

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

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7

8 **Abstract**

9 Introduction-Chronic Suppurative otitis media is a long standing inflammation of
10 mucoperiosteum of middle ear cleft. It is associated with intermittent, continuous,
11 mucopurulent or purulent ear discharge, hearing impairment and tympanic membrane
12 perforation. C.S.O.M. was defined by task force of Fourth International Symposium of otitis
13 media held in June 1987 in Bal Harbour, Florida as the condition "refer to a chronic discharge
14 from middle ear through perforation of tympanic membrane." It usually leads to irreversible
15 pathological changes. It is slow and insidious in nature. It is capable of causing irreversible
16 sequel and fatal intracranial complications when medical and surgical inter venations are
17 delayed. It is commonest cause of hearing impairment. It is often unnoticed (Zelhius et
18 al1940). Presence of fluid attenuates sound transmission which may result in hearing loss
19 (Paparella 1986). Chronic suppurative otitis media is a global disease. It is one of the
20 important health problems in our country. Serious complications may arise from it. It is seen
21 in all the continents of world having different environmental and socio-economic background.
22 It is more prevalent in developing countries. Poverty illiteracy, crowding, malnutrition are root
23 factors for the development of Chronic Suppurative otitis Media and a large group of society
24 are suffering from it. The morbidity and mortality associated with otitis media is a really a
25 challenge for health care systems. Surprisingly there are very few studies done in India to
26 know the burden of disease on the society.

27

28 **Index terms—**

29 **1 Introduction**

30 Chronic Suppurative otitis media is a long standing inflammation of mucoperiosteum of middle ear cleft. It
31 is associated with intermittent, continuous, mucopurulent or purulent ear discharge, hearing impairment and
32 tympanic membrane perforation. C.S.O.M. was defined by task force of Fourth International Symposium of
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39 Chronic suppurative otitis media is a global disease. It is one of the important health problems in our country.
40 Serious complications may arise from it. It is seen in all the continents of world having different environmental
41 and socio-economic background. It is more prevalent in developing countries.

10 DISCUSSION

42 Poverty illiteracy, crowding, malnutrition are root factors for the development of Chronic Suppurative otitis
43 Media and a large group of society are suffering from it. The morbidity and mortality associated with otitis
44 media is a really a challenge for health care systems. Surprisingly there are very few studies done in India to
45 know the burden of disease on the society. This is a small attempt to peep into magnitude of problem, where in
46 school going children in Wardha District are studied.

47 2 II.

48 3 Review of Literature

49 A thorough research of this research topic was done. Search was done from internet which was complemented
50 by taking out the full research papers from library.

51 In April-june 2006, Dr P.T Wakode carried research relating to morbidity and mortality with otitis media.
52 The study was a small attempt to look into magnitude of problem in society where in school going children in
53 Yavatmal city were studied. The overall prevalence was found to be 3%. IV.

54 4 Materials and Methods

55 5 a) Study design

56 This is a descriptive, cross sectional materialistic study.

57 6 b) Methodology

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

60 Study was carried out over a period of 12 months. Primary school going children ranging from 5 years to 10
61 years were selected as study. Deaf and dumb schools were excluded from study. Schools were selected in such a
62 way that students of all economic strata were included. Students were classified into age groups as: 5-6 years 6-7
63 years 7-8 years 8-9 years 9-10 years The proforma was prepared to carry out the study.

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

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

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

77 7 Observations and Results

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

79 8 a) Sex Wise Distribution

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

81 9 Findings of examination

82 10 Discussion

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

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

85 The literature on prevalence of disease is sparingly available particularly in recent years. Most of studies
86 (table9) are from different ethnic environment background. With the advent of medical sciences, The literature
87 shows peak occurrence of fresh cases of otitis media in different months in different countries (Table10).In America
88 it is in October to April which are winter months in that country. Our study was carried in months of July and
89 August; hence there is high incidence of cases of otitis media during this period.

90 Our study clearly indicates that the socio economic strata and prevalence of chronic suppurative otitis media
91 are inversely proportional to each other.66.66% of cases suffering from Chronic Suppurative Otitis Media were
92 from lower economic strata while only 7.93% of total cases of Chronic suppurative otitis media were from upper
93 economic strata.

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

96 Level of sanitation is inversely proportional to prevalence of the disease.52.38% of total cases were having poor
97 sanitation while 38.09% were having moderate sanitation. On the other hand only 9.52% of cases had good
98 sanitation. Our subjects were mainly Both studies of Rupa et al 5,6 in 1997 and 1999 show prevalence of 7.4% and
99 6%. These studies were based on rural population in remote areas of Tamil Nadu.

