
ORIGINAL RESEARCH ARTICLE**“Prevalence of Dental Caries and Designing the Interventional Strategies for School Children in Rural Konkan Region”***Asawari Modak¹ and Maruti Desai²**Department of Dentistry, B.K.L Walawalkar Rural Medical College and Hospital Sawarde,
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Abstract:

School remains an important setting offering an effective and efficient ways to reach over to children and through them, families and community members.⁽¹⁾ Dental caries is very common disease in childhood, interfering with food intake affecting physical development in the form of malnutrition, child's school attendance and academic performance. Tooth decay or cavities caused by dental caries is an infectious disease and is diet and oral hygiene dependent. If left untreated result in toothache, permanent cavitations and children with active disease become adult with tooth decay. Also poor dentition and malocclusion decreases the masticatory performance effecting oral health and quality of life. Fortunately dental caries is both preventable and treatable with effective home care and regular access to preventive dental services. The present study was carried out in the rural area of Konkan region to assess the awareness regarding oral hygiene, prevalence of dental caries, to assess the masticatory performance.

Key words:

Dental caries, oral hygiene, pre and post masticatory performance/ functional capacity, treatment, school children

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Introduction:

Oral health care in rural areas are often limited due to shortage of dental manpower, financial constraints, and the lack of perceived need for dental care among rural masses⁽²⁾ Various studies indicates the overall prevalence of dental caries as , the World Health Organization (WHO) recognizes dental caries as a pandemic and reports that the prevalence of dental caries among school children is 60 to 90%.⁽³⁾ According to National Oral Health Survey caries prevalence in India was 51.9% at age 5yrs,53.8% 12yrs and 63.1% at 15yrs respectively⁽⁴⁾. Oral health is about much more than having good health. It is critical to good health and well being for children and in adulthood. If dental carries is going to affect general health and nutrition then the only way to combat this pandemic is to focus on dental health in childhood itself and prevent it. In rural area where compromised life is lived the brushing habits of the children are highly unsatisfactory. Many of the children do not clean their teeth at all, some may not have access to a toothbrush and many use the traditional cleaning aids like datun, salt, oil, coal ash and locally made powders etc. There was a need for special designed community based

program to record dental screening and treatment.

Objectives:

- 1) To assess the awareness about oral hygiene.
- 2) To determine the prevalence of dental caries among 6yrs to 15yrs school going children in the rural area of konkan region.
- 3) Assessing the awareness, prevalence of dental caries and designing the interventional strategies along with proper dental treatment for caries and to improve oral functional capacity / masticatory performance.

Methodology:

A retrospective record base analysis of school dental health program implemented by Rural Walawalkar hospital in Ratnagiri district was conducted in the selected Kendra's and school of zilla parishad in chiplun taluka. Total of 300 schools from remote area where selected. Prior permission from concerned authorities were seeked. All the schools were visited by a team of dentist, nurse and medical social workers and dental assistant twice. Health awareness session by dentist and social workers was conducted for all students participated in the program. Filling of proforma for each student and taking anthropometry measurements (height and weight, BMI). A self designed questionnaire

was given to each student during program. Dental assessment by dentist was done in which status of each individual tooth was noted using universal numbering system and decayed, missing and filled teeth (dmft index) were recorded. Assessment of posterior teeth to check the oral functional capacity / masticatory performance was done.

Indicated treatment like filling, extractions, scaling were provided. Awareness session were taken in which introduction to proper brushing techniques, use of toothpaste and tooth brush , maintaining proper oral hygiene, and ill effects of tobacco were explained. School children in batches of 20 each were brought to the hospital and treatment was provided as indicated. Follow up after six months was done were the children were screened and the finding were recorded. Data analysis using appropriate statistical software. Total number 7646 school children from 300 schools age group 6yrs to 15yrs were

screened. For better assessment the study was divided in two groups:- 6yrs to 10yrs was group I and 11yrs to 15yrs was group II.

