



GLOBAL JOURNAL OF MEDICAL RESEARCH: J
DENTISTRY AND OTOLARYNGOLOGY
Volume 14 Issue 1 Version 1.0 Year 2014
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

To Determine Prevalence of Chronic Suppurative Otitis Media with Reference to Unsafe Otitis Media in Primary School Going Children of Rural Setup of Wardha District

By Dr. Abhinav. D. Wankar & Dr. Sanjiv Golhar
National Board of Education, India

Introduction- Chronic Suppurative otitis media is a long standing inflammation of mucoperiosteum of middle ear cleft. It is associated with intermittent, continuous, mucopurulent or purulent ear discharge, hearing impairment and tympanic membrane perforation. C.S.O.M. was defined by task force of Fourth International Symposium of otitis media held in June 1987 in Bal Harbour, Florida as the condition "refer to a chronic discharge from middle ear through perforation of tympanic membrane." It usually leads to irreversible pathological changes. It is slow and insidious in nature. It is capable of causing irreversible sequel and fatal intracranial complications when medical and surgical inter venations are delayed. It is commonest cause of hearing impairment. It is often unnoticed (Zelhius et al 1940). Presence of fluid attenuates sound transmission which may result in hearing loss (Paparella 1986).

Chronic suppurative otitis media is a global disease. It is one of the important health problems in our country. Serious complications may arise from it. It is seen in all the continents of world having different environmental and socio-economic background. It is more prevalent in developing countries.

Poverty illiteracy, crowding, malnutrition are root factors for the development of Chronic Suppurative otitis Media and a large group of society are suffering from it. The morbidity and mortality associated with otitis media is a really a challenge for health care systems. Surprisingly there are very few studies done in India to know the burden of disease on the society.

GJMR-J Classification : NLMC Code: WD 700, WV 21



T O D E T E R M I N E P R E V A L E N C E O F C H R O N I C S U P P U R A T I V E O T I T I S M E D I A W I T H R E F E R E N C E T O U N S A F E O T I T I S M E D I A I N P R I M A R Y S C H O O L G O I N G C H I L D R E N O F R U R A L S E T U P O F W A R D H A D I S T R I C T

Strictly as per the compliance and regulations of:



To Determine Prevalence of Chronic Suppurative Otitis Media with Reference to Unsafe Otitis Media in Primary School Going Children of Rural Setup of Wardha District

Dr. Abhinav. D. Wankar ^α & Dr. Sanjiv Golhar ^σ

I. INTRODUCTION

Chronic Suppurative otitis media is a long standing inflammation of mucoperiosteum of middle ear cleft. It is associated with intermittent, continuous, mucopurulent or purulent ear discharge, hearing impairment and tympanic membrane perforation. C.S.O.M. was defined by task force of Fourth International Symposium of otitis media held in June 1987 in Bal Harbour, Florida as the condition "refer to a chronic discharge from middle ear through perforation of tympanic membrane." It usually leads to irreversible pathological changes. It is slow and insidious in nature. It is capable of causing irreversible sequel and fatal intracranial complications when medical and surgical interventions are delayed. It is commonest cause of hearing impairment. It is often unnoticed (Zelhius et al 1940). Presence of fluid attenuates sound transmission which may result in hearing loss (Paparella 1986).

Chronic suppurative otitis media is a global disease. It is one of the important health problems in our country. Serious complications may arise from it. It is seen in all the continents of world having different environmental and socio-economic background. It is more prevalent in developing countries.

Poverty illiteracy, crowding, malnutrition are root factors for the development of Chronic Suppurative otitis Media and a large group of society are suffering from it. The morbidity and mortality associated with otitis media is a really a challenge for health care systems. Surprisingly there are very few studies done in India to know the burden of disease on the society.

This is a small attempt to peep into magnitude of problem, where in school going children in Wardha District are studied.

II. REVIEW OF LITERATURE

A thorough research of this research topic was done. Search was done from internet which was com-

plemented by taking out the full research papers from library.

In April-june 2006, Dr P.T Wakode carried research relating to morbidity and mortality with otitis media. The study was a small attempt to look into magnitude of problem in society where in school going children in Yavatmal city were studied. The overall prevalence was found to be 3%. It was found commoner in students of lower socio economic strata. The research is related to my research as subjects selected are identical. Even environmental conditions are quite same. Same methodology is used.

Reports on prevalence of C.S.O.M. in African children by Okeowo in 1986 and Halama et al in 1986 showed that prevalence of C.S.O.M. was lower in African children than expected. Okeowo found prevalence to be 4.9% while Halama et al found it to be 3.8%. In both these reports the socio economic and living conditions were poor and this low incidence of C.S.O.M. was ascribed to genetic factors. My research was influenced by it as the target Population Selected were same. Socio economic strata and living conditions of which students selected were identical.