100 However prevalence rate in our study matches with prevalence rate of Motta et al 7 (1993) 2% at Cairo-Egypt,
101 Minja et al 8 (1996) 2.6% in Tanzania, Pal et al 9 (1974) 3.5% at Lucknow-India but none of above studies were
102 carried out by taking samples directly from society.

103 Almost all of them are hospital based studies. However they give information regarding magnitude of disease.
104 school going children of rural setup hence there level of sanitation was bound to be low.

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

107 VII.

108 11 Conclusion

109 1. The overall prevalence of chronic suppurative otitis media in school going children between 5 years to 10 years
110 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
111 unsafe type. 3. Association of chronic suppurative otitis media with low socio economic strata was found to be
112 statistically significant. It is more prevalent in low socio economic strata (Chi-square-6.714, Degree of freedom-2,
113 P = 0.034, statistically significant). 4. Association of chronic suppurative otitis media with low level of sanitation
114 was found to be statistically significant. It is more prevalent in children having low level sanitation (Chi-square-
115 20.59, Degree of freedom-2, P < 0.0001, statistically significant) 5. The prevalence of chronic suppurative otitis
116 media was more in male than in female. The reason for this requires further research.

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

12 VIII.

122 13 Summary

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

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

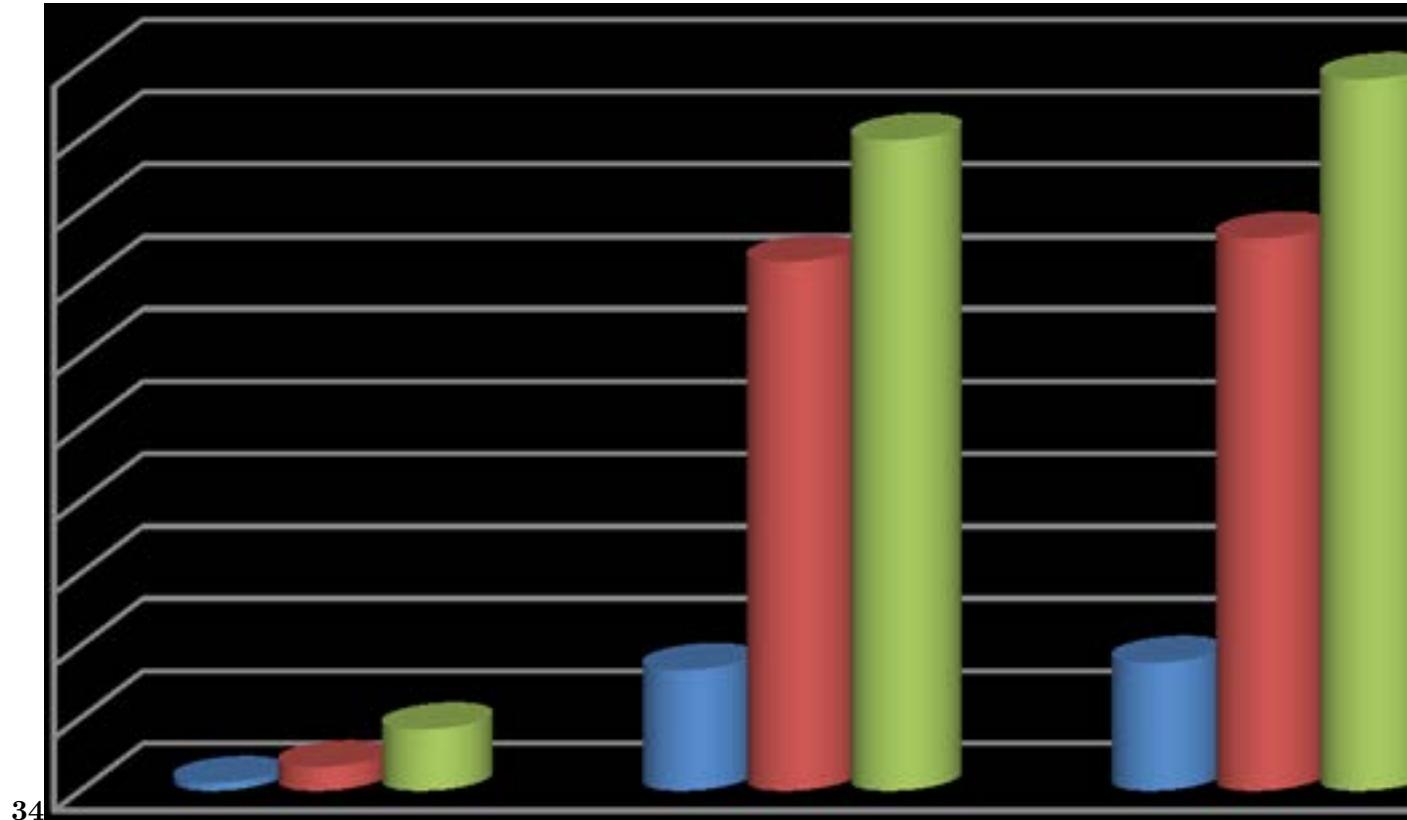
130 The overall prevalence of C.S.O.M in school going children was 6.56%. Out of this 5.83% were
131 safe(Tubotympanic)type while 0.72% were unsafe(attico antral) type. It had inverse relation with economic
132 strata and level of sanitation. 66.66% of lower socio economic strata and 52.39% were suffering from C.S.O.M.
133 There was male predominance. Reason for it requires further study.