Results:

Table no 1: Indicates the caries prevalence rate in overall screened school children 7646, out of 6444 children (84.27%) were found to have dental caries and were referred for the treatment to the hospital and after treatment decreased by 62.54% and about 21.73% incomplete treatment. After six months follow up it was 2.61% caries. The caries prevalence rate in Group I was 89.38% before and after treatment decreased by 62.54%. After six months follow up it was 2.84% caries. The caries prevalence rate in Group II was 75.76% before and after treatment decreased by 43.20%. After six months follow up it was 2.23% caries. Over the entire caries prevalence rate was decreased by 97% after treatment and proper intervention and awareness sessions.

	Over all	6yrs to10yrs	11yrs to 15 yrs
Total	7646	4778	2868
Caries before treatment	6444(84.27%)	4271(89.38%)	2173(75.76%)
Caries after treatment reduced by	4782(62.54%)	3543(82.95%)	1239(43.20%)
After six month follow up	200(2.61%)	136(2.84%)	64(2.23%)

Table no 2:

Masticatory performance /functional capacity or chewing ability in over all screened children and age wise Group I and Group II. Difficulty in chewing, decreased functional capacity/decreased masticatory performance found was 99.16 % at the time of screening. Difficulty in chewing or decreased functional capacity in group I 6yrs to 15 yrs was 94.64% and 65.13% in group II 11yrs to 15 yrs. After treating with Glass Inomer Cement (GIC)a permanent filling. The

functional capacity was overall increased by 76.16%. In group I 6yrs to 15yrs by 83.98% in group II 11yrs to 15yrs by 59.42%.Overall 2.44% was not restored and in group I 6yrs to 15yrs 2.63 % in group II 11yrs to 15yrs 12.12% was not restored because of badly carious deciduous molars in group I and requirement of root canal treatment (RCT) for permanent molars in group II. Over all there was increase by 76%in masticatory performance or chewing ability of screened school children.

	Over all	6yrs to10yrs	11yrs to 15 yrs
Total	6444	4778	2173
%No of children with loss of chewing ability	6390(99.16%)	4522(94.64%)	1868(65.13%)
Treated molars with GIC filling cement improved by	4908(76.16%)	3798(83.98%)	1110(59.42%)
After six month follow up loss of chewing ability	187(2.44%)	126(2.63%)	61(12.12%)

Table no 3:- Treatment provided, indicates maximum caries, over retained teeth in group I and over all poor oral hygiene.

Total	GIC filling	Scaling	Extraction
7646	4791(13.98%)	1065(13.92%)	1163(15.28%)
Group I			
4778	3375(70.63%)	609(12.74%)	709(14.83%)
Group II			
2868	1416(49.37%)	456(15.89%)	460(0.55%)

Discussion:

The konkan region on the western coast of Maharashtra is characterized by mountainous terrain with hot humid weather and poverty. In addition to paucity of secondary and tertiary health care facilities, deep rooted superstitious beliefs, ignorant health seeking behaviors and relying on quacks for health problems has lead to wide spread health issues among konkan people. All these majorly affect children in this region. They are seen malnourished because of poverty, low socio-economic status, and poor awareness regarding general as well as oral health. Oral health conditions, particularly the rural areas of India has a large range of population from 31.5% to 89% affected by dental caries.⁽⁵⁾Dental caries is the main reason for the extraction in both deciduous and permanent dentition, especially the first molar which erupts at the age of 6years and goes for extraction at the age of 12 yrs.⁽⁶⁻⁷⁾ Hence need to pay adequate attention to prevent and enable the pediatric population reach adulthood with healthier dentition. According to the National Oral Health Survey caries prevalence rate in India was 51.9% at 5yrs, 53.8% at 12yrs and 63.1% at 15yrs, respectively, which is also correlated by the

caries prevalence rate recorded in our study that is 89.38%of caries in Group I and75.76% of caries in Group II. The exact magnitude of the oral health is seldom recognized in India; as a result oral health always remains a low priority. It is concluded that oral hygiene awareness education and motivation are the basic steps for improving the oral hygiene practices among the school children.

Conclusion:

Oral hygiene awareness education and motivation are the basic steps for improving the oral hygiene practices. The school health policy should be used to promote oral health by provision of oral health instructions and education on harmful dietary practices. Preventive practices such as regular dental check up should be advocated and promoted in school and society.

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Conflict of interest: None to declare

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