Indian Journal of otology in MARCH 1999 published work of Dr Arsi Saad. He studied Microbiological evaluation and management of Chronic Suppurative Otitis Media among Saudi children. Study showed that medical management in children with dry mopping and topical antibiotics was effective in controlling otorrhea and minimizing the referrals for surgery. This basis was used for treatment of children detected with C.S.O.M. It also guided with careful selection of local and systemic antibiotics guided by culture and sensitivity to avoid resistance to community used systemic antibiotics. It also suggested use of local frequent ear toilet as an effective treatment modality. It proved out to be very useful for selecting management of students diagnosed with C.S.O.M.

Dr Gulati and Dr Sudesh kumar in Indian Journal of otology in June 1997 suggested that prevalence of C.S.O.M. was found more in male (61%) than in females (39%). It also suggested that majority of cases belonged to lower and middle socio economic

Author ^α ^σ: Jawaharlal Nehru Medical College Sawangi (Meghe), Wardha. e-mail: abhinav.wankar@gmail.com

strata with Rural:Urban ratio of 2:1(65%:35%)Unhygienic condition, poverty,illiteracy,malnutrition have also been suggested as a basis of wide spread prevalence of C.S.O.M..It proved out to be helpful for a comparative study of cases of C.S.O.M between male and female in my study.The study was related to our study as my study aimed at finding prevalence of C.S.O.M. in school children of different economic strata, different level of sanitation in rural setup of Wardha.

In 1997 Dr H.c. Rushton et al studied prevalence of otitis media with effusion in multicultural schools in Hong kong.In this study 177 students from multicultural schools between 5years to 7 years were studied with otoscopy.It was found that Chinese children had a significant lower prevalence (1.3%)than Caucasian children(9.5%).Reason for lower prevalence of C.S.O.M .in Chinese children needed further research This study related to my research as it was also cross sectional study as and study population was identical to my research.

III. AIM & OBJECTIVES

a) *Aims and objectives*

- i. *Aim*
 1. To find out prevalence of C.S.O.M. among primary school going children of rural setup in Wardha district.
 2. To inform expert doctors about cases of C.S.O.M. and helping patients with treatment.
 3. To carryout thorough research which can act as a pivot to future research in this topic.
- ii. *Objectives*
 1. To evaluate the comparative assessment of prevalence of C.S.O.M. among primary school going children of rural setup in Wardha district.
 2. To reduce morbidity caused by C.S.O.M. among school going children.

IV. MATERIALS AND METHODS

a) *Study design*

This is a descriptive, cross sectional materialistic study.

b) *Methodology*

Sample pattern and setting after obtaining the informed consent, 1000 students of primary school of villages in Wardha district were be studied.

Study was carried out over a period of 12 months. Primary school going children ranging from 5 years to 10 years were selected as study. Deaf and dumb schools were excluded from study. Schools were selected in such a way that students of all economic strata were included. Students were classified into age groups as:

5-6 years

6-7 years

7-8 years

8-9 years

9-10 years

The proforma was prepared to carry out the study.

The initial school survey was carried out and students were examined according to proforma, which were distributed to children or to respective class teachers. And the teachers were asked to fill up the primary information in consultation with parents regarding the main, place of residence, family income, living condition and if possible history of major illness in past, in students or family.

The proforma was distributed and were collected on the next day, or on next visit of student. The students were examined with help of otoscope and other standard instruments used for routine E.N.T check up. Cases of chronic suppurative otitis media were referred to our hospital. In our hospital they were examined by our expert doctors and be given proper treatment. After conducting the primary survey students were grouped according to age, socio-economic conditions (Revised Prasad classification),and level of sanitation. Message was conveyed to parents, teachers and students themselves. The prevalent chronic suppurative otitis media in students was classified into safe (tubotympanic) and unsafe (atticoantral) type.

After completion of study, a chart was prepared to carry out statistical work which was done with help of Department of Preventive and Social Medicine, J.N.M.C, Sawangi (M), Wardha.

c) *Consent Approval:* As enclosed here with

i. *Instruments*

1. Socio-demographic profile sheet
2. Clinical profile sheet
3. E.N.T. instruments set

ii. *Inclusion criteria*

1. Either sex
2. School going rural children between age group 5-10 year.
3. Informed consent

V. OBSERVATIONS AND RESULTS

Total of 5 schools were selected and 960 students were examined as per pro forma.

