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Study of Prevalence of Ear, Nose, Throat morbidity in students of Middle and Higher Secondary Schools in Surguja.

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Abstract:
Background- *Surguja is a district sitiuated in northern Chattishgarh with large number of tribal population. Rural population consists of almost 90% and 93.8 % tribal population lives in village. Prevalence of Ear, Nose, Throat diseases is high and if not treated may lead to speech disorder, poor academic performance, social and psychological disturbances. common disease of Ear Nose Throat are otitis media, tonsillitis, rhinitis, pharyngitis, adenoid usually seen in children. Aim of study is to find out prevalence in school going population who donot come to Hospital for treatment. objective of study is to observe the morbidity in school and association with socio-demographic factors.*
Method and Material*- A predesigned proforma based cross sectional study at different middle and Higher secondary school in surguja. A screening with socio-demographic information obtained after thorough examination and treatment advised for them but for some diseases, follow up done at Government Medical College ambikapur.*
Result *-47.64% students were suffering from Ear, Nose, Throat disease and found that Rhinitis as commonest followed by otitis media, Pharyngitis, sinusitis, wax, Allergic rhinitis etc. more prevalent in 11-13 years of age group, no gender differentiation, high in low socioeconomic group and tribes.*
Conclusion- *Ear, Nose, Throat morbidity was high so awareness and health education to Teachers and parents about the disease, complications due to disease and prevention to be given along with health facility to be provided or school health programme to be carried out.*
Keywords: *Ear, Nose Throat disease, Students, morbidity, prevalence,population.*

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I. Introduction

India the most populated country stands second in world with 35% children population out of the total population[1]. Surguja District is a northern District of Chattishgarh , which has a population of 2,359,886 (Male-1193129, female-1166757) according to 2011 census[2]. Literacy rate of 60.01%, male: female literacy 69.53% :50.32% and the children population of 0-6 years age constitutes 16.12%. 10.29% population lives in urban area, total of 89.71% population lives in rural area of surguja. children population in rural area was 16.66%, urban area 12.77% with child sex ratio of 967 in rural area and 903 in urban area. Total of 581436 (Males-341010, Females-240426) 24.64% scheduled Tribe population in surguja, 93.8% out of total scheduled Tribe population are living in rural areas, only 6.2% are in urban area.

Health of a child is viewed absence as of disease and not comprehensive health. Health is the vital for overall development and determines their ability to acquire knowledge and skill[3], which gets affected by the diseases of Ear, Nose, Throat and if untreated then results in social and psychological problem among child and their parents. Untreated diseases may iead to speech disorder, poor academic performance and lower quality of life. Knowledge of the predisposing factors associated is important in identifying children at risk for recurrent condition. Study conducted in Canada the factors were responsible for ear morbidity were male, aboriginal status and mother's age Dhoonge JM et al 2003. Another study in Australia showed factors responsible were poor living condition, exposure to smoke and lack of access to medical care Jones LL et al 2012. Children suffer from diseases of Ear, Nose, throat frequently. Otitis media, adenoid, Tonsillitis, rhinitis, epiglottitis and laryngotracheobronchitis[3] are more common in children than adults, may be due to change of weather in winter and rainy season or many factors like wide and horizontal situation of Eustachian tube, less immunity, malnutrition, poor hygiene, overcrowding , low socioeconomic status and ignorance of parents Sox CM et al 2008. Inflammation of middle ear cleft (otitis media) is one of the most common disease in childhood leading to hearing loss in children. upper respiratory tract infection causes complications in children as otitis media,

Tonsillitis and sinusitis further contributes to morbidity of Ear, Nose, Throat Karl J Kyamer et al 2009. Fortunately, mortality is very low in Ear, Nose, Throat diseases but the morbidity is very high and the complications of these diseases may create emergency situation[3].

Present study aims to find out the prevalence of morbidity of Ear, Nose, Throat diseases among the students of Middle and Higher secondary school did not seek medical advice at any medical centre. The objective behind this study is to find out prevalence of morbidity in school population and association of various socio-demographic factors with Ear, Nose, Throat morbidity pattern.

