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PREVALENCE OF EAR NOSE AND THROAT DISORDERS IN SCHOOL GOING CHILDREN- OUR EXPERIENCE OF SCREENING CAMP IN FOUR GOVERNMENT SCHOOLS IN KATHMANDU

ABSTRACT

Background: This study was conducted to find out the prevalence of different types of ear nose and throat disorders in school going children of Kathmandu.

Method: The study was done over the period of two months on July and august 2022. Four government schools of Kathmandu were chosen for the study. Those schools were little far away from the core city area and were having relatively less health care services available. Students going to government school mostly were from poor family background especially in Kathmandu. All the students of those schools present on the day of examination underwent ENT screening check up by ENT surgeons and trained medical officers. Brief historywas recorded and findings were noted. Results were expressed in numbers and percentages.

Result: There were 5366 students taken for the study which included 48.5%(n=2610) male and 51.5%(n=2756) female. Mean age of the students was 9.23 years. 31.96% had ENT problems. The most common ear disorder was impacted earwax (17.89%), followed by chronic otitis media (2.14%), otitis media with effusion (1.64%) and acute pharyngitis (1.56 %).

Conclusion: ENT disorders specially ear diseases like impacted earwax, COM and OME were important health problems among school children of Kathmandu, Nepal. Regular school health services, screening program, public awareness, improvement of socioeconomic status can help reduce ENT disease burden and prevent hearing loss.

Keywords: Chronic otitis media, Hearing loss, Impacted earwax, Otitis media with effusion, Screening program

INTRODUCTION

Ear, Nose and Throat (ENT) problems are very common among children but there is lack of proper data on community based study in Nepal. Most of the people in Nepal live in the rural and hilly areas with less developments and relying on the agriculture. Gradually people have started to migrate in the city and capital for seeking better livelihood and opportunities. Migration of the people from village to the big city resulted in overcrowding and economic deprivation in the city. Many people in the cities live below poverty line which constitute (30.9%) of the total population.[1] Overcrowding, poor socioeconomic conditions, lack of healthy practices, inaccessibility to health services and late diagnosis may lead to burden of ear nose and throat disease. The World Health Organization suggests that, in developing countries, children should be screened at school

entry age using a simple audiometer and external ear inspected for the presence of discharge.[2] This will be helpful to study the extent of the problem in the community. Diseases of ear, nose and throat can usually be diagnosed by taking a very good history and proper examination. 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.[3] Wax impaction in the ear canal results in mild hearing loss ranging from 5 to 40 dB and is the most common cause of preventable hearing loss.[4] In children, hearing loss of even mild degree can lead to delayed language development and educational progress and should therefore be managed in time. Hearing loss sometimes may not be complained by the children but overall academic progress may be hampered silently. On the other hand, impacted earwax may cause recurrent earache and school loss. Recurrent discharge from the ear and perforation in the ear drum similarly results in hearing loss and poor school performance.

School health program is an important aspect of any community health program. School health services provide an ideal platform to detect and treat those health problems earlier.[5] About 42% of the total population are children below the age of sixteen.[6]There are no reliable data on the current prevalence of ENT disorders in school children in Kathmandu. The main goal of the current study was to determine the occurrence of ENT disorders among school children in Kathmandu.

METHODS

It was a cross-sectional descriptive study done over the period of 2 months on July and August 2022. Four government schools of Kathmandu district were chosen for the study namely Tej Binayak, Siddi Ganesh, Bhagawoti and Kalika Saran. The first two schools are located in Kageshwori-Manohara municipality and later two schools are located in Sankaraapur municipality of Kathmandu. Those schools are a little far away from the core city area and are having relatively less health care services available. Students going to government school are generally from poor and disrupted family background especially in Kathmandu. Data was collected at the ENT Screening health camp conducted by the municipality health department and Rotary international Nepal. All the students of school present on the day of examination were included in the study. Prior to the study, consent was taken from the Principal of the schools and parents of the students if present with the students. A brief history, if any, was taken. Ear examination was done with Heine otoscope mini 3000, nasal examination was done with torch light and otoscope. Throat examination was done with battery operated ordinary head light. Hearing assessment using tuning fork (512Hz) was done only in selected students who had history of hearing loss. Total of three consultant ENT surgeons and four trained medical officers (trained in ENT) were involved in the data collection, counseling and treatment of the students. Any doubt in the diagnosis and treatment was supervised by the consultant ENT surgeon. Age, sex, complains, findings and diagnosis were recorded. Medical advice and counseling was given to those having ENT disorder. Results were expressed in numbers and percentages.

