

ORIGINAL RESEARCH ARTICLE

SPECTRUM OF OTORHINOLARYNGOLOGICAL PROBLEMS AMONG PAEDIATRIC AGE GROUP AT A TERTIARY HOSPITAL OF NEPAL

Jeegyasha Thapa^{1,*}, Sangita Regmi Chalise¹, Subash Khadka¹, Abishesh Shakya¹, Prabha Devi Chettri², Rashmi Ranjan¹

¹Department of ENT-HNS, KIST Medical College and Teaching Hospital

²Department of Paediatrics, KIST Medical College and Teaching Hospital

Received: 10 Nov, 2022

Accepted: 23 Dec, 2022

Published: 31 Dec, 2022

Key words: ENT Disorders; Ear wax; Pharyngitis; Rhinitis.

*Correspondence to: Jeegyasha Thapa, Department of ENT-HNS, KIST Medical College and Teaching Hospital, Imadole, Lalitpur, Nepal.

Email: ravendrjgyasha@gmail.com

DOI: <https://doi.org/10.54530/jcmc.1199>

Citation

Thapa J, Chalise SR, Khadka S, Shakya A, Chettri PD, Ranjan R. Spectrum of otorhinolaryngological problems among paediatric age group at a tertiary hospital of Nepal. Journal of Chitwan Medical College. 2022;12(42):17-20.



Peer Reviewed

ABSTRACT

Background: Otorhinolaryngological problems are very common among children. The pattern of ENT disorders varies from community to hospital depending upon the demographic, socioeconomic and health facilities available in that particular region. The objective of the study was to evaluate and determine the hospital based prevalence of disorders of Ear, Nose and Throat among children.

Methods: A prospective cross-sectional study was conducted in department of KIST Medical College and Teaching Hospital during the period of 1 year from 15th June 2021 to 15th June 2022. 320 patients attending the ENT outpatients during the study period were enrolled in the study. Informed consent was taken from patient and attendant. Diagnosis was made on the basis of history and clinical examination. Results were expressed in numbers and percentage.

Results: Among the 320 (3.66%) respondents (58.7%) were Males and (42.2%) were Females. Most of the children belonged to age group 0-5 years (56.25%), were living in Nuclear family (73.4%), belong to Middle upper middle class of family (43.1%). The most common ENT disorders were ear wax (32.5%) among otological disorders, pharyngitis (6.9%) among throat disorders and rhinitis (6.6%) among nasal disorders.

Conclusions: The study revealed ear wax, pharyngitis and rhinitis were the most common ENT related disorders in our area. We can improve the rate of prevalence of ENT disorders by firstly raising awareness among people and then taking further steps to improve education and health system.

INTRODUCTION

Otorhinological problems are considered as one of the most common causes among children to consult the doctor. Paediatric population forms a significant proportion of total world's population.¹ Nepal is situated in the southern slope of mighty Himalayas, is a landlocked mountainous county. Nepal is multiethnic, developing country.^{2,3} ENT problems are more common in children than in adults, which could be due to anatomical factor such as wider and horizontal Eustachian tube, as well as underdeveloped immunity, malnourishment, poor hygiene and sanitary condition, overcrowding, lower socioeconomic status and illiterate mothers.⁴ Children are usually referred to ENT outpatient department from pediatrics OPD's due to diseases such as Acute Otitis Media, Acute Tonsillitis and Acute Rhinitis. These causes are leading to absenteeism from school and are also quite common in developing countries like Nepal.⁵

The objective of the study was to evaluate and determine the prevalence of disorders of Ear, Nose and Throat among children reporting to outpatient department of tertiary care center of

Lalitpur, Nepal.

METHODS

A prospective cross-sectional study was conducted in department of KIST Medical college and Teaching Hospital during the period of 1 year from 15th June 2021 to 15th June 2022. Permission was obtained from ethical committee (Reference no. 2077/078/56). A total of 320 patients from age 0-15 years who presented to ENT outpatient department with ear nose and throat related complaints were included in the study. Some patients were referred to from the pediatric department. Written consent and ascent was taken from parents or the attending guardian. The information included demographic data such as age, sex socio-economic status (according to Kuppaswami's scoring system⁶) were taken. All the diagnosis was based on detailed history for ENT disorders, general examination for height, weight and clinical examination and required investigations. All the data were entered in a standard proforma. Further, the data were compiled into Microsoft excel format 2010 and statistical analysis was done with SPSS version 26.

