

# Prevalence Of ENT Diseases In Children: Hospital Based Study

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## Citation

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## Abstract

**Background:** Nepal is a landlocked and developing country with 34.6% children under 14 years of age as well as a big population under the line of poverty. Socioeconomic status, family type, overcrowding and provision of health care facilities act as risk factors for ENT disorders. There is a lack of data on pediatric ENT disorders from various Nepalese populations. This study was undertaken to determine the hospital prevalence of ENT disorders in pediatric population and their relationship with socio-demographic factors. **Objectives:** This study was undertaken to determine the hospital prevalence of ENT disorders in pediatric population and their relationship with socio-demographic factors in a tertiary care hospital in Nepal. **Methods:** This is a prospective analytic study, conducted at Department of ENT, Head & Neck Surgery between January 2010 and December 2010 in the Ear, Nose and Throat (ENT) Department, Gandaki Medical College Charak Hospital, Pokhara, Nepal. All patients aged 16 years or younger presented ear diseases to the ENT clinic of the hospital seen by ENT surgeons were enrolled into the study. **Results:** Among 1632 children, ENT diseases were found to be more common among male children (60%). The male to female ratio is 1.5:1. Most of the children were living in joint family (64.16%). Diseases of auditory system (57.84%) were the most common group of ENT problems among the pediatric population, followed by pharyngo-esophageal (23.53%) and nasal disorders (18.63%). Most common otologic disorder was ear wax (40.9%). Among problems associated with nose, rhinitis (23.4%) was most common. Pharyngitis was troubling (44.8%) of our study population. **Conclusion:** Improvement of health education, socioeconomic status and health facilities will be helpful in reducing the prevalence of ENT diseases. A study on the prevalence of the Ear Nose throat and Head and Neck diseases in developing country like Nepal can provide basic data which can be relevant and beneficial to the development of medical ENT curriculum in the regional setup and subsequent medical practice.

## INTRODUCTION

Nepal is a developing country, surrounded by Himalayas and in between India and China. Majority of Nepalese people rely on agriculture. The population of Nepal is 30 million<sup>1</sup>. The population of children below the age of 14 year is 34.6%<sup>2</sup>. There is still a big population (30.9%) who are under the line of poverty<sup>1</sup>. ENT-related diseases in children is major outdoor burden in pediatric population. Fortunately the mortality is very low but the rate of complications is still on the rise despite improvements in health care facilities<sup>3,4</sup>. Infection of the middle ear is the most common disease in children mainly due to altered anatomy of eustachian tube which is straighter in children as compared to that in adults<sup>5</sup>. According to World Health Organization 42 million people (age > 3 years) have hearing loss. The major cause for hearing loss is otitis media, which is second only to common cold as a cause of infection in childhood<sup>6</sup>. Otitis media is

also the commonest cause of persistent mild to moderate hearing impairment in children and young adults in developing countries. In the Nepalese context, approximately 16% of the population above the age of 5 years suffers from otitis media. More than 55% of these cases occur in school going children, most of them belonging to the lower socio-economic class<sup>7</sup>.

Respiratory tract symptoms such as cough, sore throat, and earache are also frequent in children. Upper respiratory tract infections predispose a child to complications such as otitis media, tonsillitis, and sinusitis. Tonsillitis most often occurs in children, a condition rarely appreciated in those younger than 2 years. Viral tonsillitis is more common in younger children, while tonsillitis caused by Streptococcus species typically occurs in children aged 5-15 years. Beside these conditions, foreign body in ear, nose and throat are cases which are typically evident in pediatric age group. The data

on pediatric Otorhinolaryngology from various Nepalese populations is insufficient. A study has reported high prevalence of ontological morbidities<sup>8</sup>.

**MATERIAL AND METHODS**

This study was conducted at Department of ENT, Head & Neck Surgery between January 2010 and December 2010 in the Ear, Nose and Throat (ENT) Department, Gandaki Medical College Charak Hospital, Pokhara, Nepal. All patients aged 16 years or younger presenting ENT diseases to the ENT clinic of the hospital seen by ENT surgeons were enrolled into the study. The information included demographic data like age, sex, and history of ENT disease was noted, duration of complaint and physical examination. Otoscopic examination was done using Welch Allyn otoscope REF 71045 (made in USA).

Wax obstructing at least one quadrant of pars tensa was considered as significant and included in the study. It was considered impacted when the wax covers the whole of external auditory canal and tympanic membrane is not visible at all. Chronic suppurative otitis media implies to a permanent abnormality of the pars tensa or pars flaccida. Cases were diagnosed as otitis media with effusion if there is visible retraction and change in color (pinkish) of tympanic membrane and its mobility on pneumatic otoscopy. Informed consent was taken from guardians to participate in this study. Results are expressed in numbers and percentages.

**RESULT**

During the study period 6113 patients with ENT diseases were registered in OPD. Out of which 26.70% (n =1632) were from 1 year up to 16 years of age Majority of them were male 60% (n=979), while female were 40% (n=653). The male to female ratio is 1.5:1 with a male mean of 10.41(SD 4.7) and female mean of 10.42 (SD 5.0). The socio-demographic profile of the study population is shown in Table1 and Table 2.