RESULTS

There were a total of 5366 students taken for the study. The mean age was 9.23 years (table1). There were 2610 male and 2756 female students with M:F ratio of 0.947:1 (Table 2). Of total, 68.04%(n=3651) students had normal ENT findings. The rest 31.96% had positive findings. The diagnosis based on the findings are shown in table 3. Ear related pathologies were encountered in 23.44% (n=1258) students. Impacted earwax was the most common finding(17.89%). It was followed by chronic otitis media (2.14%) and Otitis media with effusion (1.64%). Only 7.92% of the students mentioned their symptoms and aware of their problem and remaining 92.07% students were unaware of their ENT disorders and hence were asymptomatic. About 2.23% (n=120) students had more than one ENT problems.

Table1. Age characteristics of the students included in study (n=5366)

Minimum age	5 years
Maximum age	17 years
Mean age	9.23 years

Table 2. Sex distribution

	Number(n)	Percentage (%)
Male	2610	48.5
Female	2756	51.5
Total	5366	100

Table3. Prevalence of various ENT disorders

	Disorders	Numbers (n)	Percent (%)
Ear disorders (n=1258) (23.44%)	Impacted earwax	960	17.89
	COM	115	2.14
	OME	88	1.64
	Congenital deformity of pinna and accessory auricle	34	0.63
	AOM	30	0.56
	Recurrent Otitis Externa	20	0.37
	U/L SNHL	7	0.13
	FB ear	4	0.05
Nose disorders (n=262) (4.88%)	Chronic rhinitis	84	1.56
	Symptomatic DNS	79	1.47
	Adenoid hypertrophy	78	1.45
	Recurrent epistaxis	16	0.29
	Nasal polyp	5	0.09
Throat disorders (n=195) (3.63%)	Acute pharyngitis	84	1.56
	Cervical lymphadenitis	72	1.34
	Mucocele of lip	24	0.44
	Tongue tie	12	0.03
	Hypertrophy of tonsil(grade 3 and above)	3	0.05
Total students with ENT disorders		1715	31.96
Students having more than one ENT problems		120	2.23

DISCUSSION

Our study had almost equal male and female students. In a study done by Adhikari P, there was nearly twice the number of male students than that of females.[7] We have found that 31.96 % of students had at least one ENT disorder. It is similar to the study done by Maharjan M. et al which showed 33% of the school students had ENT problems.[8] Ear wax is one of the most common pathologic ear findings seen in clinical practice. In our study, the prevalence of impacted earwax was 17.89%. Impacted earwax results in hearing loss ranging from 5 to 40 dB and is the most common cause of preventable hearing loss.[4] We had only taken the hard and impacted earwax in the ear canal as a disorder and soft earwax even if it was totally occluding the ear canal was excluded. Those earwax might come out itself even without intervention and seemed to be not causing any ear problems in near future. Other studies conducted among Nepalese children have reported a prevalence of earwax 25.14%[9] and 62%[7] respectively. Impacted earwax is mostly a silent condition and may not have been attended to by the caregivers of the children. Sharma et al[10] and Jacob et al[11] study reported earwax as the most common cause of hearing impairment, which accounted for 50 and 29.8% of cases respectively. Why are there so many cases of impacted earwax get unnoticed to the children and caregivers? The answer could be- children are often using commercial cotton bud to clean the ear canal frequently so as to keep their ear canal clean. Contrary to this common belief, use of commercial cotton bud may push the cerumen deep in the canal and absorbs the moisture making it hard and impacted. Other factor could be environmental pollution and humidity of the ambient environment which could have favorable for the impaction of cerumen especially in Kathmandu. Our recommendation therefore ispractice of cleaning the ear canal with commercial cotton bud by self and caregivers is to be strictly prohibited. Next common disorders noticed were chronic otitis media(COM) and otitis media with effusion(OME) after the impacted earwax. The occurrence of COM is comparable to a study done in Bangladesh.[12] Chronic otitis media (COM) is a major health problem throughout the world in developing countries

including Nepal.[13] It is the most common cause of persistent mild to moderate hearing impairment in children and young adults.[14] High rates of COM have been attributed to overcrowding, inadequate rates of nasopharyngeal colonization with potentially pathogenic bacteria and inadequate or unavailable health care services.[14] There were 4.88%(n=262) students with nasal disorders mostly of chronic rhinitis (1.56%) and 3.63% students having throat problems mostly of which were acute pharyngitis(1.56%). Only 7.92% of the students complained and were aware of their ENT disorder and rest 92.07% students were unaware of their ENT disorder and were asymptomatic.Serious ENT diseases are those which give rise to hearing loss in children. With proper ENT screening camp, changing ear cleaning habits, improving socioeconomic condition and early diagnosis and treatment can help prevent and reduce deafness from the country.

CONCLUSION

ENT disorders specially ear diseases like impacted earwax, chronic otitis media(COM) and otitis media with effusion(OME) are major public health problems among school children of Kathmandu, Nepal. Regular school health services, screening program, public awareness, improvement of socioeconomic status can help reduce ENT related disease burden and prevent hearing loss.

Conflicts of interest: There are no conflict of interests.

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