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Original Research Article

Oral hygiene and health status of rural school children in Rajahmahendravaram: a cross-sectional study

B. Sudha Spandana, Lavanya K. M.*, Sushant Kumar Mishra, Hari Krishnam Raju S.

Department of Community Medicine, GSL Medical College, Rajamahendravaram, Andhra Pradesh, India

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***Correspondence:**
Dr. Lavanya K. M.,
E-mail: doclavanyarao@gmail.com

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ABSTRACT

Background: Oral health is an integral component of general health. School age, especially younger ages, is a period of overall development. Although enjoying good oral health includes more than just having healthy teeth, many children have inadequate oral and general health because of improper oral hygiene, bad eating habits etc. Oral health affects the general health, well-being, education and development of children and diminishes their quality of life. Objectives were to assess the oral health status and oral hygiene of rural school children and to determine the factors associated with it.
Methods: A Community based cross-sectional study was conducted in the rural field practice area of Rajahmahendravaram for a period of 3 months. All the children between 1st to 5th classes were screened to evaluate the oral health and hygiene status. Findings were documented in a pre-validated proforma and subsequently analyzed.
Results: Total 620 students were screened in 4 rural schools. About 165 (26.6%) students were 10 years age and 54.3% were boys. Decayed tooth were present in 294 (47.4%). About 17% had only 1 decayed tooth, six teeth were seen decayed among 4 (0.6%) students. Dental morbidities are seen in 509 (82.1%). Pulp involvement was seen in 11 (1.8%) students, tooth fracture in 4 (0.8%), gingival involvement in 13 (2.1%), calculus in 52 (8.4%) and scaling in 80 (12.9%). Good oral hygiene was seen in 156 (25.2%).
Conclusions: Oral health status and oral hygiene among rural school children is not satisfactory and needs attention.

Keywords: Oral health, Hygiene, Rural school children

INTRODUCTION

Oral health is an integral component of general health and good oral health is an indispensable component of overall health. Dental diseases have been a persistent public health problem not only in India but globally. Oral hygiene is defined as a state of being free from chronic mouth and facial pain, oral and throat cancer, oral sores, tooth decay, tooth loss and other diseases and disorders that affect the oral cavity.[1]

School age is most crucial and influential period of life where sustainable oral health-related behavior, beliefs and attitudes get developed. In India, majority of the population (70-72%) live in the rural areas of which more than 40% are children, and these children tend to be more vulnerable to oral health problems due to socio-economic and demographic factors such as reduced awareness, poor transport facilities and lack of access to quality dental care.[2-4]

The prevalence of dental caries and other dental morbidities among school children in India is about 78.9%, which is higher compared to Sri Lanka (65%), China (41%) and United States (41%).[5] Oral disease burden is significantly increasing in developing countries

and varies with age and sex, awareness, education status etc.[6] Health education, screening among these children helps in primary prevention of dental problems and improving oral health status not only in the state but in country as a whole. Present study aims to assess the oral hygiene and health status of rural government school children in Rajamahendravaram and the factors affecting their oral health status.

METHODS

After obtaining ethical clearance from the institutional ethical committee of GSL Medical College, a community based cross-sectional study was conducted among 620 students 1st to 5th classes from 4 rural government schools in the rural field practice area of GSL Medical College, Rajahmahendravaram for a period of 3 months (July 2018-September 2018), to assess the oral hygienic and health status. Students who were on leave/absent on the day of data collection even after 3 consecutive attempts were excluded from the study.

Data was collected using a pre-designed and pre-tested questionnaire. Dental morbidities were examined using mouth mirror and blunt probe under expert supervision in broad day light. Oral hygiene was assessed based on four criteria: (a) usage of tooth cleaning devices, (b) method of cleaning, (c) frequency of cleaning and (d) washing the mouth following food intake. Each correct response was scored one and incorrect response zero. Good oral hygiene was said to be maintained if at least three practices were correct, i.e. 75%.

Statistical analysis

Data was entered in to the Microsoft excel and analyzed with Epi info and SPSS trial version 21. Results were expressed as percentages. Chi square test was used to test the association between categorical variables.

RESULTS

A total of 620 rural school children participated in the present study. Majority of them were boys 349 (56%) and girls were 271 (44%). Most of the children belonged to 10 years age group, 165 (26%) (Table 1).

Dental morbidities among the study population

At least one dental morbidity was present in 509 (82.1%) children. The most common morbidity was decay/caries of teeth, 294 (47.4%). The next was scaling done in 80 (12.9%), calculus in 52 (8.39%), mal occlusion in 37 (6%), filling in 18 (2.9%), gingival involvement in 13 (2.1%), pulp involvement in 11 (1.77%) and tooth fracture in 4 (0.65%).

Among 294 (47.4%) children who had decayed tooth, most 106 (17.1%) of them had only one decayed tooth followed by four decayed teeth in 59 (9.5%), two in 55 (8.9%), five in 37 (6%) three in 33 (5.3%) and six in 4 (0.6%) of the children (Table 2).

Table 1: Age distribution among rural school children.