II. Material and Method

The study was conducted in different Government Middle and Higher secondary schools in surguja from January 2019 to june 2019. Cross sectional study from class VIth to XIIth, maximum students were taken for the study with general demographic details such as age, sex, address for rural or urban, socioeconomic status, mother's education status ,tribal or non tribal, complaints about Ear Nose Throat disease and Examination of Ear, Nose, Throat done for all the students and filled the predesigned proforma after getting the approval from Ethical committee. Instruments used during examination were Otoscope, Head light, ear speculum, Tunning fork, Tongue depressor, Thudicam's nasal speculum, and jobson horne probe. This was a screening so all the students with morbidity of Ear, Nose and Throat were treated with medicines and follow up was done at ENT OPD of Government Medical college Ambikapur by doing posterior rhinoscopy, indirect laryngoscopy nasal endoscopy examination and all the investigations required such as pure tone audiometry, Tympanometry, X-Rays, Blood tests, culture sensitivity,. Inclusion of all the students complaining of ear nose throat symptoms and clinical features. Exclusion done for the diseases other than Ear Nose Throat involvement and students with cough and expectoration and Headache due to ophthalamic or neurological causes. We excluded the students with inadequate information

III. Result

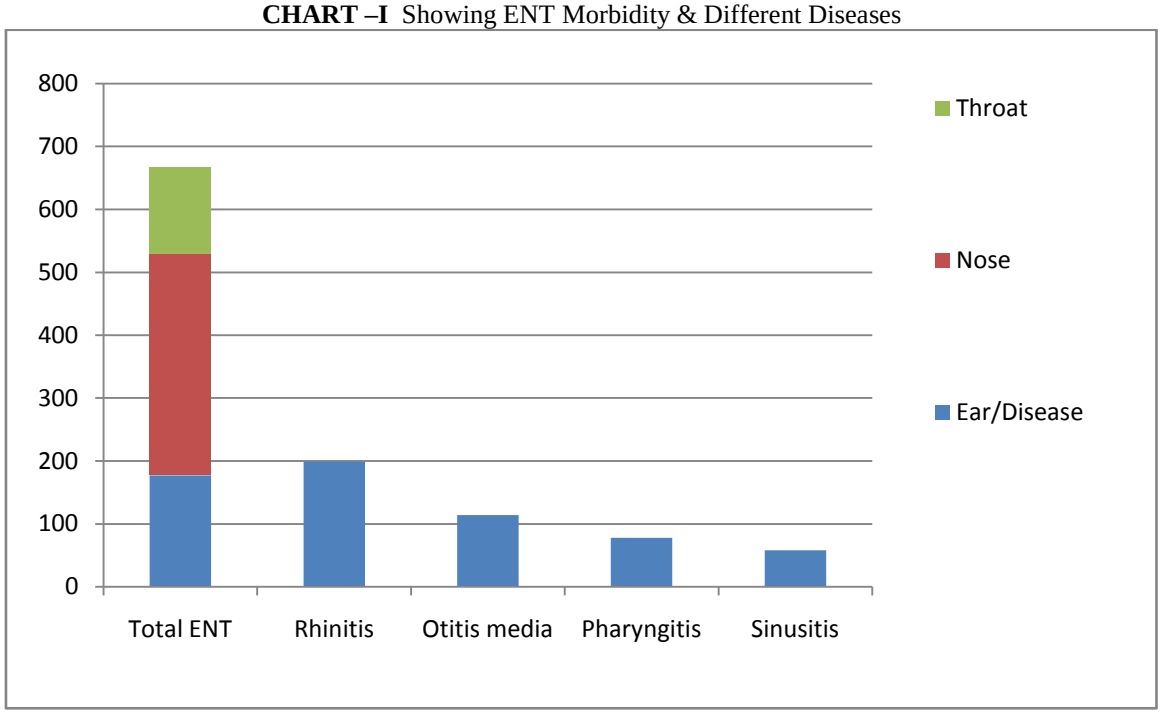
In our study a total of 1400 school students examined at schools of surguja and total of 667 (47.64%) students of age 11-18 years were suffering from diseases of Ear Nose and Throat. Table I showing that ear disease was prevalent in about 12.64%, Nose in 25.21% and throat related disease in 9.79%. in Ear disease commonest was suppurative otitis media (6.28%) followed by wax (2.36%) and secretory otitis media (1.86%).Diseases prevalent in Nose were Rhinitis (14.21%), followed by sinusitis (4.14%),Allergic Rhinitis (2.78%) and Epistaxis (2.21%). Throat involvement includes Pharyngitis (5.57%), Tonsillitis (1.92%) and Cervical Lymphadenopathy (1.36%).