a) Sex Wise Distribution

Out of 960 students, 526(54.79%) were male and 434(45.20%) were female

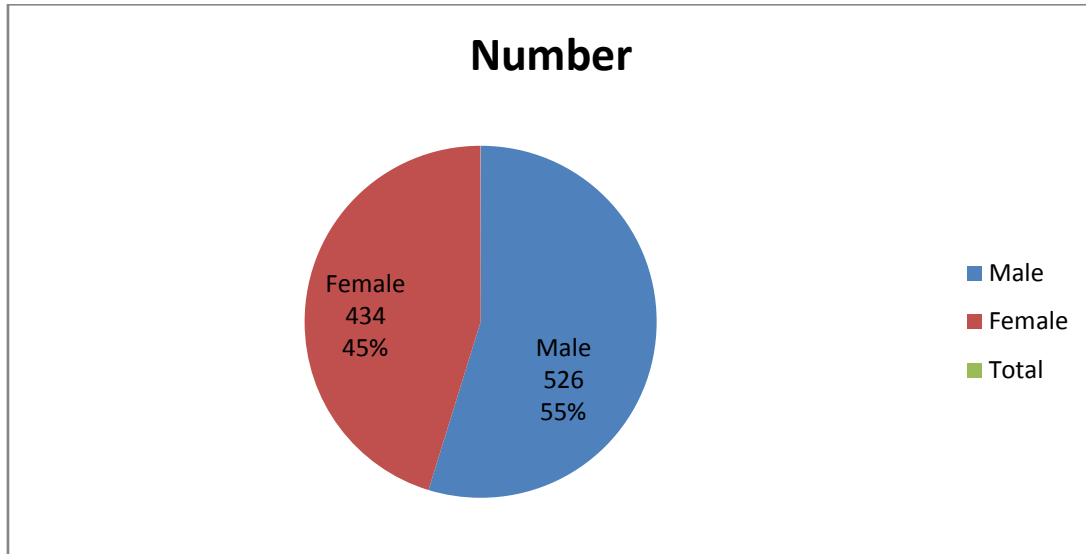


Figure 1

b) Age wise distribution

Table 1 : 960 students of different age groups were studied. Following were age wise distribution

Age of students	Number of students
5 years	73
6 years	157
7 years	131
8 years	181
9 years	161
10 years	257

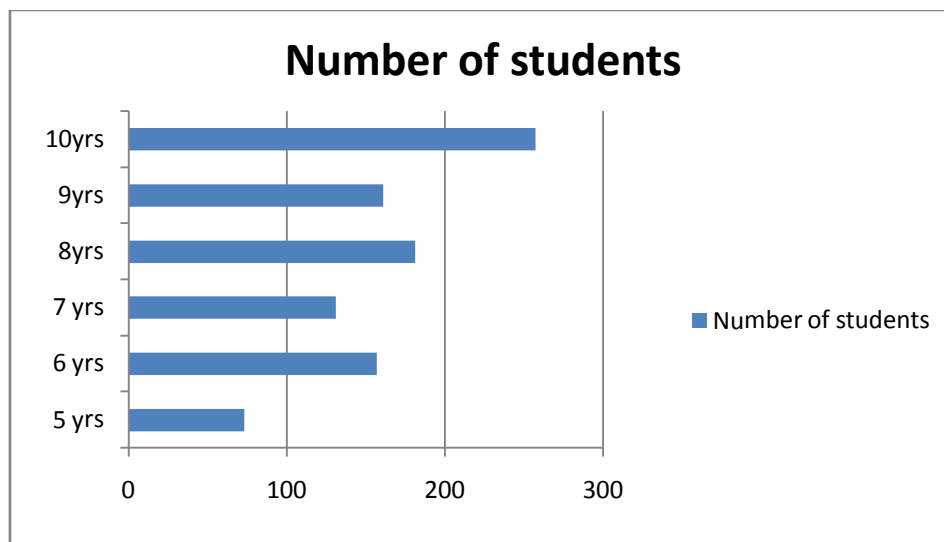


Figure 2

c) C.S.O.M .Findings

In first cross sectional examination, out of 960 students, 63 students (6.56%) were having chronic suppurative otitis media.

Out of 63 students suffering from chronic suppurative otitis media, 56(5.83) belonged to safe (tubo-tympanic) and 7(0.72) belonged to unsafe (atticoantral) category

Table 1

C.S.O.M cases	Number of students	% of students
Safe	56	5.83
Unsafe	7	0.72
Total	63	6.56

