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Knowledge, Attitude and Practice of Dental Caries and Periodontal Disease Prevention among Primary School Teachers in Belgaum City, India

Conhecimento, Atitudes e Práticas Frente à Cárie Dentária e Prevenção da Doença Periodontal Entre Professores do Ensino Primário em Belgaum City, Índia

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RESUMO

Objetivo: Avaliar o conhecimento, atitudes e práticas frente à cárie dentária e prevenção da doença periodontal entre professores da escola primária na cidade Belgaum e identificar o nível de conhecimento desse profissional sobre as informações de saúde e utilização dos serviços da escola na promoção de saúde bucal e prevenção de doenças dentárias.

Método: Um inquérito transversal utilizando como instrumento um questionário foi realizada entre os 150 professores do ensino básico de 175 escolas primárias da cidade Belgaum, Karnataka, na Índia. O questionário foi composto por seis questões sobre o conhecimento, seis perguntas sobre a prática, e três perguntas sobre a atitude em relação a cárie dentária e prevenção da doença periodontal. Cada pergunta continha quatro opções. O teste do Qui-quadrado foi aplicado usando o software SPSS (versão 11.0).

Resultados: As professoras tinham um melhor conhecimento e práticas, em comparação com os professores. Também os sujeitos mais jovens tiveram um melhor conhecimento e práticas, em comparação com os indivíduos mais velhos. Os professores eram mais conscientes e sabiam que a cárie dentária devia-se à ingestão de chocolate e carboidratos de consistência pegajosa e também sabiam que a perda dentária em adultos devia-se a dentes cariados e doença periodontal.

Conclusão: Os professores possuíam bom conhecimento e atitudes preventivas em relação à prevenção das doenças bucais, porém poucas mas importantes deficiências no domínio do conhecimento, atitude e prática sobre a prevenção de doenças dentárias foram identificadas sendo sugeridas recomendações.

ABSTRACT

Objective: To evaluate the knowledge, attitude and practice of dental caries and periodontal disease prevention among primary school teachers in Belgaum city and to identify teacher's level of knowledge of health Information and utilization of the services of the school teachers in promotion of dental health and prevention of dental diseases.

Methods: A cross-sectional questionnaire based survey was conducted among 150 primary school teacher from 175 primary school of Belgaum city, Karnataka, India. The questionnaire comprised six questions on knowledge, six questions on practice, and three questions on attitude regarding dental caries and periodontal disease prevention. Each question was followed by four choices. Chi square test was applied by using the statistical package for the social sciences (SPSS) software (version 11.0).

Results: The female subjects had better knowledge and practices as compared to their male counterparts. Also the younger subjects had better knowledge and practices as compared to the older subjects. The teachers were more aware and they knew that tooth decay was due to chocolate and carbohydrate sticky food and also they knew the tooth loss in adults was due to decayed teeth and periodontal diseases.

Conclusion: They had good knowledge and preventive attitude towards prevention of dental diseases but a few but important deficiencies in the field of knowledge, attitude and practice about prevention of dental diseases have been identified for which recommendations are suggested.

DESCRIPTORES

Conhecimentos, atitudes e prática em saúde; Cárie dentária; Doenças periodontais.

KEYWORDS

Health knowledge, attitudes, practice; Dental caries; Periodontal diseases.

INTRODUCTION

Dental professionals are often invited by different school authorities to deliver lectures on oral health and to provide preventive services. The usual target population behind most endeavors comprises the, young school children, and it is with the aim of improving their oral health knowledge, that such programmes are held. However the fact remains that any child's knowledge and practices are by and large a reflection of what he sees or is taught in his immediate surroundings.

Dentist and dental hygienists are often asked to participate in school oral health programmes at the elementary level. Schools are ideal place for preventive programmes because service can be made available to all children, including those who, for a variety of reasons, may not be receiving professional care as a result, school teachers are often asked to conduct oral health education and to administer preventive services¹.

According to Kenney² a school administrator, "school have a tremendous capacity to be supportive of programs involving preventive health and preventive dentistry for children". Elementary school teachers traditionally have played a role in educating children about how to prevent oral diseases and promote oral health. Teachers typically are involved in additional activities, such as lending support for, and /or actively participating in various school- based primary prevention programs. Hence who else but the school teachers, who spend a considerable amount of time with the children are to be influenced in order to inculcate sound knowledge and ideal practices among the young minds, secondly in any school dental health programme. It is the teachers who are the passive recipients of the lectures delivered by the visiting dentist. It is they, who are entrusted with the role of secularly carrying out various preventive services and delivering on oral health in the long run.

