

PREVALENCE OF ORAL HEALTH PROBLEMS AMONG SCHOOL CHILDREN IN BIJAPUR, KARNATAKA

Rekha S. Sonavane¹, Jameel G. Jargar², Salim Javeed A. Mujawar³, Kiran Kosandal⁴, Mohammad Tameem I. Khateeb⁵

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ABSTRACT: BACKGROUND: The importance of the subject in lives of the people and the fact that much of the oral problems could be prevented by adopting simple measures to maintain the hygiene in the oral cavity. **OBJECTIVES:** The aim of this study was to investigate the prevalence of oral diseases, knowledge, and oral hygiene practices including health care seeking behavior, proper diet and oral habits for a healthy mouth of school children in Bijapur using a questionnaire and oral examination. **MATERIALS AND METHODS:** The subjects for this study were randomly selected from three schools of Bijapur in the age group of 7-12 years. A total of 300 children were screened with the help of predesigned questionnaire and scored in accordance with World Health Organisation (WHO) criteria. **RESULTS:** Out of 300 students 37.33% of the children having oral problems belonged to the age group of ten. Out of 300 students 18% had carious teeth. Out of 300 students 67.67% brushed their teeth once a day. Out of 300 students 75.33% brushed their teeth in horizontal strokes only. A significant relationship was found between the frequency of brushing and the oral problems faced by the students. Chi-square test also showed a significant relationship between the type of strokes and the oral problems faced by the students. Out of 235 students who having oral problems, 80.43% did not visit the dentist for regular check-ups. **CONCLUSION:** The oral hygiene of school children in Bijapur was poor with oral diseases like discolored teeth, caries, and bad breaths, bleeding gums, mouth ulcers and malposition. A high prevalence of discolored teeth and caries shows a lack of established oral hygiene practices. A comprehensive community-focused oral health care intervention that includes oral health education in homes and the strengthening of school health programme is needed to improve the oral health status of children in Bijapur.

KEYWORDS: oral hygiene, oral problems, school children, Bijapur.

INTRODUCTION: Oral disease is the second most common illness on the planet.¹ The consequences of poor oral hygiene can begin with discomfort and pain, but can lead to life-threatening illnesses.² Around the world, over 1 billion people do not brush their teeth at all, while around 2.5 billion only brush once a day.³ This is a growing problem in developing countries due to low awareness of oral hygiene, poor healthcare and changes in diet. Dental floss, toothpaste and mouthwash are usually mentioned as the best way to help fight dental decay.³

Toothpaste, toothbrushes and mouthwash have always been at the forefront of dental hygiene, but none seem to have the rather distinctive history of mouthwash as truly a jack of all trades. Dental caries and periodontal diseases are most common oral diseases showing striking geographic variations, socio-economic patterns and severity of distribution all over the world.⁴ Many studies has been conducted in different parts of the world,⁵⁻⁸ the review of literature indicates that there is a great deficiency in baseline data concerning the oral health of Indian school children.

ORIGINAL ARTICLE

There is paucity of information regarding the frequency and prevalence of dental caries and oral hygiene status in many parts of India. Absenteeism from work associated with dental problems and the undocumented effects on the level of performance of children in class are now recognized as problems of public health and socioeconomic concern. This article assessed the magnitude and distribution of selected oral health conditions affecting school children living and attending primary schools in Bijapur, Karnataka, India.

MATERIALS AND METHODS:

Study Setting: The study was implemented in Bijapur city located in Bijapur district in north Karnataka with more than 3, 27427 populations as per census 2013.

Study Design: The participants for this study were selected by convenience sampling from three government schools and three private schools in Bijapur. Students were distributed according to the age, type of school, response to questionnaire on oral hygiene and examination on oral problems.

Students were selected with the age group 7-12 years. A total of 300 children were screened with the help of predesigned questionnaire⁹ and scored in accordance with World Health Organization (WHO) criteria. Letter was sent to the selected schools explaining the purpose of the study and the procedures that would be followed during its conduct. The principal of each school was asked to inform the students and their parents about the study and a day was set for each school to collect the data.

Questionnaire on Oral Problems: The subjects were briefed about how to score their responses and were informed that more than one response format is possible for some items. Thus the subjects were free to choose more than one response for the same item. One of the investigators was available to clarify their doubts about any point during the course of completing the questionnaire.

All questionnaires were completed and data collected in the classroom, under the supervision of survey staff specially trained for this activity. The inclusion criteria for this study were children aged 7-12 as they were a little older to understand and complete the questionnaire by themselves. A convenience sample of grade 4 to grade 7 school children was selected.

Examination on oral Problems: Children were examined firstly for bad breaths, bleeding gums and mouth ulcers then for malposition, discolored teeth and dental caries under field conditions. Children were examined in the school compound in supine position with the head resting on a pillow placed on the laps of the examiner with adequate sunlight. Examination for dental caries was conducted with a plane mouth mirror and dental explorer. The examiners adopted a systematic approach-proceeding from one tooth space to the adjacent tooth or tooth space.