Figure 3

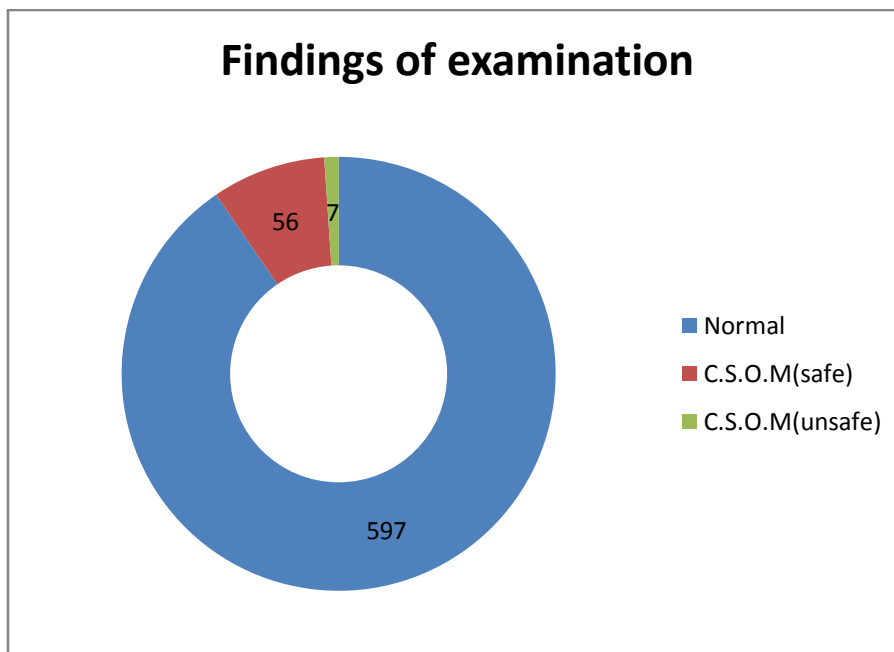


Figure 4

d) Relation of chronic suppurative otitis media with socio-economic status

Table 3

	CSOM Cases	Normal Cases	Total
Upper	5	83	88
Middle	16	365	381
Lower	42	449	491

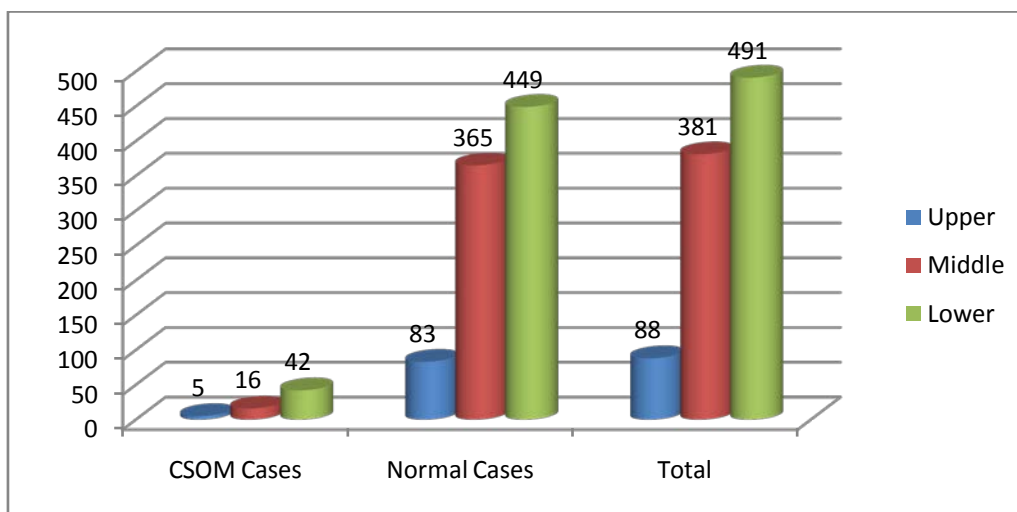


Figure 5

Chi-square- 6.714, Degree of freedom- 2, P = 0.034, Statistically significant

e) Relation of chronic suppurative otitis media with level of sanitation

Table 4

	CSOM Cases	Normal	Total
Good	6	115	121
Moderate	24	549	573
Bad	33	233	266

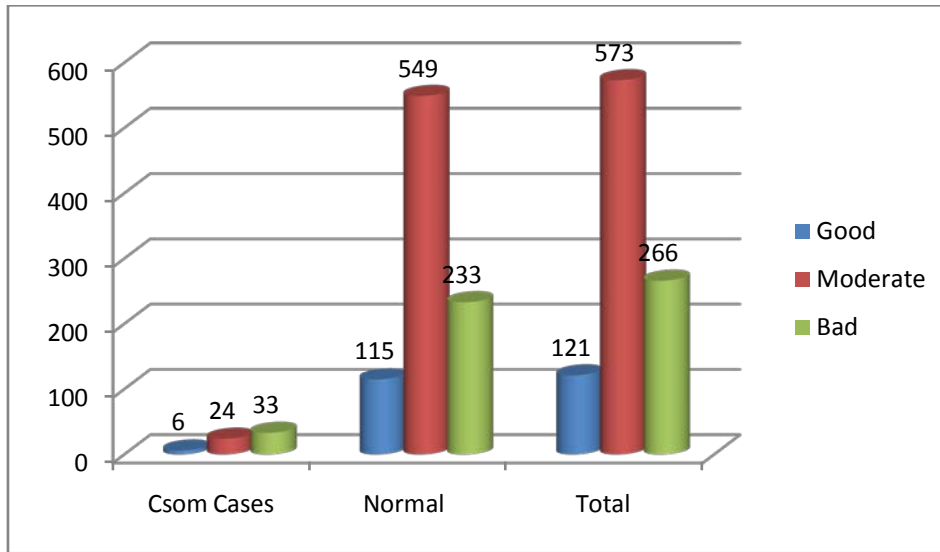


Figure 6 : Chi-square- 20.59 Degree of freedom- 2 P < 0.0001 Statistically significant

f) Sex wise distribution of chronic suppurative otitis media cases