The sample size was calculated by using following formula: $N = Z^2 \cdot p \cdot q / d^2$

Where, N= total number of sample, Z=95% confidence interval, i.e. 1.96

p= Prevalence, q=1-p and d= Precision i.e. 5%

Where we considered p=24.23%, which is the prevalence of ENT disorders among pediatric patients, from other study, with precision of ±5% and level of confidence 95%. Based on these parameters, the minimum required sample size was 280. But we included all 320 patients in the study.

Descriptive statistical tests were used and the data were analysed with SPSS version 16. Results were expressed in numbers and percentage

RESULTS

Out of 8744 patients visiting ENT-OPD, 320(3.66%) were children. A total of 320 patients were examined ranging in age from 0-15 during year June 2021 to June 2022. Among them (185, 58.7%) were males and (135, 42.2%) were females with male-female ratio was 1.37:1 (Figure 1).

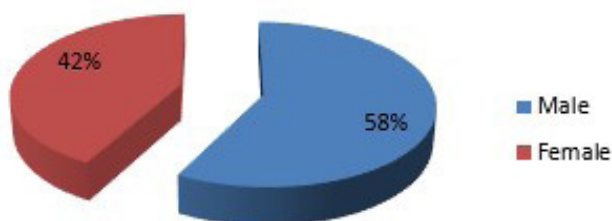


Figure 1: Gender distribution of patients presenting to ENT OPD

More numbers of ENT disorders were concentrated in 0-5 years age group (180, 56.25%), followed by 6-10 years age group (103, 32.19%) and 11-15 years age group (37, 11.56%). Among 0-5 years age group male (97) patients were more compared to females (83) (Figure 2).

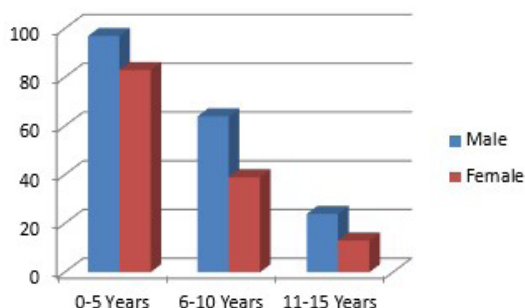


Figure 2: Gender distribution according to age of patients

Most of the children were living in nuclear family 235 (73.40%).

Only, 85 (26.6%) of them were in a joint family as their style of living (Figure 3).

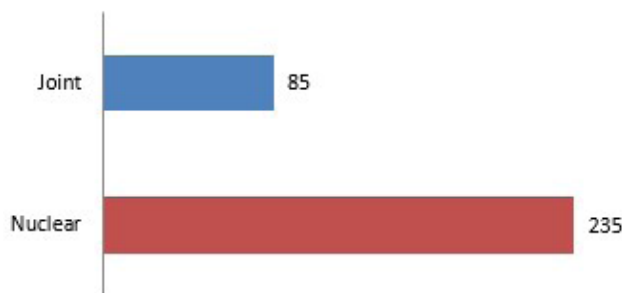


Figure 3: Type of family of patients

Almost 43.1% of the children were from Class II Middle Upper Middle Class socioeconomic status. (Table1).

Table 1: Socio-economic class of patients

Socio-Economic Class	Frequency(%)
Upper (I)	18 (5.6)
Middle Upper Middle (II)	138 (43.1)
Middle Lower Middle (III)	111(34.7)
Lower Upper Lower (IV)	53 (16.6)
Lower (V)	0 (0)
Total	320 (100)

Diseases of ear system (64.7%) were most common ENT disorders among paediatric population followed by Throat, Head and Neck (18.7%) and Nasal (16.6%) disorders. Ear wax (32.5%) and Otitis Media (18.10%) were most common. Ear wax was seen mostly in the age group 0-5 years (74 cases). Among disorders associated with nose acute rhinitis (6.6%) was most common followed by epistaxis (2.8%). Acute pharyngitis (6.9%) then acute tonsillitis (4.7%) was seen among throat related disorders (Table 2).