Age (in years)	Number	Percentage
4	1	0.2
5	11	1.8
6	91	14.7
7	106	17.1
8	123	19.8
9	117	18.9
10	165	26.6
11	4	0.6
12	2	0.3
Total	620	100

Table 2: Dental morbidities among the study participants.

Dental morbidities	Number	Percentage
Decay/caries of teeth	294	47.4
Filling	18	2.9
Pulp involvement	11	1.77
Tooth fracture	4	0.65
Gingival involvement	13	2.1
Calculus	52	8.39
Scaling	80	12.9
Mal occlusion	37	6.0

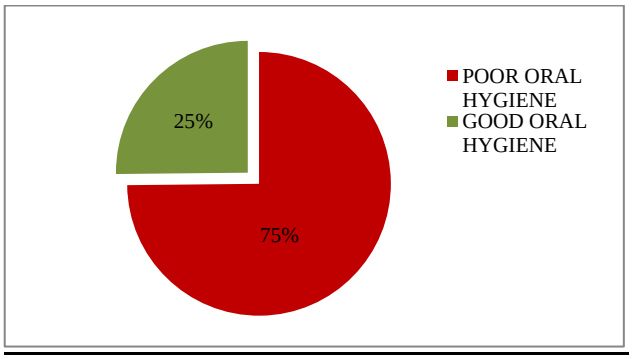

Figure 1: Oral hygienic status (n=620).

Oral hygienic measures followed by the study participants

Majority i.e. 598 (96.4%) practiced brushing only once a day and 22 (3.5%) of them twice a day. Almost, 616 (99.3%) the children used tooth brush for cleaning. Method of cleaning teeth is incorrect, i.e. left to right horizontal strokes in 456 (73.4%), while only 164 (26.4%) follow up and down, circular strokes of brushing which is the correct method for brushing teeth. Washing the mouth following food intake was observed only in 243 (39.2%) of the study participants. Good oral hygiene was observed in 156 (25%) children only (Table 3).

Table 3: Oral hygienic measures followed among the rural school children.

Oral hygienic measures		Number	Percentage
Frequency of brushing	Once	598	96.4
	Twice	22	3.54
	Thrice	0	0
Tooth cleaning device	Tooth brush	616	99.3
	Finger	1	0.24
	Neem stick	2	0.4
Method of cleaning	Left to right, horizontal strokes	456	73.4
	Up and down, circular motion	164	26.4
Mouth wash following food intake	Yes	243	39.2
	No	358	57.8
Total		620	100

Factors affecting oral hygiene

Increase in age showed statistically significant association with good oral hygiene (χ^2=6.036, p<0.005). Good oral hygiene was significantly more among girls compared to boys (χ^2=8.146, p<0.006). As the education level (class) increased good oral hygiene significantly increased (χ^2=7.342, p<0.005).

DISCUSSION

The present study was conducted among the rural government school children to assess the oral hygiene and health status. Atleast one dental morbidity was present in 509 (82.1%) children. The most common morbidity was decay/caries of teeth, 294 (47.4%), which is comparable to the findings of shresta et al, (42.6%).[6] The next common morbidity in the present study was scaling done in 80 (12.9%), calculus in 52 (8.39%), mal occlusion in 37 (6%), filling in 18 (2.9%), gingival involvement in 13 (2.1%), pulp involvement in 11 (1.77%). Tooth fracture in 4 (0.65%).

The present study revealed good oral hygiene was seen only in 25% of the study participants which is much less than the findings of Kuppuswamy et al (45%).[7] The reasons for lower prevalence of good oral hygiene may be lack of awareness, lack of resources and lack of services in rural areas. Unlike girls having significantly good oral hygiene compared to boys in the present study, Sharma et al reported that girls were having more decayed teeth compared to boys which could constitute for poor oral hygienic conditions in girls.[8] In the present study, frequency of brushing teeth was once a day in 96.4% and twice in 3.5% of the study participants, which is considerably different from the findings of kiran et al showing brushing of teeth once a day in 58.9% and twice a day in 38.5%.[9] Punitha et al and Ashok et al showed that 62.96% and 92.5% respectively, used tooth brush for cleaning in their study.[10,11] However, the present study revealed 99% of them used tooth brush. The present study reported that only 39.2% of students rinse their mouth following food intake which is quite better than the findings of Punitha et al which showed that only 29.62% rinse their mouth following food intake.[10]

CONCLUSION

The oral health status of rural school children is poor and needs attention. Oral hygiene among rural school children is mostly bad and needs to be considered before it reaches a major public health potential.

Recommendations

Collaborating with dental health care facilities for conducting regular camps for dental checkups and creating awareness could be helpful in fulfilling the lacuna which is attributed due to poverty, lack of awareness and oral health facilities. Improving awareness about oral hygiene through regular health teaching sessions, especially students at the lower grades (classes), training the teachers about oral health, hygiene and diseases, provision of treatment for dental morbidities could be implemented. Periodic dental health check-ups and dental health camps can be organized for early diagnosis and treatment of morbidities. Regular screening of oral pathology through school health program can be used efficiently for screening oral pathology to improve their oral health. More studies in both rural and urban areas can be conducted.

Limitations

Since it is a cross–sectional study, no follow up could be provided.

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