A tooth was considered present in the mouth when any part of it was visible or touched with the tip of the explorer without unduly displacing soft tissue. If the permanent and primary tooth occupied the same tooth space, the status of the permanent tooth only was recorded. Dental caries was scored by surface according to WHO criteria. A numerical coding system was used for recording the status of permanent teeth and an alphabetical coding system for primary teeth.

Ethical Permission: Al Ameen Medical College, Bijapur Faculty Research and Ethics Committee approved the study. Permission was sought from Bijapur District Education Office and Bijapur Municipality and school authorities to conduct the study. Eligible children were given consent forms

ORIGINAL ARTICLE

to be signed by their parents/legal guardians. Only children who returned signed forms were enrolled.

Statistical Analysis: Data obtained was entered in a MS-Excel spreadsheet and statistical analysis done using Chi-square test for categorical data.

RESULTS: A total of 300 students in the age of 7-12 years were screened. Of these 112 (37.33%) were ten years of age (Table 1). The schools were categorized as low and high socio-economic school groups based on the fees structure, of which 150 students were studying in government schools and 150 students were studying in private schools. Table 2 reflects oral problems in students with the order: discolored teeth, 124 (41.33%) > caries, 54 (18%) > bad breaths, 26 (8.67%), > bleeding gums, 15 (5%) > mouth ulcers, 10 (3.33%) > and malposition, 06 (2%).

Table 2 also showed that 65 students were not having any type of oral problems, so that we restricted them from oral problem investigations and considered 235 students as oral diseased subjects. Table 3 showed 203(67.67%) students were brushing their teeth once a day, while 60 (20%) and 37 (12.33%) were brushing twice and more than twice a day respectively. The type of strokes used by students while brushing showed in Table 4, 226 (75.33%) students were used horizontal strokes while 44 (14.67%) and 30 (10%) students were used only vertical and both strokes respectively.

Table 5 showed majority oral problems were seen in the students of government school 144/150 (96.00%) as compared to the students of private school 91/150 (60.33%). Table 5 also showed 235 having oral problems out of 300 students (78.33%) of both the schools. In Table 6, among 235 students 187 (79.57%) were seen oral problems with mixed diet, while 48 (20.43%) students were seen oral problems with only vegetarian diet. Table 7 depicts only 46 (19.57%) students were followed regular dentist check-up while 189 (80.43%) students were not visited dentists for their oral problems. Students who showed oral problems after oral examination only included in both tables (Table 6 and Table 7).

Table 8, chi-square test showed p value < 0.05 (p = 0.0025), which indicated that there was a significant difference between the observed values and expected values. Therefore a significant relationship was found between the frequency of brushing and the oral problems faced by the students. Table 9, chi-square test showed p value < 0.05 (p = 0.0015), which indicated that there was a significant difference between the observed values and expected values. Therefore a significant relationship was found between the type of brush strokes and oral problems faced by the students.

Age group (years)	Number of students	Percent (%)
7	12	04.00
8	32	10.67
9	50	16.67
10	112	37.33
11	78	26.00
12	16	05.33
Total	300	100

Table 1: Distribution of students according to age

ORIGINAL ARTICLE

Oral problems	Number of students	Percent (%)
Malposition	06	02.00
Discolored teeth	124	41.33
Caries	54	18.00
Bleeding gums	15	05.00
Mouth ulcers	10	03.33
Bad breaths	26	08.67
No problem	65	21.67
Total	300	100

Table 2: Distribution of students according to oral problems on examination

Frequency of brushing	Number of students	Percent (%)
Once/day	203	67.67
Twice/day	60	20.00
>Twice/day	37	12.33
Total	300	100

Table 3: Distribution of students according to frequency of brushing

Stroke	Number of students	Percent (%)
Horizontal	226	75.33
Vertical	44	14.67
Both	30	10.00
Total	300	100

Table 4: Distribution of students according to the types of strokes

School	Oral problems	Percent (%)
Government	144/150	96.00
Private	91/150	60.33
Total	235/300	78.33

Table 5: Distribution of students about oral problems based on the schools

ORIGINAL ARTICLE

Diet	Oral problems	Percent (%)
Vegetarian	48	20.43
Mixed	187	79.57
Total	235	100

Table 6: Distribution of students according to dietary habits

Regular dentist check up	Number of students	Percent (%)
Yes	46	19.57
No	189	80.43
Total	235	100

Table 7: Distribution of students according to the regular visits to dentists

Frequency of brushing	Oral problem							p value
	Malposition	Discolored teeth	Caries	Bleeding gums	Mouth ulcers	Bad breaths	No problem	
Once/day	6	98	52	10	9	26	2	0.0025*
Twice/day	0	18	2	2	0	0	38	
>Twice/day	0	8	0	3	1	0	25	