Table -I Showing Ear ,Nose Throat Diseases

Ear/Nose/Throat disorders	Diseases	Number	Population	Morbidity	ENT
Ear Diseases Total number-177 Percentage-overall-12.64% ENT morbidity-26.54%	Suppurative otitis media	88	6.28	13.19	49.72
	Secretory otitis media	26	1.86	3.9	14.69
	Otitis Externa	16	1.14	2.4	9.04
	Foreign body ear	5	0.36	0.75	2.8
	Wax	33	2.36	4.9	18.64
	Others	9	0.64	1.35	5.08
NASAL Diseases Total number-353 Percentage-overall-25.21% ENT morbidity-52.92%	Rhinitis	199	14.21	29.83	56.37
	Sinusitis	58	4.14	8.7	16.43
	Allergic Rhinitis	39	2.78	5.85	11.05
	Epistaxis	31	2.21	4.65	8.8
	Nasal Polyposis	4	0.28	0.6	1.13
	Deviated Nasal Septum	13	0.93	1.94	3.68
	Foreign Body	3	0.21	0.45	0.85
	Trauma	2	0.14	0.3	0.57
	OTHERS	4	0.28	0.6	1.13
Throat Diseases Total number-137 Percentage-overall-9.79% ENT morbidity-20.4%	Tonsillitis	27	1.92	4.05	19.7
	Pharyngitis	78	5.57	11.7	56.93
	Lymph Node Enlargement	19	1.36	2.84	13.87
	Adenoid	3	0.21	0.45	2.19
	Foreign Body	4	0.28	0.6	2.92
	Others	6	0.43	0.9	4.38

Total- 667-47.64%

CHART –I Showing ENT Morbidity & Different Diseases



We divided students in to various age groups 11-13 years, 14-15years and 16-18 years. In 11-13 years group morbidity was 19.93% (male-44.44%, female-55.55%),14-15 years 15.07% (44.95%, female-55.05%) and in age group 16-18 years was 12.64% (male-44.63%, female-55.37%).

Table II- Distribution of Ear, Nose Throat morbidity in age groups-

Age group	Male	Female	Total	Percentage
11-13 years	124	155	279	41.8%
14-15 years	94	117	211	31.63%
16-18 years	79	98	177	26.5%