DISCUSSION

The most common Otorhinolaryngological disorders in this study were ear wax and Otitis Media. Our Study suggests that, significant number of children visiting ENT OPD were having ear disorders followed by throat disorders and then nose disorders. ENT disorders was seen in 3.66% (n=320) of patients who visited ENT OPD during one year study period of this study. Our findings were similar to the study done in Himanchal Pradesh in India showing prevalence of 4.31%.⁶ However, in a similar study done in western part of Nepal showed a higher prevalence of 24.23%.⁴ In our context, most of the children were normally brought to the doctors only if symptoms are serious or their home remedies have not worked.

In our study, majority of the patients were in age group 0-5 years. Our observation is supported by study done in Nigeria by O Akinpelu⁸ and Ibekwe M⁹. In contrast, B Sigdel¹⁰ in his study found 6-10 years most affected group whereas Raju MR¹¹

Table 2: Spectrum of ENT disorders among children with age-groups

Disorders		Age Groups of Participants			Total Numbers	Percentage (Overall %)
		0-5 Yrs	6-10 Yrs	11-15 Yrs		
Ear Disorders (n=207)	Ear Wax	74	22	8	104	32.5
	Ear Trauma	2	1	0	3	0.9
	Otomycosis	5	1	1	7	2.2
	Foreign Body Ear	3	3	0	6	1.9
	Pre Auricular Sinus	3	2	0	5	1.6
	Otitis Externa	10	8	3	21	6.6
	Habitual Ear Picking	1	2	0	3	0.9
Nose Disorders (n=53)	Otitis Media	32	18	8	58	18.1
	Acute Rhinitis	14	7	0	21	6.6
	Epistaxis	4	4	1	9	2.8
	Rhinosinusitis	2	2	3	7	2.2
	Foreign Body Nose	1	1	0	2	0.6
	Allergic Rhinitis	1	4	1	6	1.9
	Inferior Turbinate Hypertrophy	0	2	1	3	0.9
Throat Disorders (n=60)	URTI	4	1	0	5	1.6
	Acute Pharyngitis	5	9	8	22	6.9
	Acute Tonsillitis	7	7	1	15	4.7
	Adenotonsillar Hypertrophy	4	2	0	6	1.9
	Foreign Body Oral Cavity	0	1	0	1	0.3
	Cervical Lymphadenopathy	3	1	1	5	1.6
	Neck Cyst Abscess	3	0	0	3	0.9
Total	2	5	1	8	2.5	
		180	103	37	320	100

found age group of 5-14years most affected. Present study showed male preponderance which is similar with that of Thakur et al¹² (56.38%) and Chaudhari et al¹³ (65.4%). This result is in contrast to study done by Supraneni H¹ which reported more ENT diseases in females (61.9%). Most of the patients were living in Nuclear family in current study which was also seen in study done by Kishve et al¹⁴ (71.3%) and Raju MRK¹¹ (62.8%). There are few studies which have shown joint family more common.^{1, 13, 15} Surprisingly, in our study area 95.5% of the children were healthy, only few had malnutrition (either with wasting or stunting). This may be due people residing in Nuclear families. Most of the families belong to Middle Upper Middle Class (Class II) according to Kuppaswami's score. Similar Prospective study done by Gupta et al¹⁶ has shown Middle Lower Middle Class (Class III) of socioeconomic status more common.