Table 5 : It was found that out of 63 students suffering from C.S.O.M, 38 (60.31) students were male while 25 students(39.68) were female

Sex of student	Number of C.S.O.M Case	% of case
Male	38	60.31
Female	25	39.68

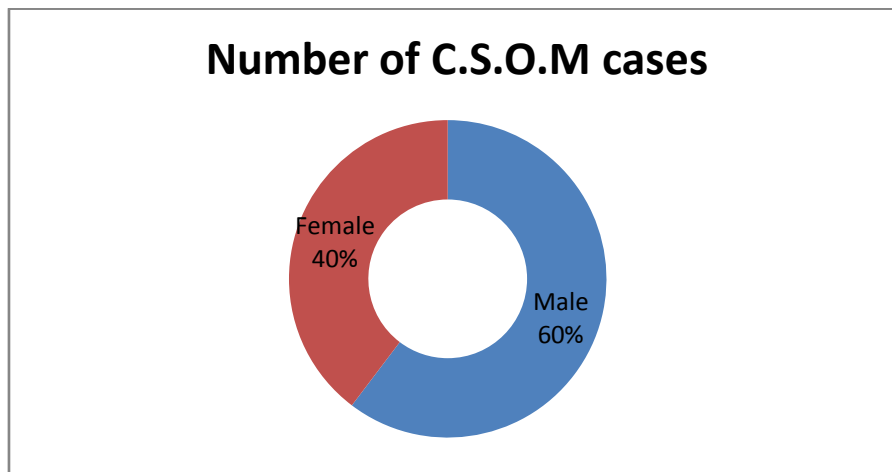


Figure 7

g) Distribution of different C.S.O.M .cases according to different socio-economic data

Table 6 : 63 cases of C.S.O.M. were distributed according to different socio-economic status. Following were results

Socio-economic status	Number of C.S.O.M cases	% of C.S.O.M cases
Upper	5	7.93
Middle	16	25.39
Lower	42	66.66

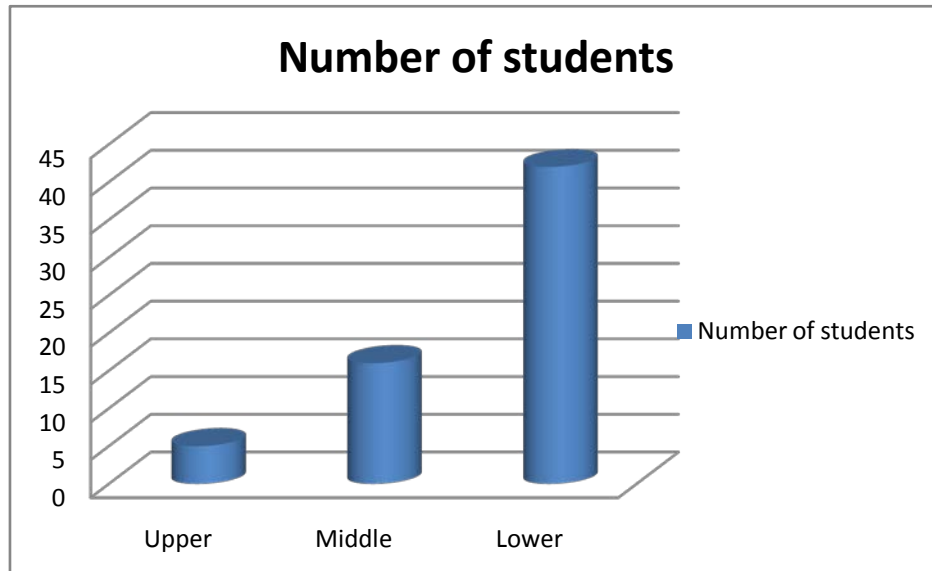


Figure 8

h) Distribution of students according to Level of sanitation

Table 7 : Level of sanitation being an important factor, 63 cases were distributed according to level of sanitation