Table 8: Relationship between frequency of brushing and oral problems

*p<0.05

Types of strokes	Oral problem							p value
	Malposition	Discolored teeth	Caries	Bleeding gums	Mouth ulcers	Bad breaths	No problem	
Horizontal	6	119	52	12	9	26	2	0.0015*
Vertical	0	4	2	0	0	0	38	
Both	0	1	0	3	1	0	25	

Table 9: Relationship between the types of strokes and oral problems

*p<0.05

DISCUSSION: Out of 300 students 112(37.33%) of the students were shown oral problems belonged to the age of ten. By this age, most children have all their adult teeth except for the third molars (wisdom teeth). The adult teeth don't get replaced, so better oral care is requiring at this age.¹⁰

Almost 235(78.33%) of the students interviewed suffered from one or the other oral problem. Oral problems in students were observed in order: discolored teeth, 124(41.33%) > caries, 54(18%) > bad breaths, 26(8.67%), > bleeding gums, 15(5%) > mouth ulcers, 10(3.33%) > and malposition, 06 (2%).

Children with poorer oral health status were more likely to experience dental pain, miss school, and perform poorly in school. These findings suggest that improving children's oral health status may be a vehicle to enhancing their educational experience.^{11, 12}

ORIGINAL ARTICLE

Regular two times brush will give healthier teeth, good breath and fewer cavities.¹³ This study showed 203 (67.67%) out of 300 students brushed their teeth once a day. More than half only brushed once a day. This study shown a significant relationship between the frequency of brushing and the oral problems faced by the students. Even though all students used toothbrushes and paste but did not know the correct way of brushing teeth. Out of 300 students 75.33% students were brushed their teeth in horizontal strokes only.

In this study a significant relationship was found between the type of brush strokes and oral problems faced by the students. Every parent knows that a healthy smile is a sign of a happy child, and oral health experts agree that creating those healthy smiles comes with brushing up the teeth. Students of private schools were suffered from the least number of oral problems. Students belonging to government schools had majority problems may be due to low socioeconomic status and bad oral hygiene.¹⁴⁻¹⁶

The next question was dealt with how many students had visited the dentist. Out of 235 students who having oral problems only 46 (19.57%) were visited dentist and 167 (80.43%) did not visit the dentist for regular check-ups. The school population of today is the adults of tomorrow; they should be educated, so that a sense of responsibility develops in them about oral health. Studies on oral health assessment and dental education at an early age helps in improving preventive dental behavior and attitudes, which is beneficial for a lifetime.¹⁷

CONCLUSION: The oral hygiene of school children in Bijapur was poor with oral diseases like discolored teeth, caries, bad breaths, bleeding gums, mouth ulcers and malposition. A high prevalence of discolored teeth and caries shows a lack of established oral hygiene practices (tooth brushing, etc).

This can be done most effectively by combining government and multinational initiatives. Oral health education programs could be included in the school curriculum for the children to emphasis a positive attitude toward oral health. In order to positively influence and improve the oral hygiene practices among children: Community dental health carnivals, oral health education in homes, costumed characters and oral health booths and children's dental health shows could be arranged to improve the oral diseases of children in Bijapur.

Dental professionals should seize the opportunity to educate the public and children in order to enhance the awareness among children and impart a positive attitude toward oral health. Good oral hygiene results in a mouth that looks and smells healthy.

RECOMMENDATIONS: There are few simple steps that each of us can take to greatly decrease the risk of developing tooth decay, gum disease and other dental problems. These include:

1. Brushing thoroughly twice a day and flossing daily.
2. Eating a balanced diet and limiting snacks between meals.
3. Using dental products that contain fluoride, including toothpaste.
4. Rinsing with a fluoride mouth rinse if your dentist tells you to. Making sure that children under 12 drink fluoridated water or take a fluoride supplement if they live in a non-fluoridated area (for parents).
5. Visit your dentist at least every 6 months. Ask your dentist how to maintain good oral hygiene. Your dentist or dental hygienist will give you the proper dental hygiene instructions and teach you the correct way of brushing and flossing. The dentist will identify your individual needs and help you build your own oral care plan.

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AUTHORS:

1. Rekha S. Sonavane
2. Jameel G. Jargar
3. Salim Javeed A. Mujawar
4. Kiran Kosandal
5. Mohammad Tameem I. Khateeb

PARTICULARS OF CONTRIBUTORS:

1. Associate Professor, Department of Community Medicine, Al Ameen Medical College, Bijapur, Karnataka, India.
2. Assistant Professor, Department of Physiology, Al Ameen Medical College, Bijapur, Karnataka, India.
3. Reader, Department of Oral and Maxillofacial Surgery, Al Ameen Medical College, Bijapur, Karnataka, India.
4. Lecturer, Department of Periodontics, Al Ameen Medical College, Bijapur, Karnataka, India.

5. Lecturer, Department of Community Medicine, Al Ameen Medical College, Bijapur, Karnataka, India.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Rekha S. Sonavane,
Associate Professor,
Department of Community Medicine,
Al Ameen Medical College, Bijapur-586108,
Karnataka, India.
Email: drrekha.sonavane@gmail.com

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