As we have already stated, Otological diseases more common in this study which is similar to finding other studies.^{17, 18} Among the otological diseases ear wax was the most common disease followed by otitis media. Ear wax was seen mostly in the age group 0-5 years, which may be due to inability to clean wax properly by parents due to narrow canal or repeated oiling in the ear as a culture in Nepali society. Few studies have supported our result.¹⁷⁻¹⁹ In contrary; Chronic Suppurative Otitis Media (CSOM) is one of the major health problems in the world and especially in developing countries. It is one of the leading causes of hearing impairment in school going children in Nepal.²⁰ In a survey done in school going children

in Eastern Nepal, hearing assessment revealed a conductive hearing loss on one or both sides in 87% of cases which was due to CSOM.²¹ According to our study, Otitis externa, Otomycosis, Foreign bodies in ear and ear trauma were also seen. Among the throat disorders, pharyngitis (6.9%) was most common throat problem in paediatric ENT patients followed by Tonsillitis (4.7%). Similar results were carried out in study done in UAE, where tonsillitis (36.1%) were more common cause in their cases.²² A study carried out in Nigeria showed acute tonsillitis (36.7%) as one of the major troubling disease not only in outpatient department but in Paediatric emergency as well.²³ In the nasal disorders, acute rhinitis is the most common disease encountered in our study comprising of 6.6% followed by epistaxis, rhinosinusitis and foreign body nose. Most of the children had habit of habitual ear picking or nose picking which was leading to the traumatic conditions in ear and nose. Local inflammatory conditions like vestibulitis, furunculosis and trauma due to nose picking are important causes of epistaxis in children.²⁴

The results from this study are only applicable to the paediatric population attending the Otorhinolaryngological clinic in our tertiary care center. As it is a hospital-based study, the result from another demographic area and socioeconomic group may vary; have higher or lower morbidities. This result cannot be generalized and applied to a community. Our results may also have varied as the study started soon after the pandemic of COVID-19. So, the children could have been reluctantly and lately brought to the outpatient department due to fear of

pandemic. A broader community-based study could bring the exact magnitude of the morbidity pattern. Paediatric Survey needs to be done in outpatient as well as emergency basis.

CONCLUSION

According to the study, ear wax, pharyngitis and rhinitis are the three most prevalent ENT disorders among children. The prevalence of ENT illnesses can be decreased by raising socioeconomic position, enhancing health education, and

improving medical infrastructure. Increasing awareness about the ENT disorders is very crucial step as it can not only help in bringing the patients early to hospital as children are dependent on their parents but also prevent prevalence of ENT conditions which can lead to fatality in future like hearing impairment and speech disability.

CONFLICT OF INTEREST: None

FINANCIAL DISCLOSURE: None

REFERENCES:

1. Surapaneni H, Sisodia SS. Incidence of ear, nose and throat disorders in children: a study in a teaching hospital in Telangana. *Int J Otorhinolaryngol Head Neck Surg.* 2016; 2:26-29. [\[DOI\]](#)
2. United Nations Conference among Trade and Development. Landlocked developing countries: facts and figures; 2006. Available: <http://unohrlls.org/meetingsconferences-and-specialevents/landlocked-developing-countriesfacts-and-figures-unctad-2006/>. [Internet][Cited: 2015 April, 2015].
3. The World Factbook 2021. Washington, DC: Central Intelligence Agency, 2021. [\[LINK\]](#)
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; 14:411-415. [\[LINK\]](#)
5. Regmi, S., Chaudhary, N., Shrestha, S., Pathak, S., Gupta, B., Swar, R., & Kurmi, O. Patterns of Pediatric Ear, Nose and Throat Disorders in a Tertiary Care Hospital of Western Nepal: A Cross-Sectional Study. *Journal of Universal College of Medical Sciences.* 2019; 7(2):15-20. [\[DOI\]](#)
6. Joshi SK, Acharya K. Modification of Kuppuswamy's socioeconomic status scale in context of Nepal, 2019. *Kathmandu University Medical Journal.* 2019; 17(65):1-2. [\[LINK\]](#)
7. Singh A, Kumar S. A survey of ear, nose and throat disorders in rural India. *Indian J Otolaryngol Head Neck Surg.* 2010; 62(2):121-124. [\[DOI\]](#)
8. Akinpelu O, Amusa Y. Otolological diseases in Nigerian children. *The Internet Journal of Otorhinolaryngology.* 2006; 7(1):1-6. [\[DOI\]](#)
9. Ibekwe, M. U., & Mbalaso, O. C. Pattern of Paediatric Ear, Nose and Throat Diseases in Port Harcourt, South-South, Nigeria. *The Nigerian Health Journal.* 2015; 15(2): 48-54. [\[LINK\]](#)
10. Sigdel B, Nepali R. Pattern of Ear Diseases among Paediatric ENT Patient: An Experience from Tertiary Care Centre, Pokhara, Nepal. *J Nepal Paediatr Soc.* 2012; 32(2): 142-5. [\[DOI\]](#)
11. Raju MRK, Fareeduddin M. Prevalence of ear, nose and throat disorders in children at government district hospital Vizianagaram. *Int J Otorhinolaryngol Head Neck Surg.* 2020; 6:497-500. [\[DOI\]](#)
12. Thakur S, Singh S, Mahato B, Singh A. Pattern of Ear Diseases in the Patients Attending Ear Outpatient Department of a Tertiary Center in Eastern Nepal. *Journal of Advances in Medicine and Medical Research.* 2016; 11(11): 1-8. [\[DOI\]](#)
13. Chaudhari BK, Gautam D, Pantha TB, Arun KC, Sharma A. Spectrum of ear, nose and throat disorders among children reporting to the out-patient department of a tertiary care center, Nepal. *Int J Otorhinolaryngol Head Neck Surg.* 2018; 4:1125-9. [\[DOI\]](#)
14. Kishve SP, Kumar N, Kishve PS, Aarif SMM, Kalakoti P. Ear, nose and throat disorders in paediatric patients at a rural hospital in India. *Australasian Med J.* 2010; 3(12):786-790. [\[DOI\]](#)
15. Nepali R, Sigdel B. Prevalence of ENT Diseases in Children: Hospital Based Study. *The Internet Journal of Otorhinolaryngology.* 2012; 14:1-5. [\[LINK\]](#)
16. Gupta V, Gupta A. Pattern of paediatric ear, nose and throat disorders in a district hospital. *Int J Otorhinolaryngol Head Neck Surg.* 2019; 5:403-407. [\[DOI\]](#)
17. Rijal AS, Joshi RR, Regmi S, Malla NS, Dhungana A, Jha AK, Rijal JP. Ear diseases in children presenting at Nepal Medical College Teaching Hospital. *Nepal Med Coll J.* 2011; 13(3):164-8. [\[PMID\]](#)
18. Thakur SK, Acharya R, Singh S K, Ghimire N. Ear diseases in school going children of Sunsari and Morang districts of Nepal. *Journal of Chitwan Medical College.* 2017; 7(19):16-19. [\[LINK\]](#)
19. Acharya A, Singh MM, Shrestha A, Pokharel B. Ear Nose Throat (ENT) disorders in Government Schools of Far-Western Nepal. *Journal of Lumbini Medical College.* 2013; 1(2): 86-88. [\[DOI\]](#)
20. Prakash Adhikari. Pattern of otological diseases in school going children of Kathmandu valley. *Int Arch. Otorhinolaryngol.* 2008; 12(4):502-505. [\[LINK\]](#)
21. Maharjan M, Bhandari S, Singh I, Mishra SC. Prevalence of otitis media in school going children in Eastern Nepal. *Kathmandu Univ Med Journal.* 2006; 4(4):479-482. PMID: 18603958. [\[PMID\]](#)
22. Yeli S. Prevalence of ENT disorders among children in UAE: A tertiary medical care study. *Int J Curr Microbiol App Sci.* 2015; 4(7):682-7. [\[LINK\]](#)
23. Adoga AA, Okwori ET, Yaro JP, Iduh AA. Pediatric otorhinolaryngology emergencies at the Jos University Teaching Hospital: Study of frequency, management, and outcomes. *Ann Afr Med.* 2017;16(2):81-84. [\[DOI\]](#)
24. Guarisco JL, Graham HD 3rd. Epistaxis in children: causes, diagnosis, and treatment. *Ear Nose Throat J.* 1989; 68(7):522, 528-30, 532 passim. [\[PMID\]](#)