Level of sanitation	Number of C.S.O.M cases	% of C.S.O.M cases
Good	6	9.52
Moderate	24	38.09
Bad	33	52.38

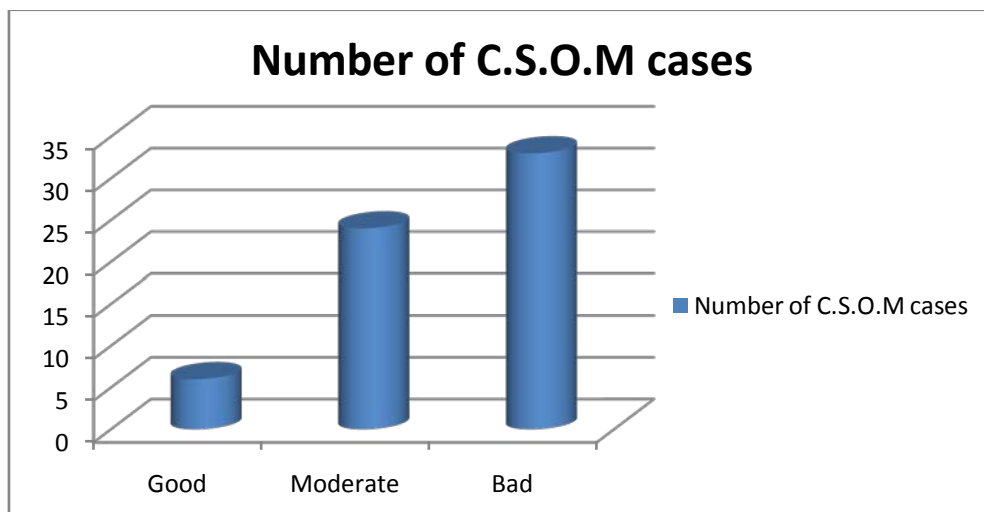


Figure 9

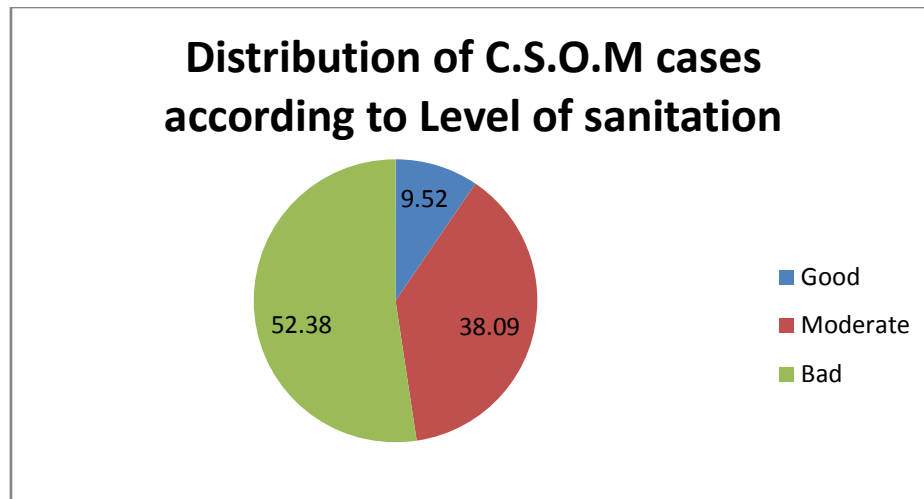


Figure 10

i) Distribution of C.S.O.M .cases according to different age groups

Table 8 : When C.S.O.M cases were distributed according to different age groups following were observations

Age of students	Number of students suffering from C.S.O.M
5	0
6	1
7	3
8	19
9	19
10	21

