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RESEARCH ARTICLE

ORAL HEALTH RELATED KAP AMONG 9 TO 14-YEAR-OLD SCHOOL CHILDREN IN GOVERNMENT SCHOOLS OF RAMANAGARA DISTRICT, KARNATAKA

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ABSTRACT

Background: To organize community-oriented oral health promotion programs, systematic analysis of the oral health situation would be needed, including information on oral health knowledge, attitudes, and practices (KAP).
Aim: The aim of this study was to assess knowledge, attitude, and practice (KAP) toward oral health among 9 to 14-year-old school children in a government schools of Ramanagara district, Karnataka.
Materials and Methods: The study group comprised of 999 children (Male: 662; Female; 336) who were in the age group of 9-14 years studying in government schools of Ramanagara district Karnataka. Data on oral health KAP was collected by means of a self-administered questionnaire. The data obtained was subjected to Statistical analysis using Chi-square test.
Results: This survey found that only 87% of the children brush their teeth once daily. Most of the students did not know that oral problems caused other general diseases(53%). Cavities were present in 41% of study participants. High proportion of study participants reported having knowledge about the lack of brushing was the cause of gum problems (45%)
Conclusion: Results of this study suggest that oral health KAP of study participants are poor and needs to be improved. Systematic community-oriented oral health promotion programs are needed to improve oral health KAP of school children.

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INTRODUCTION

Oral diseases qualify as major public health problems owing to their high prevalence and incidence (Petersen *et al*., 2003). Oral health knowledge is considered to be an essential prerequisite for health-related behavior (Al-Ansari *et al.,* 2003) It has been shown that Indian children have low level of oral health awareness and practice as compared to their western counterparts (Grewal *et al.,* 2007). Little is known about oral health attitudes and behavior of children from developing countries as comparison with developed countries (Al-Omiri *et al.,* 2006), Aim of this study was to assess oral health attitude, knowledge, and practice (KAP) of school children in government schools of Ramanagara district, Karnataka.

MATERIALS AND METHODS

This study was conducted to assess the KAP among 9 to 14-year-old school children studying in government schools of Ramanagara district, Karnataka. A total of 999 school children (Male: 662; Female; 336) were selected for the study. Age group 9-14 years was selected for the study with the intention that the baseline data collected will be used for future planning of a school oral health programs which will be for duration of 2 years. All the children in the age group of 9-14 years who were present on the day of data collection were included in the study. Consent for participation of school children was obtained from the head of the school. Data on oral health KAP was collected by means of 10 self administered close-ended questionnaires. The questionnaire was pretested by conducting pilot study among 10% of sample size to assess the children's ability to understand the questions and answer them without any help. The questions were in local language Kannada as well as in English. Steps were taken to ensure the reliability of the language translation. The questionnaire included details such as demographic data, and oral health KAP, towards dental problems. It took about 20 min to fill the questionnaire. Interpersonal communication was not allowed and the children were informed of the importance of answering the questions honestly. Questionnaires were completed under the supervision of investigator. The demographic data of the study subjects are represented in Table 1.

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Table 1. Showing the demographic data

Number of study participants	Options	Total	Number
Fathers education	Illiterate	12%	123
	Primary	42%	415
	High	40%	397
	School/SSLC	6%	64
	Graduation	-	-
	Master	-	-
Mothers education	Illiterate	15%	152
	Primary	41%	407
	High	42%	422
	School/SSLC	2%	18
	Graduation	-	-
	Master	-	-