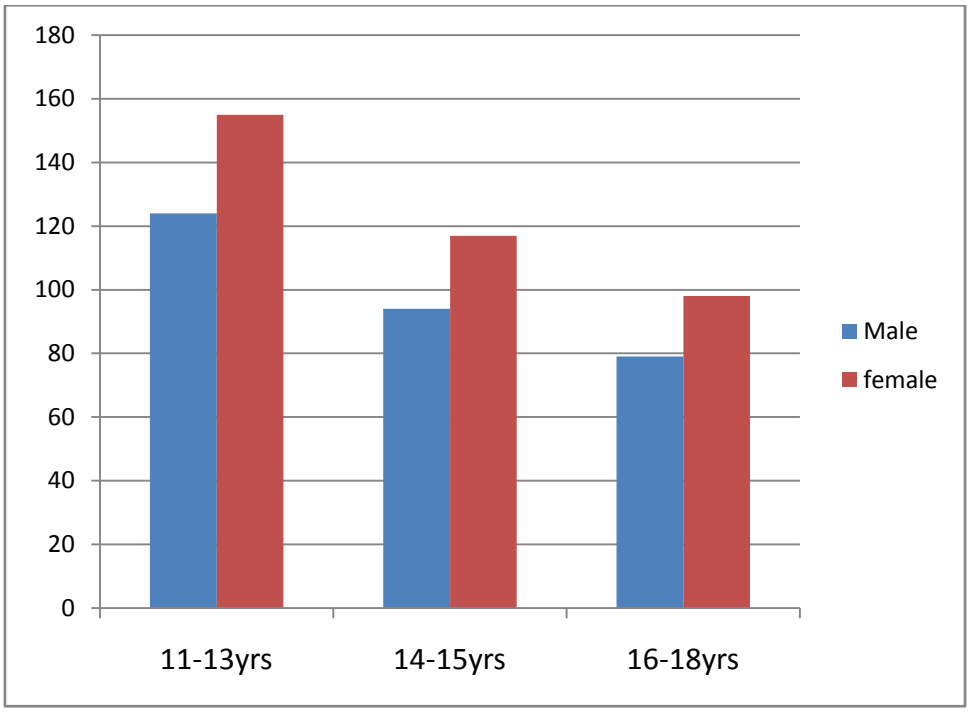
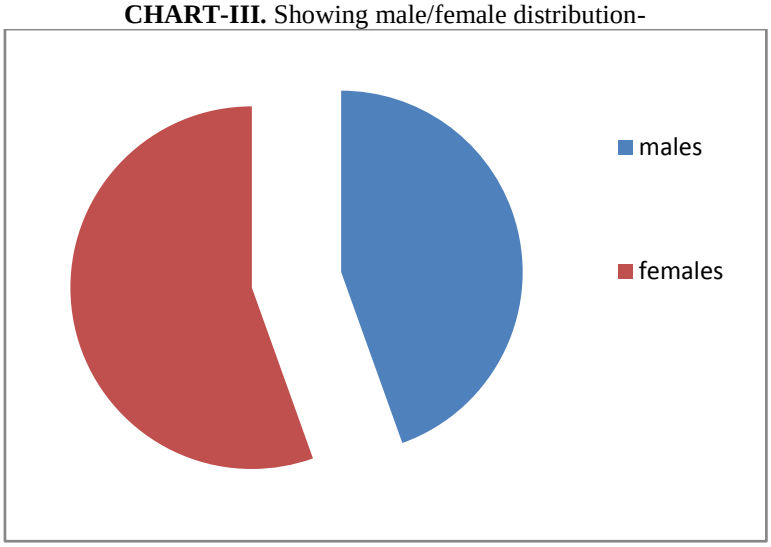


CHART II-Age distribution of morbidity with gender.

Table III- showing male/female distribution in other factors responsible.

Factors	Male no.	%	Female no.	%	Total no.	%
ENT MORBIDITY	297	44.53	370	55.47	667	47.64
Rural area	128		167		295	44.23
Urban area	167		215		372	55.77
Low socio-economic status	167		207		374	56.07
Mid &High socio-economic status	130		163		293	43.93
Literate Mother					475	71.22
Illiterate Mother					192	28.28
Tribal					270	40.47
Non Tribal					397	59.52

CHART-III. Showing male/female distribution-



A Total of 667 students found to be morbid with Ear Nose and Throat diseases and among them 44.53% Male students and 55.47% were Females. we studied various socio-demographic factors related to morbidity. Students residing in rural area were 44.23% (Males-43.39%, Females-56.61%) and urban area 55.77% (male-42.20%, female-57.80%). Students with different socio-economic status most of students were from low socio-economic status 56.07% (male-44.65% ,female-55.35%) and Middle socio-economic status 43.93% (male-44.37%,female-55.63%) . Literacy among mother's of students found 71.22% while 28.78% were Illiterate. In our study Tribal students comprises of 40.47% and non tribal 59.52% among the students who found to be morbid with Ear, Nose and Throat diseases.