134 The magnitude of problem and its prevalence of Chronic Suppurative Otitis Media in our country depict a
135 need of more studies in different parts of country ¹



1

Figure 1: Figure 1 b



34

Figure 2: Figure 3 Figure 4 d

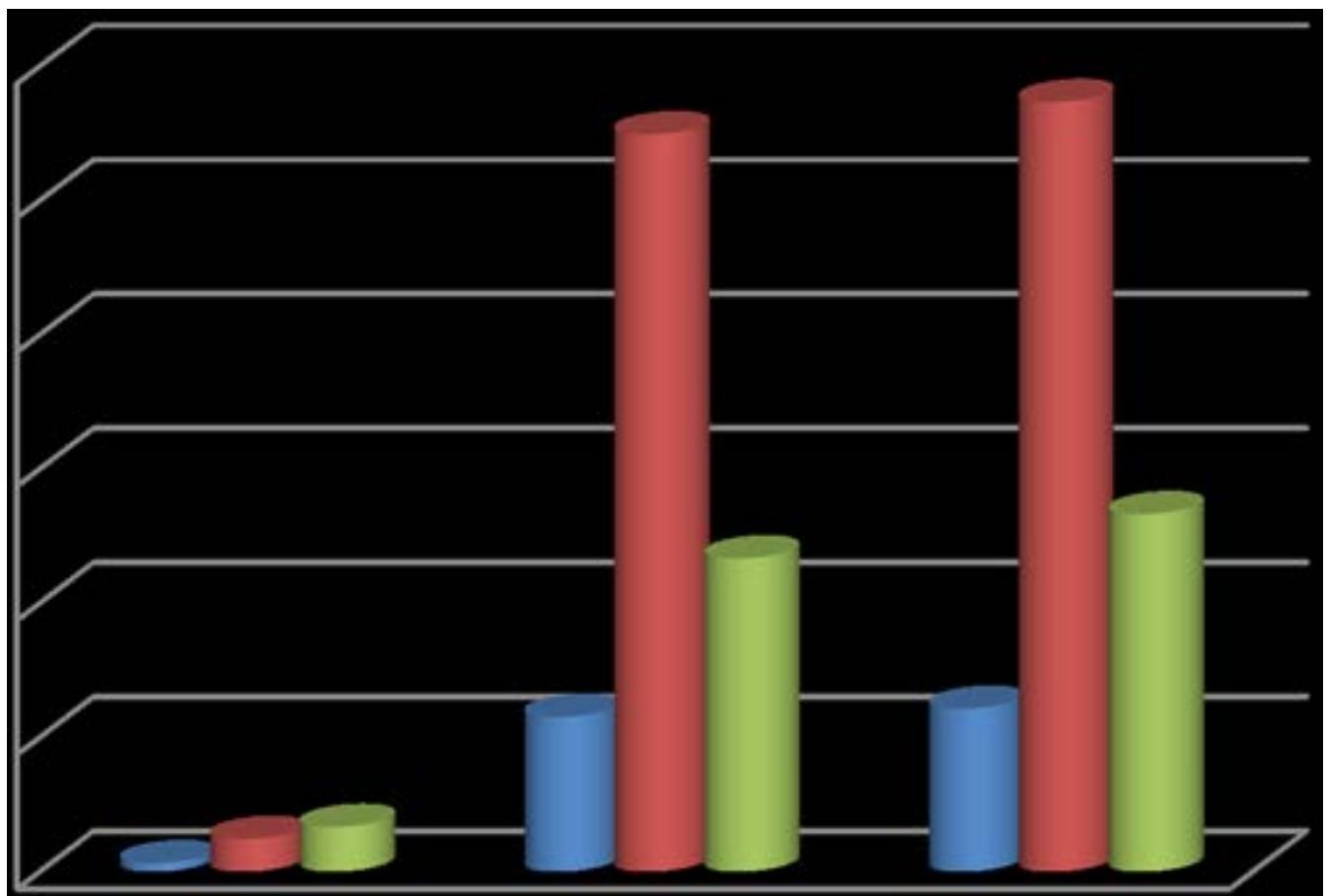


Figure 3:

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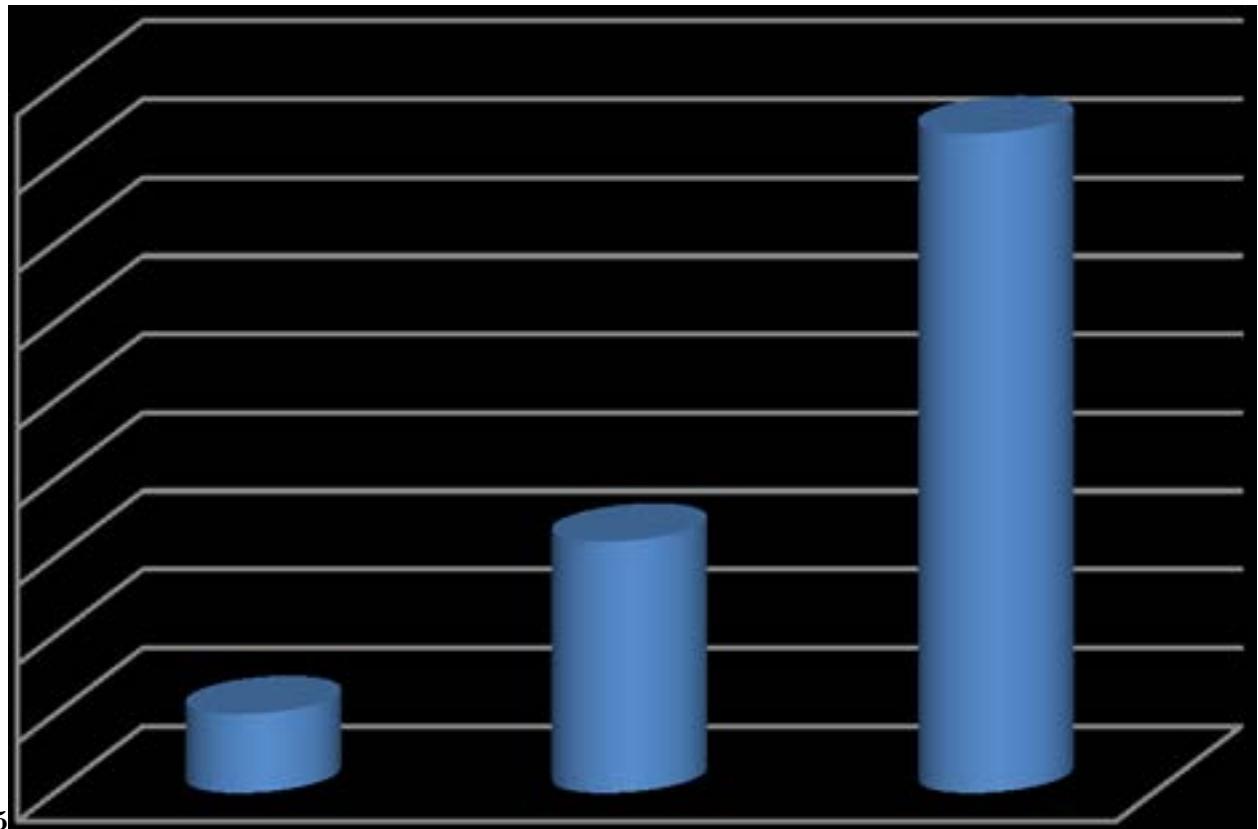


Figure 4: Figure 6 : 5 :