Health education programs in schools may be conducted by external groups such as public health agencies dental societies, and private dents, offices, or be provided internally by school nurses and teachers. The advantages of using school personnel are the potential for improved continuity of instruction and lowered cost of the service³.

Thus increasing in oral health knowledge of the school teachers provides an opportunity to educate an important segment of the public that has an access to the large population of the young people⁴ Teachers have the unique potential of preparing a future generation of correctly informed health care consumers and decision makers⁵.

So the preset study was carried out to evaluate the knowledge, attitude and practice of dental caries and periodontal disease prevention among primary school teachers in Belgaum city and to identify teacher's level of knowledge of health Information and utilization of the services of the school teachers in promotion of dental health and prevention of dental diseases.

METHODOLOGY

A cross-sectional questionnaire based survey was conducted among 150 primary school teacher from 175 primary school of Belgaum city, Karnatka, India. It is situated in the north west region of Karnataka. It has an area of 72.59 sq. km. Kannada, Marathi and Urdu medium school were 135, and the English medium school were 40. 10 of the total schools were selected for survey. Four of the English medium, and fourteen of the other medium school were selected using systematic sampling method. Total 175 questionnaire proforma were distributed to the 175 selected primary school teachers. 25 teachers did not complete the proforma so they excluded from the study. So final survey was conducted among 150 primary school teachers to assess knowledge, attitude and practice of dental caries and periodontal disease prevention.

The questionnaire was framed and its validity was accredited by experts in the field of density. The questionnaire comprised six questions on knowledge, six questions on practice, and three questions on attitude regarding dental caries and periodontal disease prevention. Each question was followed by four choices and the subjects were instructed to tick the most correct response. Data was also collected pertaining to the subject's age, sex, educational qualification, duration of teaching experience and attendance at a school - dental health programme. The questionnaire was pretested on a group of school teachers who were not included in the main survey.

The investigation was completed in 15 days. All the teachers present at the time of the visit to the school were surveyed by using the self administered questionnaire and a second visit was made in cases where some of the teachers were absent on first day. Anonymity was guaranteed to the subjects in -order to seek their personal responses. The subjects were requested to attempt all the questions. All the questionnaires were completed in the presence of the examiners. The total time allotted for questionnaire completion was ten minutes per respondent. After that Data were computerized and analyzed using the statistical package for the social sciences (SPSS) version 11.0. Before starting the study

ethical clearance was obtained from Ethical committee of K. L. E. S's Institute of Dental Sciences, Karnataka.

RESULTS

The questionnaires were completed by 150 primary school teachers. 63 of the subjects were females and 37 were males. Their mean age was 40.75 years, with the youngest subject being 21 years old and eldest being 55 years old. Mean years of their teaching experience were 20.22 years with the least being 1 year and the highest being 39 years. 71 of the subjects had done only the schooling and the others 39 had completed a college

degree. 23 of the subjects had attended a school dental health programmes in the last six months.

Table 1 reveals knowledge of the male and female primary school teachers. The teachers were more aware and they knew that tooth decay was due to chocolate and carbohydrate sticky food and also they knew the tooth loss in adults was due to decayed teeth and periodontal diseases. 43 female teacher knew that tooth decay was due to chocolate in comparison to 20 male teacher. 26.6 female teachers knew that most common reason for tooth loss in adults is dental caries in comparison to male teachers. 41.3 female teacher knew that fluorides are used to protect the teeth from decay in comparison to 13.3 male teachers.

Table 1. Knowledge of the primary school teachers.