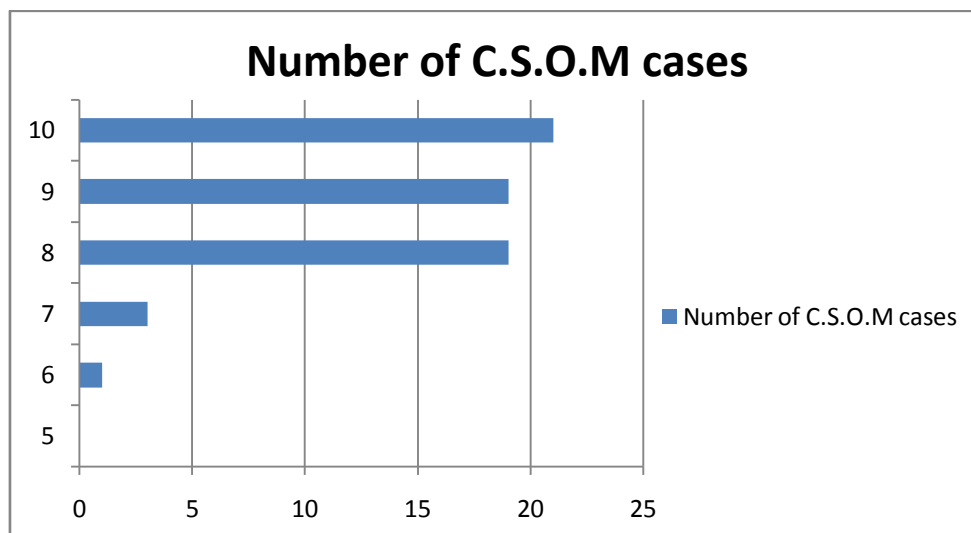


Figure 11

VI. DISCUSSION

In present study it has been observed that overall prevalence of Chronic Suppurative Otitis media is 6.56%.

Out of this 6.56%, 5.83% were tubotympanic type while 0.72% Were attico antral type.

The literature on prevalence of disease is sparingly available particularly in recent years. Most of studies (table9) are from different ethnic environment background. With the advent of medical sciences, increase in general awareness, the prevalence rate of otitis media is bound to change. Hence it is difficult to

compare the present study with other workers. Still a few studies can be taken into consideration to compare with the present study.

Table 9

Year	Country	Worker	Prevalence
1965	British Columbia Canada	K.Cambon	15.50%
1970	Alaska-North America	Dwayne Reed et al	15%
1985	Pohenpi-Island in Pacific Ocean	G Dever et al	3.97%
1993	Cairo,Egypt	Motta et al	2%
1996	Tanzania,Africa	Manja BM et al	2.60%
1985	Korea	Noh et al	6.24%
1991	Malaysia	Elango	4.36%
1993	Saudi Arabia	H.Mohammad	1.50%
1961	Lucknow(U.P)India	R.N.Mishra et al	14.65%
1965	Vellore south India	Kapur Y.P	7.43%
1974	Madurai South India	Rajendrakumar P.V	69.70% in patients of ear complaints
1974	Lucknow(UP) India	Pal et al	3.59%
1997	South India	Rupa et al	7.74%
1999	South India	Rupa et al	6%
2000	Yavatmal Maharashtra India	P.T Wakode et al	3%

The studies of Cambon¹ and Reed² show prevalence rate of 15.5% and 15% which differs from our present study. But they are old studies and nearer the North Pole (Canada and Alaska) where there is cold climate. The climate may be a contributory factor for increased prevalence of otitis media

Out of Indian workers Mishra et al³(1961) showed prevalence rate of 14.65% but this work is quite old (1961) and done in Uttar Pradesh which is thickly populated state and hence the high figure is expected. Rajendra kumar PV⁴(1974)69.70%did his work on O.P.D patients only. Hence figure does not represent true prevalence in the society.

Both studies of Rupa et al^{5,6} in 1997and 1999 show prevalence of 7.4%and 6% .These studies were based on rural population in remote areas of Tamil Nadu.

However prevalence rate in our study matches with prevalence rate of Motta et al⁷ (1993)2% at Cairo-Egypt, Minja et al⁸ (1996)2.6%inTanzania, Pal et al⁹ (1974)3.5%at Lucknow–India but none of above studies were carried out by taking samples directly from society.

Almost all of them are hospital based studies. However they give information regarding magnitude of disease.

Table 10 : Peak occurrence of otitis media in different parts of world

Year	Worker	Country	Month
1940	Heller George and Englewood	America	October and April
1969	Robert Brownlee et al	America	March
1970	Dwayne Reed et al	Alaska,America	March and July
1979	Jerome o klein	America	October to March
1982	Pulender J.Coworkers	Finland	January
1996	Riquelme Perez.M	Spain	February
2000	P.T Wakode et ai	India	July and October

The literature shows peak occurrence of fresh cases of otitis media in different months in different countries (Table10).In America it is in October to April which are winter months in that country. Our study was carried in months of July and August; hence there is high incidence of cases of otitis media during this period.

Our study clearly indicates that the socio economic strata and prevalence of chronic suppurative otitis media are inversely proportional to each other.66.66% of cases suffering from Chronic Suppurative Otitis Media were from lower economic

strata while only 7.93% of total cases of Chronic suppurative otitis media were from upper economic strata.

Our study indicates that level of sanitation has a major role to play in prevalence of chronic suppurative otitis media.

Level of sanitation is inversely proportional to prevalence of the disease.52.38% of total cases were having poor sanitation while 38.09%wwere having moderate sanitation. On the other hand only 9.52% of cases had good sanitation. Our subjects were mainly

school going children of rural setup hence there level of sanitation was bound to be low.

Our studies also indicates that prevalence of chronic suppurative otitis media was more in male(60.31%) than in female(39.68%).This is because level of sanitation among girls was better than boys in our study.