**Figure 1**

Table 1: Demographic characteristics

Gender	Number	Percentage
Male (Total)	979	60
1-9 years	412	42
10- 16 years	567	57.9
Female (Total)	653	40
1-9 years	300	45.9
10- 16 years	353	54.1

**Figure 2**

Table 2: Patient distribution of the according to type of family.

Family type	Male	%	Female	%	Total
Nuclear	329	(20.16)	256	(15.68)	585 (35.84)
Joint	650	(39.83)	397	(24.33)	1047 (64.16)

Data in the parenthesis indicate percentage

ENT diseases were found to be more common among male children then in female however this difference was not statistically significant, as well ear diseases were most common in male children 561(34.4%). There is not much difference in age group, (64.16%) were living in joint family. Diseases of auditory system (57.84%) were the most common group of ENT problems among the pediatric population, followed by pharyngo-esophageal (23.53%) and nasal disorders (18.63%). (Table 3)

**Figure 3**

Table 3: Age and Sex distribution of different ENT disorders

	Age	Male	Female	Total
Ear Disorder	1-9 years	293	203	496
	10- 16 years	268	180	448
	Total	561	383	944(57.84%)
Throat Disorder	1-9 years	68	36	104
	10- 16 years	162	118	280
	Total	230	154	384(23.53)
Nose Disorder	1-9 years	51	24	75
	10- 16 years	137	92	229
	Total	188	116	304(18.63%)

Data in the parenthesis indicate percentage

Most common otologic disorder was ear wax (40.9%) followed by chronic suppurative otitis media (35.7%), Middle ear effusion was the third most common ear morbid condition (15.4%), otomycosis was evident in (4.7%). Foreign Body in the ear was seen in (2.3%) children. Among problems associated with nose, rhinitis (23.4%) was most common. Chronic sinusitis (20.4%), epistaxis (13.5%), Deviated nasal septum (10.8%), foreign body nose (6.3%), nasal polyps (4.3%) and other conditions of nose like congenital anomalies; trauma was seen only in a very minor group (6.9%) of the pediatric patients. Pharyngitis was troubling (44.8%) of our study population. Pharyngitis was thus the most common throat morbidity followed by tonsillitis (36.7%). Cervical lymphadenitis was seen in (9.6%). Foreign body in esophagus was visualized in (3.9%) patients. Other morbid conditions included congenital anomalies like laryngomalacia, laryngeal stenosis and sub-glottis hemangioma (4.9%). ( Table 4)

**Figure 4**

Table 4: Distribution of various morbid conditions among study population

Disorders	ENT Disorders	Male	Female	Total	Percentage
Ear Disorder	Ear wax	226	160	386	40.9
	Chronic suppurative otitis media (CSOM)	211	126	337	35.7
	Otitis media with effusion(OME)	81	64	145	15.4
	Otomycosis	29	15	44	4.7
	Foreign body ear	14	8	22	2.3
	Total	561	383	944	100
Nose disorder	Rhinitis	42	29	71	23.4
	Chronic sinusitis	31	31	62	20.4
	Allergic rhinitis	24	20	44	14.5
	Epistaxis	34	7	41	13.5
	Deviation of nasal septum (DNS)	25	8	33	10.8
	Foreign body nose	9	10	19	6.3
	Nasal polyp	11	2	13	4.3
	Others	12	9	21	6.9
Total	188	116	304	100	
Throat disorder	Pharyngitis	103	69	172	44.8
	Tonsillitis	85	56	141	36.7
	Cervical lymphadenitis	24	13	37	9.6
	FB esophagus	7	8	15	3.9
	Others	11	8	19	4.9
	Total	230	154	384	100

**DISCUSSION**

The main health problems encountered in the child population in Nepal are low birth weight malnutrition and infection. The focus of the various health plans directed to attend the needs of pediatric population has ignored the significant morbidities that arise in the ear, nose and throat. This study indicates that ear diseases in children is a considerable burden. It is not surprising that wax (40.9%) obstructing the tympanic membrane is relatively common, because in the majority of cases it is asymptomatic and therefore not an indication for seeking medical care. The high prevalence of wax in our study corresponds to the results obtained elsewhere in similar study populations<sup>9</sup>. Overall incidence of chronic suppurative otitis media in our study was (35.7%). Chronic suppurative otitis media (CSOM) is a major health problem throughout the world in developing countries including Nepal<sup>10</sup>. It is the most common cause of persistent mild to moderate hearing impairment in children and young adults<sup>11</sup>. The Akinpelu et

al study showed that a very high prevalence (33.9%) of CSOM in Nigerian children<sup>12</sup> which is similar finding with our study. Otitis media with effusion (OME) is the commonest cause of hearing impairment and one of the most frequent reasons for elective admission to hospital for surgery during childhood. The exact prevalence of this disease in Nepal is not known. Study done in rural hospital in India revealed that 20.7% of children had OME which is slightly higher than our study<sup>13</sup>. Otomycosis was found not to be common, accounting for 4.7% of the study population. Foreign body ear was (2.3%) and mostly they were vegetable matter which may expand with moisture<sup>14</sup>.