Table 2. Oral health, knowledge and attitude

Question	Options	Participants		Male	Female	P value
	Agree	Male	Female			
Oral health disease are as important as other health problems	Disagree	377	202	57%	60%	
	Do not know	1	0	0%	0%	0.514
		283	134	43%	40%	
Oral problems causes other general disease- (stomach, heart, respiratory)	Agree	215	98	33%	29%	
	Disagree	112	42	17%	13%	0.045*
	Do not know	334	196	51%	58%	
Does Fluoride prevent tooth decay	Agree	73	40	43%	43%	
	Disagree	7	3	4%	3%	0.943
	Do not know	91	49	53%	53%	
	Dental pain	262	121	43%	39%	
Do you have any oral/dental problem	Loose teeth	79	25	13%	8%	
	Bleeding gums	54	37	9%	12%	
	Cavities	220	125	36%	41%	0.045*
	Irregular teeth	-	-	-	-	
	Other	-	-	-	-	
	Do not know	-	-	-	-	
	Sticky food	284	142	44%	48%	
What are the causes of tooth decay/cavity	Lack of brushing	58	9	9%	3%	0.004*
	Do not know	305	143	47%	49%	
	Irregular brushing technique					
What are the causes of gum problems	Lack of brushing	345	133	53%	45%	
	Do not know	111	43	17%	15%	0.006*
		191	118	30%	40%	
	Can cause cavities					
What are the problems caused by irregular teeth	Can cause gum problems	119	41	54%	56%	
	Less attractive smile	35	11	16%	15%	
	Do not know	65	21	30%	29%	
			--	-	-	0.962

Statistical analysis

The collected data were analyzed using SPSS version 10. The statistical significance was determined by the Chi-square test, and the level of significance was set at $P < 0.05$.

RESULTS

This study was conducted to assess oral health KAP among 9 to 14-year-old school children studying in a government-aided missionary school of Bangalore south. A total of 999 study participants in the age group of 9-14 years were selected for the study. All the students in the age group of 9-14 years completed the questions and nobody refused. Nearly 42% of the fathers had primary school education and 42% of mothers had high school education or less. It was also found that 12% of fathers of study participants were illiterate, while it was 15% for mothers.

Oral health knowledge and attitude

Table 2 presents the distribution of 9 to 14-year-olds by their answers to statement on knowledge and attitudes toward oral health.

Study participants, 60%, agreed that oral health disease is as important as other health problems (stomach, heart, respiratory). Among the study participants 53% did not know that fluorides prevent tooth decay. 41% of study participants agreed that they had dental problems which were found to be significant (p 0.045). It was found that 49% of the study group never knew the causes of tooth decay which was found to be significant (0.004). Gum problems are caused by lack of brushing was known to almost 49% of the participants which was found to be significant (0.006). Study participants, 56%, were aware that cavities/ tooth decay was caused by irregular teeth.

Oral health practices

Oral health practices of the study participants are highlighted in Table 3. It was found that 87% of the study group brushed their teeth once daily and 13% brushed their teeth twice daily It was also found that 88% brushed their teeth early in the morning, 12% brushed their teeth before breakfast and none of them brushed before going to bed. In the study group majority of both males and females brushed their teeth horizontally (left – right). The corresponding percentages are in Table 3.

Table 3. Oral health practices

Question	Options	Participants		Male(%)	Female(%)	P valvue
		Male	Female			
How many times you brush your teeth	Once	573	291	87	87	
	Twice	89	45	13	13	0.982
	More than twice	-	-	-	-	
What time do u brush	Early morning	662	336	88	88	
	Before breakfast	-	-	-	-	
	Before going to bed	88	45	12	12	0.969
What is the method of brushing	Left-right	288	154	44	46	
	Up-down	199	100	30	30	0.707
	Round	174	81	26	24	

Table 4. Questionnaire Format

QUESTIONNARIE FORMAT
RAJARAJESWARI DENTAL COLLEGE AND HOSPITAL
DEPARTMENT OF PEDODONTICS AND PREVENTIVE DENTISTRY

NAME: DATE:
AGE: SEX: MALE ☐ FEMALE ☐
CLASS:
SCHOOL:
REGION: Urban ☐ Rural ☐

FATHER EDUCATION: 1. Illiterate ☐
2. Primary: ☐
3. High School/SSLC: ☐
4. Graduation: ☐
5. Master: ☐
MOTHER EDUCATION: 1. Illiterate ☐
2. Primary: ☐
3. High School/SSLC: ☐
4. Graduation: ☐
5. Master: ☐

Questionnaire

1. Oral health disease are as important as other health problems –
   - Agree
   - Disagree
   - Do not know

2. Oral problems causes other general disease- (stomach, heart, respiratory)
   - Agree
   - Disagree
   - Do not know

3. How many times you brush your teeth –
   - Once
   - Twice
   - More than twice

4. What time do u brush -
   - Early morning
   - Before breakfast
   - Before going to bed

5. What is the method of brushing –
   - Left –right
   - Up-down
   - Round

6. Does Fluoride prevent tooth decay?
   - Agree
   - Disagree
   - Do not know

7. Do you have any oral/dental problem ?
   - Dental pain
   - Loose teeth
   - Bleeding gums
   - Cavities
   - Irregular teeth
   - Other
   - Do not know