VII. CONCLUSION

1. The overall prevalence of chronic suppurative otitis media in school going children between 5 years to 10 years in rural setup of Wardha district was found to be 6.56%
2. Out of this 5.83% were safe type while 0.72% was unsafe type.
3. Association of chronic suppurative otitis media with low socio economic strata was found to be statistically significant. It is more prevalent in low socio economic strata (Chi-square- 6.714, Degree of freedom- 2, $P = 0.034$, statistically significant).
4. Association of chronic suppurative otitis media with low level of sanitation was found to be statistically significant. It is more prevalent in children having low level sanitation (Chi-square- 20.59, Degree of freedom- 2, $P < 0.0001$, statistically significant)
5. The prevalence of chronic suppurative otitis media was more in male than in female. The reason for this requires further research.

A large group of population suffers from morbidity of otitis media.It is really challenge for health care system .As my study was population based study this data can be of vital importance to planner of health care systems. The paucity of such studied in recent Indian literature speaks out the need of such studies in different parts of the country.

VIII. SUMMARY

This study was carried to find out prevalence of Chronic Suppurative Otitis Media among primary school children of rural setup in Wardha District. In addition to it aimed to inform expert doctors about cases of C.S.O.M and helping patients with treatment. C.S.O.M being global disease and important health problem in our country was chosen for research.

A descriptive, cross sectional materialistic study of 1000 students of age group from 5-10 from primary school of villages in Wardha district were studied. Proforma was prepared to carry out study. Cases of C.S.O.M. wer referred to our hospital where they were examined by our expert doctors and were given proper treatment.

The overall prevalence of C.S.O.M in school going children was 6.56%.Out of this 5.83% were safe(Tubotympanic)type while 0.72% were unsafe(attico antral) type.It had inverse relation with economic strata and level of sanitation.66.66% of lower socio economic

strata and 52.39% were suffering from C.S.O.M. There was male predominance. Reason for it requires further study.

The magnitude of problem and its prevalence of Chronic Suppurative Otitis Media in our country depict a need of more studies in different parts of country

IX. SUGGESTION

Thorough research for C.S.O.M. in school going children, it depicted that C.S.O.M. can be prevented. It can lead to health promotion and improve overall improvement in health status of children. It can also limit disability.

Following are suggestions

1. Prevention of upper respiratory tract infection in children
2. Prevention of C.S.O.M. by improving level of sanitation among students.
3. Secretary Otitis Media being one of primary cause of C.S.O.M. periodic examination of students should be done.
4. Health education to children and teachers about C.S.O.M. This will enable early diagnosis of C.S.O.M.
5. Creating awareness among people about C.S.O.M.

X. BIBLIOGRAPHY

1. Cambon K; Galbraith J.D; 'Middle ear disease in Indians of Mount Currie Reservation, British Columbia, 'Canad, Med. Ass. Journal. 18(1965) Vol93; 1301-1305.
2. Reed D. and Dunn W' Epidemologic studies of otitis media among Eskimos children¹public health reports.Vol 85 No; 8(1970).699-705.
3. Mishra R.N; Bhatia M.L; Bhatia B.P.R 'Investigations of hearing in school children'. Indian journal of Otolaryngology. (1961); 13; 153-157.
4. Kumar P.V.R.'A study on incidence and etiology of deafness in South Indian population,'Indian journal of otolaryngology 1974; 3; 153-157.
5. V.Rupa; a Jacob; A. Joseph. 'Hearing impairment and Otitis media in a rural primary school in South India¹.Int Journal of Pediatric otorhinolaryngology. 39(1997)133-138.
6. V. Rupa; A Jacob; a Joseph¹.'Chronic Suppurative Otitis Media; Prevalence and practices among rural South Indian children.' Int Journal of pediatric otorhinolaryngo; ogy (1999)217-221.
7. Motta G.' Prevention and treatment of deafness. 'Hearing International (1993); 2(4); 7.
8. Motta G.' Prevention and treatment of deafness. 'Hearing International (1993); 2(4); #Chaturvedi et al (1998).
9. Pal J Bhatia M.L. 'Prasad B.G.: Dayal D; Jain Pc., Deafness among urban community-an epidemio-

logical survey at Lucknow (U.P);Ind
J.Med.Res.62(1974)857-868.

10. Heller G; Engelwood N.J.'A statistical study of otitis media of children' .Journal of Pediatrics (1940)17; 322-330.
11. Brownlee R.C; Cowan C.C; William R Deloache; Jackson H.P. Otitis Media in children.' Journal of Pediatrics (1969)75; 4;636-642.



GLOBAL JOURNALS INC. (US) GUIDELINES HANDBOOK 2014

WWW.GLOBALJOURNALS.ORG