersonal behaviors^{4, 5}. One of the other impairments is unilateral hearing loss (UHL) that, if

METHODOLOGY

This was a cross-sectional study carried out in the school children during the one month period i.e. June 2017 to July 2017. There were total 437 school children were examined by the consent of their parents or care takers. The details of information like age, complains and otolaryngological examination like Audiometric, Aural etc. was carried out. The etiological cause and type of the hearing lost was found out. The collected data was arranged in the tabular form and expressed in percentages.

RESULT

Table 1: Age wise distribution of the patients

Age	Hearing impairment		Total	
	No.	Percentage (%)	No.	Percentage (%)
6-7	3	6.00	50	100%
7-8	5	8.33	60	100%
8-9	7	11.29	62	100%
9-10	9	12.86	70	100%
10-11	10	13.33	75	100%
11-12	6	9.84	61	100%
12-13	4	6.78	59	100%
Total	44	10.07	437	100%

The overall prevalence of hearing lost in the school children was 10.07% and the majority of the patients were in the age group of 10-11 were 13.33%, followed by 9-10 were 12.86%, 8-9 were 11.29%, 11-12 -9.84%, 7-8 were 8.33%, 12-13-6.78%, 6-7 were 6.00% .

Table 2: Sex wise distribution of the patents

Sex	No.	Percentage (%)
Male	25	56.82
Female	19	43.18
Total	44	100%

The majority of the patients were Male i.e. 56.82% and Female were 43.18%

Table 3: Distribution of the patients as per the laterality

Ear involvement	No.	Percentage (%)
Unilateral	35	79.55
Bilateral	9	20.45

The majority of hearing lost found unilateral i.e. 79.55% and Bilateral found in 20.45%.

Table 3: Distribution of the patients as per the etiology

Etiology	No.	Percentage (%)
CSOM	11	25.00
ASOM	9	20.45
Trauma	7	15.91
Wax	6	13.64
Sensory neural Hearing lost	5	11.36
Secretary Otitis Media	3	6.82
Idiopathic	3	6.82
Total	44	100

As per etiology the majority of the patients were having CSOM in 25.00%, followed by ASOM in 20.45%, Trauma -15.91%, Wax-13.64%, Sensory neural Hearing lost-11.36%, Secretary Otitis Media and Idiopathic were in 6.82%.

Table 4: Distribution of the patients as per the type of hearing lost

Type	No.	Percentage (%)
Conductive	33	75.00
Sensory neural Hearing lost	5	11.36
Mixed	6	13.64

The most common cause of hearing lost was Sensory neural Hearing lost was Conductive in 75.00% Sensory neural Hearing lost -11.36% and Mixed -13.64.

DISCUSSION

Around 360 million people of the world population suffer from disabling hearing loss. Out of which 32 million are children.⁸ Disabling hearing loss refer to hearing loss greater than 40dB in the better hearing ear in adults and a hearing loss greater than 30dB in the better hearing ear in children. The overall development of a child is determined on how healthy a child is. It determines his/her ability to acquire knowledge and skill. Though there are various reasons, a child is to be labeled as challenged, one of the most important reason is disruptive functioning of the five basic senses (to see, to hear, to smell, touch and to taste). Hearing loss is one of the conditions that affect a larger number of individuals at any given moment. As per Global Health Estimates 2012, in south East Asia region, out of 184,899 children in the age group of 5 years to 14 years, 162,547 children suffer from sense organ diseases. Out of which 61,813 suffer from refractive errors and 55,230 suffer from hearing loss.⁹ The World Health Assembly affirmed the importance of interventions in control preventable HI¹⁰ and recommended population-based epidemiological studies to determine the prevalence rate and causes of HI in all nations for targeting of preventive efforts.¹¹ The reported prevalence rates of CHI varied widely around the world.^{12,14} Most studies focus on either rural or urban populations, even though comparing the difference between the two is important. The urban-rural differences might be attributable to differences in cultural perceptions regarding the impact of HI, diagnosis and treatment¹⁵, in our study we have seen that The overall prevalence of hearing lost in the school children was 10.07% and the majority of the patients were in the age group of ^{10,11} were 13.33%, followed by 9-10 were 12.86%, 8-9 were 11.29%, 11-12 -9.84%, 7-8 were 8.33%, 12-13-6.78%, 6-7 were 6.00% . The majority of the patients were Male i.e. 56.82% and Female were 43.18%. The majority of hearing lost found unilateral i.e. 79.55% and Bilateral found in 20.45%. As per etiology the majority of the patients were having CSOM in 25.00%, followed by ASOM in 20.45%, Trauma -15.91%, Wax-13.64%, Sensory neural Hearing lost-11.36%, Secretary Otitis Media and Idiopathic were in 6.82%. The most common cause of hearing lost was Conductive in 75.00%, Sensory neural Hearing lost-11.36% and Mixed-13.64. These findings are similar to Saud Lateef Chishty¹⁶ *et al* they found the incidence of hearing loss is 9.3%. The maximum cases 60.22 % belonged to the low socio-economic strata. A statistically significant difference of distribution by gender was noticed with a male preponderance (61.29%) as against 38.71% for females. The hearing loss in majority of cases was of a mild degree i.e., 26 to 45 dB (34.41%) of which majority of cases

(87.10%) had conductive loss. Wax was the commonest cause of hearing loss (41.94%). CSOM was found in 21.50 % of all cases. Peak prevalence of hearing loss was found at 8 years of age, again declining after that from 20.43 % to 5.38 % by 12 years of age.

CONCLUSION

It can be concluded from our study that The overall prevalence of hearing lost in the school children was 10.07% and the majority of the patients were in the age group of 10-11 were 13.33% of the patients were Male, The majority As per etiology the majority of the patients were The majority of hearing lost found having CSOM, The most common cause of hearing lost was conductive followed by Sensory neural Hearing lost.

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Source of Support: None Declared
Conflict of Interest: None Declared