8. What are the causes of tooth decay/cavity?
   - Sticky food
   - Lack of brushing
   - Do not know

9. What are the causes of gum problems?
   - Irregular brushing technique
   - Lack of brushing
   - Do not know

10. What are the problems caused by irregular teeth?
    - Can cause cavities
    - Can cause gum problems
    - Less attractive smile
    - Do not know

DISCUSSION

This study assessed oral health attitudes, knowledge, and practice of school children in a government schools in Ramanagara district, Karnataka. In this study, a government school was selected. Such schools in addition to catering to children of lower socioeconomic strata offer certain administrative advantages and a favorable framework for development, implementation of comprehensive oral health programs. A number of schools situated in the country are of similar nature. In the present study, all the study participants in the age group of 9-14 years who were present on the day of the study were selected. The data were collected by means of structured questionnaire. The questions were written at a

language level that should have allowed comprehension by even the youngest subjects (age 10 years). Furthermore, the investigator was always available during the completion of the questionnaire, and the subjects were encouraged to approach him whenever they needed clarification of any point. In the present study, 12% and 15% of fathers and mothers of the study participants were illiterate. This is comparable to the data from National oral health survey and ß uoride mapping, India (Oral Health survey and Fluoride Mapping India: 2002-2003) where it was 17.4% and 28.1% for males and females in the age group of 35-44 years.

Oral health knowledge and attitude

In our study according to the results obtained the study group was residing in both urban and rural in equal percentages. In contrast to this, in a previous study by Varenne *et al* it was found that many of the children were living in urban areas and because of this their parents had high level of education hence KAP regarding oral health was better (Varenne *et al.,* 2006). Awareness of the importance of tooth brushing in the morning was high (88%) among the study population. This finding is similar to study by Varenne *et al*, (Varenne B *et al.,* 2006) where majority of children in urban areas reported that tooth cleaning and regular dental visits may prevent oral disease. Approximately 53% were unaware that fluoride could prevent tooth decay. In all, the caries preventive effect of fluoride was not realized by a substantial proportion of the children. In our study it was found that KAP about oral health was very low. This is however consistent with a study done by Harikiran *et al*, where it was found that oral health KAP was poor and needs to be improved in Bangalore city (Harikiran *et al.,* 2008) In the present study, the participants were mainly from lower socioeconomic strata. It can also be considered that because of this they could have less role in the overall oral health related knowledge and attitude among this study group.

Oral health practices

This survey found that only 13% brushed their teeth two or more times a day, but in a study by Zhu *et al* (Zhu *et al.,* 2005) it was 44.4% of study participants. The subjects also reported irregular times of tooth brushing (88%) in the early morning, 12% before breakfast and none of them brushed in the night (0%) similar to study by Al-Omiri *et al*. (Al-Omiri *et al.,* 2006). Lack of both parental and child oral health education might also explain these findings. In the present study, it was found that female performance was better than male performance in oral health practices which was similar to study by El-Qaderi and Taani (El-Qaderi *et al.,* 2004) Females performed the oral hygiene practices better than their male counterpart which is in agreement with other previous studies (Beiruti *et al.,* 1995). This difference can attributed to a higher concern regarding personal hygiene and health care among females.

Conclusion

The present study indicates that participants parents education is mainly limited to middle school education. Results of this study suggest that oral health KAP among study participants are poor and needs to be improved. Findings of this study also show that lack of awareness regarding the brushing methods and timing of brushing. The results suggest that simple preventive oral health measures among study participants like brushing twice a day is not a norm. Based upon these findings, systematic community oriented oral health promotion programs are needed to target lifestyles and the needs of school children. Also, information regarding oral health should be included on wider basis in the school curriculum in an attempt to prevent and control dental diseases. In this background, an oral health promotion program has to involve partnership of school authorities, parents, and dental-care providers such as dental colleges or public health department and funding agencies. Comprehensive oral health educational programs for both children and their parents are required to achieve this goal.

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