IV. Discussion

Prevalence of morbidity due to Ear, Nose, Throat was common among students of middle and Higher secondary schools in surguja is 47.64%. A cross sectional study was conducted among 1400 students of Middle and Higher Secondary schools. Students suffering from Ear diseases(12.64%) were suppurative otitis media (6.28%) followed by wax (2.36%) and secretory otitis media (1.86%) , otitis externa (1.14%),foreign body ear(0.36%), wax (2.36%) and other includes preauricular sinus, trauma, Haematoma auris. A study among Malaysian school revealed Middle ear infection prevalence of 7.26% by S Elango et al 1991 Rural population are more prone to otitis media against urban children reported by Annie Jacob 1997, in study from rural school of south india found otitis media 17.6% of children. Study conducted by Charu kohli et al 2016 observed 18.8% Ear diseases in children, Harika surapaneni et al, 2016; reported 22.13%.Mahajan M, Bhandari S 2000 reported high incidence of otological morbidities. Although in our study Ear Wax was only 2.36% but Harika surapaneni et al, 2016; reported 18% of all ear disorders and similarly same observation reported by Yeli S, 2015 and Keshve SP, Kumar N 2010, R Nepali, B Sigdel 2012 reported that the most common ear disorder was Ear Wax ,which reported 2.9% of Ear nose throat morbidity accounted for 40% of the cases. Otitis externa was reported as 1.14% of total students while Harika surapaneni et al, 2016; reported 2.9% of Ear nose throat morbidity and R Nepali, B Sigdel 2012; 4.7 % of total study population. Foreign Body in external auditory canal (0.36%) is uncommon in elder children, this is probably because these children tend to insert objects due to boredom or curiosity[3] . Diseases prevalent in Nose were Rhinitis (14.21%), followed by sinusitis (4.14%), Allergic Rhinitis (2.78%), Epistaxis (2.21%), Nasal Polyposis (0.28%), Deviated Nasal septum (0.93%), Foreign Body Nose (0.21%), Trauma (0.14%) and others (0.28) includes Rhinospodiosis, Vestibulitis, Nasal Deformity and Hypertrophy Inferior Turbinates. For Rhinitis 56.17% out of nasal Diseases , Harika surapaneni et al, 2016

;reported Rhinitis as 55% of overall cases and 60.7% of nasal cases is consistent with present study. Yeli S, 2015; reported rhinitis was the most common disease 47.6% followed by Epistaxis 19.4% while in our study Rhinitis 56.17% and Epistaxis 8.8%. where as Kishve SP et al 2010; in Hospital among rural children reported Rhinitis in 38.3% and Epistaxis 16.6%.

Throat Diseases out of total population studied Pharyngitis (5.57%), Tonsillitis 1.92% Cervical Lymphadenopathy 1.36%, Adenoid 0.21% , Foreign Body 0.28% and others like Trauma, oral ulceration, mucocoele. Pharyngitis and Tonsillitis were found more common in present study, which is consistent with the study by Harika surapaneni et al, 2016 and R Nepali, B Sigdel 2012, but Yeli S, 2015 differs from this as Tonsillits was more common than Pharyngitis in their study. Recurrent infection of Tonsil, Adenoid can be the focus of Respiratory Tract infection is common in children of 4-7years of age. Phaneendra Rao RS et al, 2002; reported that Viral Tonsillitis is more common in younger children while Streptococcus species typically occurs in children aged 5-15 years.

Present study Female predominance of Ear, Nose, Throat morbidity 55.47% observed while Male was 44.53%, although this distribution has no significance. Like present study Harika surapaneni et al, 2016 and Yeli S,2015 reported Female as the predominant gender. Low socio-economic status students suffering from Ear, Nose, Throat disease was 56.07%, whereas from middle class was 43.93% which is consistent with the study by Viral shah, Nitin Lodha 2014 (50.56%) and Harika surapaneni et al 2016 (75%). Age group distribution of the study population present study found that Ear, Nose, Throat morbidity was common in 5-8 years 41.8% next was 9-11years 31.63% and 12-18 years 26.5% of age group compared to Harika surapaneni et al, 2016 6-15years 45% and Viral shah, Nitin Lodha 2014 10-14years 52.24%. Surguja District of chattishgarh is a tribal area with 24.64% tribal population and 93.8% tribal lives in rural area. In present study Ear, Nose, Throat morbidity in non tribal students 59.52% and in tribal 40.47%. Illiteracy of mother shows carelessness towards the early treatment and personal hygiene of student. Our study shows 28.78% of mothers were illiterate and 71.22% of mothers were literate, study by Viral shah, Nitin Lodha 2014 found it statistically significant to the relationship of literacy with treatment taken.

V. Conclusion

Prevalence of morbidity of Ear , Nose, Throat diseases was high among students (47.64%) most common diseases were Rhinitis in d n Nose, suppurative otitis media in ear and Pharyngitis in Throat diseases. Awareness and Health education of teachers and parents regarding the diseases and prevention of complications , socioeconomic status and Literacy to be done along with provision of Health facility for students by regular school Health programme. Awareness campaigns about the common cause of diseases, complication and correct method of prevention.

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