Pharyngeal diseases constituted the second most common ENT diseases and pharyngitis was found to be the most common. Other conditions included tonsillitis; cervical lymphadenitis and esophageal foreign bodies. The FB in these cases was the coin which was impacted at the level of cricopharyngeus and was promptly removed at emergency esophagoscopy. Nasal diseases are the third most common ORL diseases found in this study and rhinitis was found to be the most common. Chronic sinusitis was second most common morbidity. Low socio-economic factors and overcrowding which are prevalent in our society and in our study, joint family (64.16%) might be responsible for the high prevalence of chronic sinusitis in this work. Improvement in the housing condition in western world has led to a significant reduction in the incidence of this disease. Therefore an improvement in the housing, feeding and better social facilities in our society is likely to be associated with a lower incidence of many of the infective diseases of the ORL region. Epistaxis in children is also a common disorder that is usually due to local irritation in Kiesselbach's plexus. The most common disorders underlying epistaxis are local inflammatory diseases, infections, and trauma<sup>15</sup>. Most of the epistaxis in children is self limiting, however they can be recurrent.

The results from this study can be applicable to the pediatric population attending the ENT clinic of our tertiary level hospital. An exact comparison with different socioeconomic and demographic factors could not be elicited as a control group was not taken into consideration. The prevalence of the various morbidities could be much higher in the general population, as many do not come to get medical help due to various socioeconomic barriers.

**CONCLUSION**

The study suggests that ear wax, pharyngitis, and rhinitis are

the most common ENT problems in pediatric population. Improvement of health education, socioeconomic status and health facilities will be helpful in reducing the prevalence of ENT diseases. A study on the prevalence of the Ear Nose throat and Head and Neck diseases in developing country like Nepal can provide basic data which can be relevant and beneficial to the development of medical ENT curriculum in the regional setup and subsequent medical practice.

### References

1. The World Fact Book : Nepal. (<http://www.cia.gov/library/publications/the-world-factbook/print/np.html>.)
2. Government of Nepal. Central Bureau of Statistics. Statistical Year Book of Nepal, 2009. Kathmandu. ([http://www.cbs.gov.np/Year\\_Book\\_2009/Final\\_Chapters/chapter1/1.7.pdf](http://www.cbs.gov.np/Year_Book_2009/Final_Chapters/chapter1/1.7.pdf).)
3. Sox CM, Finkelstein JA, Yin R, Kleinman K, Lieu TA. Trends in otitis media treatment failure and relapse. *Pediatrics* 2008; 121: 674-79.
4. Gul AA, Ali L, Rahim E, Ahmed S. Chronic suppurative otitis media; frequency of *Pseudomonas aeruginosa* in patients and its sensitivity to various antibiotics. *Professional Med J* 2007; 14: 411-15.
5. Finnbogadóttir AF, Petersen H, Laxdal T, Gudbrandsson F, Gudnason T, Haraldsson A. Mastoiditis in children in Iceland. *Laeknabladid* 2007; 93: 275-80.
6. AL Pittman and PG Stelmachowicz. Hearing loss in children and adults: Audiometric configuration, asymmetry, and progression. *Ear Hear.* 2003 June; 24(3):198–205.
7. About hearing Nepal. (<http://hearingnepal.org/about/>)<http://www.cia.gov/library/publications/the-world-factbook/print/np.html>
8. Adhakari P. Chronic Suppurative Otitis Media in urban private school children of Nepal. *Braz J Otorhinolaryngol.* 2009; 75(5): 669-72.
9. Prakash Adhikari. Pattern of otological diseases in school going children of Kathmandu valley. *Int Arch. Otorhinolaryngol.* Sao Paulo. 2008; 12(4): 502-5.
10. Adhikari P. Chronic suppurative otitis media in school children of Kathmandu valley. *Int Arch Otorhinolaryngol.* 2007; 11:175-8.
11. Biswas AC, Joarder A H, Siddiquee BH. Prevalence of CSOM among rural school going children. *Mymensingh Med J.* 2005; 14:152-5.
12. Akinpelu OV, Amusa YB. Otological diseases in Nigerian children. *The Internet J Otorhinolaryngol.* 2007;7:1.
13. Sanjay P. Ear, Nose and throat disorders in pediatric patients at a rural hospital in India. *Australasian Medical Journal AMJ.* 2010; 3(12); 786-90.
14. Ngo A. Otorhinolaryngeal foreign bodies in children presenting to the emergency department. *Singapore Med J* 2005; 46(4); 182-8.
15. Guarisco JL, Graham HD. Epistaxis in children: causes, diagnosis, and treatment. *Ear Nose Throat J.* 1989 ;68(7):522, 528-30, 532 passim.

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