8

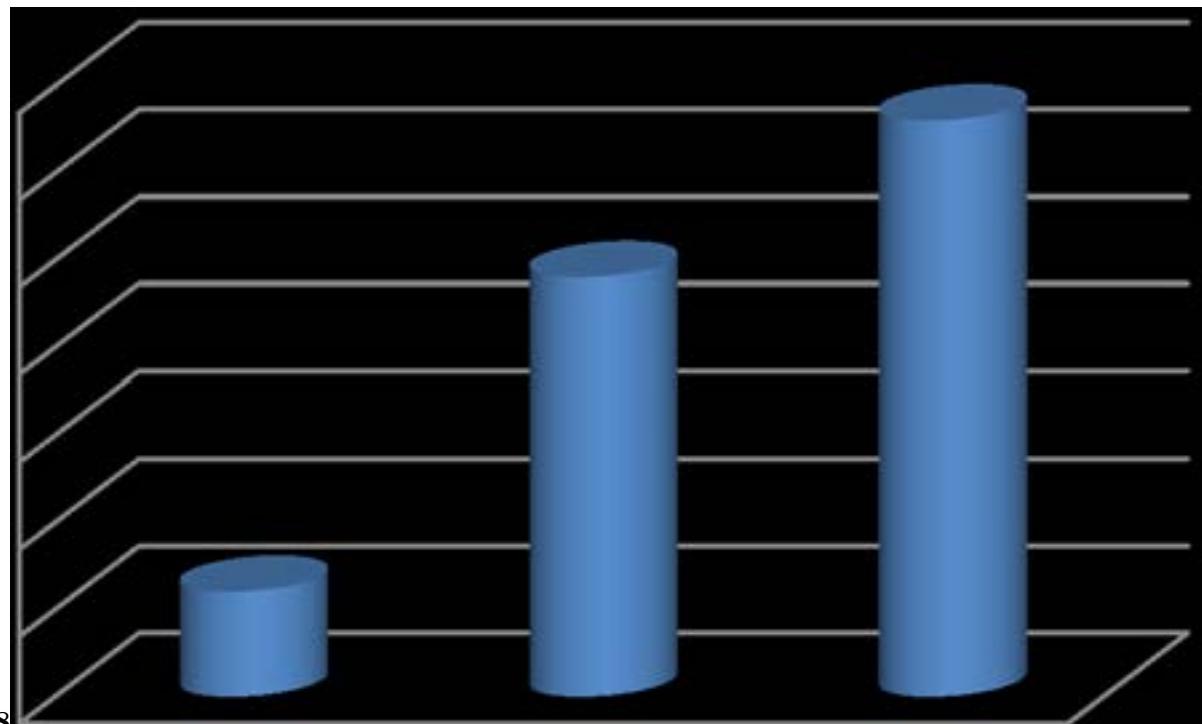


Figure 5: Figure 8 h

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 Cauc-
asian children(9.5%).

III. Aim & Objectives
Indian Journal of otology in MARCH 1999 published work of Dr Arsi Saad. He studied Micro-
biological 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

[Note: 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.]

Figure 6:

13 SUMMARY

1

| 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 7: Table 1 :

3

| CSOM Cases | Normal Cases Total | |
|------------|--------------------|-----|
| Upper | 5 | 88 |
| Middle | 16 | 381 |
| Lower | 42 | 491 |

Figure 8: Table 3

4

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

Figure 9: Table 4

6

| | | |
|--------|----|-------|
| Upper | 5 | 7.93 |
| Middle | 16 | 25.39 |
| Lower | 42 | 66.66 |

Figure 10: Table 6 :

7

| | | |
|----------|----|-------|
| Good | 6 | 9.52 |
| Moderate | 24 | 38.09 |
| Bad | 33 | 52.38 |

[Note: 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]

Figure 11: Table 7 :

8

| 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 12: Table 8 :

9

| Year | Country | Worker | Prevalence |
|------|---------------------------------|--------------------|--------------------------------------|
| 1965 | British Columbia Canada | K.Cambon | 15.50% |
| 1970 | Alaska-North America | Dwaynee 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% |

Figure 13: Table 9

10

| Year | Worker | Country | Month |
|------|-----------------------|----------------|-------------------|
| 1940 | Heller | George America | October and April |
| | Englewood | | |
| 1969 | Robert Brownlee et al | America | March |
| 1970 | Dwaynee 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 |

Figure 14: Table 10 :

¹³⁶ .1 Global Journals Inc. (US) Guidelines Handbook 2014

¹³⁷ www.GlobalJournals.org

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