

## Ear Nose Throat (ENT) disorders in Government Schools of Far-Western Nepal

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### ABSTRACT

**Background:** ENT disorders specially hearing impairment negatively impacts students' development of academic, language and social skills. If left undiagnosed, these conditions may result in significant irreversible damage such as varying degree of hearing loss that can affect the social or professional performance of the individuals in later stages of life. Students going to government school in our country generally come from under privileged society. We investigated the occurrence of ENT diseases among various government school students in Kailali district. **Methods:** Nine government school of Kailai district were chosen at random. All students of those school present on the day of examination went routine ENT examinations. Brief history, if any, was recorded and findings were noted. The study was done throughout the month of September, 2013. **Results:** There were a total of 2256 students enrolled in the study. There were 1126 male and 1130 female students. Mean age of the students was 9.88 years. Forty One percent of students had ENT problems. Ear wax was the most common (17%) findings followed by suppurative ear diseases, otitis media with effusion as so on in decreasing frequency. **Conclusions:** ENT diseases and specially ear diseases are important health problems among school children of Nepal. Regular school health services, screening program, public awareness, improvement of socioeconomic status, timely referral to a specialist doctor can help to reduce the disease-related burden.

### INTRODUCTION

ENT diseases may cause life-long or sometimes life-threatening problems. Congenital or acquired hearing impairment hinders students' development of academic, language and social skills.<sup>1</sup> Chronic otitis media is an inflammatory process of the middle ear and mastoid cavity, which may be related to several conditions such as cholesteatoma and otitis media with effusion (OME) etc. It mostly presents with a tympanic membrane (TM) abnormality, like perforation or retraction, and suppurative discharge noted in the external ear canal. Due to its insidious progress and irreversible damage, the disease is an important pediatric health topic especially in developing or underdeveloped countries.<sup>2</sup> Hearing loss is considered to be the main health issue that affects quality of life, affecting approximately one-third of these populations. The World Health Report (1997) described hearing impairment as 'a serious problem in young children because it retards language development and school progress, both of which have a significant impact in later life'.<sup>3</sup> School health program is an important aspect of any community health program. School health services provide an ideal platform to detect the health problems early and treat them.<sup>4</sup> About 42% of the total population are children below the age of 16.<sup>5</sup> There are no reliable data on the current prevalence of ENT disorders in school children. There are few studies

in Nepal targeting hospital based children or a certain disease only.<sup>6,7,8,9</sup>

The main goal of the current study was to determine the occurrence of ENT disorders among schoolchildren in a district of far-west Nepal.

### METHODS

It was a cross-sectional descriptive study. The study was done throughout the month of September, 2013. Nine government school of kailali district were chosen at random. All the students of those school present on the day of examination were included in the study. A brief history, if any, was taken. General ENT examination was done. Age, sex, complains, findings and diagnosis were recorded. Medical advice and counselling were given to those having positive findings.

Prior to the study, consents were obtained from the principals or Head-master of the schools, and families of the students.

The occurrence was calculated by dividing the number of the students with positive finding by the total number of students and 95% confidence interval (CI) was used. Statistical analysis of the data was done using the Statistical Package for the Social Sciences (SPSS-17) program. Results with a p value <0.05 were considered significant.

**Table-1: Age characteristics of the students.**

Total Students	2256
Minimum age	4 years
Maximum age	16 years
Mean age	9.88 years
Std. Deviation	2.484

**Table 2: Diagnosis with their frequencies**

		sex		Total
		f	m	
diagnosis	0	698	635	1333
	1	432	491	923
Total		1130	1126	2256

Chi-square= 6.742, P= 0.009

**Table 3: diagnosis \* sex Crosstabulation**

Condition	Frequency	Percent
normal	1333	59.0
wax	391	17.3
csom tt	138	6.1
ome	126	5.6
ET dysfunction	39	1.7
dermatitis pinna	33	1.5
otitis externs	33	1.5
csom as	31	1.4
otomycosis	17	.8
Allergic Rhinitis	12	.5
aom	12	.5
urti	12	.5
epistaxis	9	.4
infected lobule	9	.4
chronic nasal vestibulitis	7	.3
acute pharyngitis	6	.3
crs	6	.3
perichondritis	6	.3
asom	5	.2
chronic laryngitis	5	.2
DNS	5	.2
FB ear	3	.1
post auricular lymphadenitis	3	.1
pre auricular lymphadenitis	3	.1
acute nasal vestibulitis	2	.1
chronic allergic pharyngitis	2	.1
pre auricular sinus (infected)	2	.1
suppurative cervical lymphadenitis	2	.1
viral parotitis	2	.1
cheek cellulitis	1	.0
neck abscess (superficial)	1	.0
Total	2256	100.0

**RESULTS**

There were a total of 2256 students enrolled in the study. Their age was as shown in table 1. There were 1126 male and 1130 female students with M:F ratio of 0.9964:1. Of total, 1332 (59%) students had normal ENT findings. The rest 41% had positive findings. The diagnosis based on the

findings are shown in table 2. It shows ear wax was the most common findings (17.3%) in the school students. It was followed by chronic suppurative otitis media, tubo-tympanic variety (CSOM-TT), Otitis media with effusion etc. in descending frequencies. Relationship between sex and normalcy was compared by chi-square test as shown in table 3. It showed males had significantly more diseases than the females (p=0.009).

**DISCUSSION**

Our study showed almost equal male and female students. In a study by Adhikari P, there were nearly twice the number of male students than that of females.<sup>9</sup> We found in the field that there were various NGOs working for the children, women and other classes of people. Maybe it was due to these organizations that the attendance of female children were higher than in other studies. We have found that 41% of students had one or another ENT diseases. It was higher than a study by Maharjan M. et al which showed 33% of the school students had ENT problems.<sup>6</sup> Ear wax was the most common diagnosis comprising of 17.3% of the total school population. Wax was the most common diagnosis in many studies in our country and abroad.<sup>9,10,11,12</sup> It was followed by CSOM-TT and OME. There has been a lot of studies showing OME as a major cause of hearing loss in children.<sup>6,9,12,13,14</sup> There were 169 (7.5%) cases of CSOM of which 18.3 percent were attico-antral variety. The occurrence of CSOM is comparable to a study done in Bangladesh, but the attico-antral variety in our study is much higher.<sup>15</sup> Attico-antral CSOM has to be managed at earliest by surgical method due to high incidence of complications in this variety. There were 74 (3.28%) cases of non otogenic diseases comprising mainly of allergic rhinitis, chronic rhinosinusitis, acute and chronic pharyngitis. There are very few studies which takes into account of non otogenic diseases in addition to the ear diseases.

We have found that the most common diseases are those which gives rise to hearing loss in children. Adequate hearing is one of the main factors for good psychosocial development, by which individuals may express their thoughts, feelings, and wishes, and acquire life experience and knowledge. Children require normal hearing or adequately corrected hearing to facilitate the formal education.

**CONCLUSION**

ENT diseases and specially ear diseases are important health problems among school children of Nepal. Regular school health services, screening program, public awareness, improvement of socioeconomic status, timely referral to a specialist doctor can help to reduce the disease-related burden.

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