Question	Option	Male		Female		Total		Chi square and P Value
		n	%	n	%	n	%	
Q1. Maximum tooth decay will be caused by	1. Bread	8	5.3	11	7.3	9	12.7	X ² =4.06 P=0.255
	2. Chocolate	30	20.0	65	43.0	95	63.0	
	3. Toffee	12	8.0	16	10.6	28	18.7	
	4. I don't know	5	3.3	3	2.0	8	5.3	
Q2. Is tooth decay infectious (spread from person to person)	1. No	40	26.0	70	46.6	110	73.3	X ² = 0.913 P=0.613
	2. Yes	10	6.6	20	13.3	30	19.9	
	3. I Don't know	5	3.3	5	3.3	10	6.6	
Q3. Best way to protect against gum diseases is	1. To clean the mouth everyday	39	26.0	53	35.0	92	61.0	X ² =26.52 P=0.000
	2. To take vitamins regularly	5	3.3	25	16.0	30	19.6	
	3. To eat less sweets	4	2.6	14	9.3	18	11.9	
	4. I Don't know	6	4.0	4	2.6	10	6.6	
Q4. Bleeding of gums on brushing the teeth may be a sign of.	1. Decayed teeth	10	6.6	16	10.0	26	17.3	X ² = 5.83 P=0.120
	2. Improper brushing	8	5.3	12	8.0	20	13.9	
	3. Gum diseases	30	20.0	64	42.6	94	62.6	
	4. I Don't know	7	4.6	3	2.0	10	6.6	
Q5. Most common reason for tooth loss in adults is	1. Aging	10	6.6	18	12.0	28	18.6	X ² =6.75 P=0.08
	2. Gum diseases	12	8.0	35	23.0	47	31.3	
	3. Decayed teeth	28	18.6	40	26.6	68	45.3	
	4. I don't know	5	3.3	2	1.3	7	4.7	
Q6. Fluorides are used to	1. Make the teeth white	9	6.0	14	9.3	23	15.3	X ² =18.29 P=0.000
	2. Harm the teeth	3	2.0	7	4.6	10	6.7	
	3. Protect teeth from decay	20	13.3	62	41.3	82	54.6	
	4. I don't know	23	15.3	12	8.0	35	23.3	

Table 2 reveals practices of the male and female primary school teachers. Most of the subjects (69.3) were using tooth brushing for cleaning of the teeth. 46.6 female teachers were using tooth brush for cleaning in comparison to 22.6 male teachers. 16.7 female teachers used to visit dentist in every 6 month in comparison to 8.0 male teachers.

Table 3 reveals attitude of the primary school

teachers. 40 female teachers told that responsibility of the teachers should include instructing students on prevention of oral diseases in comparison to 20.0 male teacher while 23.3 teacher told that referring them to a dentist if needed is the responsibility of teacher. 28.6 female teacher told that prevention of oral diseases should be taught to the children by mass media in comparison to 20.0 male subjects.

Table 2. Practices of the primary school teachers.

Question	Option	Male		Female		Total		Chi square and P Value
		n	%	n	%	n	%	
Q1. You clean your teeth using:	1. Tooth brush and paste	34	22.6	70	46.6	104	69.3	$X^2=9.49$ P= 0.02
	2. Finger with powder	10	6.7	20	13.3	30	20.0	
	3. Only water	8	5.3	5	3.3	13	8.6	
	4. Others	3	2.0	0	0.0	3	2.0	
Q2. You use this method of cleaning	1. Twice daily	35	23.3	82	54.6	117	77.9	$X^2=10.44$ P=0.001
	2. Once daily	20	13.3	13	8.7	33	22.1	
	3. Occasionally	0	0.0	0	0.0	0	0.0	
	4. Others	0	0.0	0	0.0	0	0.0	
Q3. You use a new tooth brush	1. Every 6 months	20	13.2	31	20.6	51	33.8	$X^2=2.83$ P= 0.243
	2. Every 3 months	25	16.6	35	23.0	60	40.0	
	3. As long as it lasts	10	6.6	29	19.4	39	26.0	
	4. Others	0	0.0	0	0	0	0.0	
Q4. For cleaning in between the teeth you use	1. Dental floss	12	8.0	15	10.0	27	18.0	$X^2=8.76$ P=0.03
	2. Tooth brush	18	12.0	36	23.9	48	35.9	
	3. Tooth pick	8	5.3	29	19.3	37	24.6	
	4. Nothing	17	11.3	15	10.0	32	21.3	
Q5. You visit your dentist	1. Every year	5	3.3	12	8.0	17	11.3	$X^2=20.11$ P=0.000
	2. Only when needed	25	16.6	50	34.1	75	50.7	
	3. Every 6 months	12	8.0	25	16.7	37	24.7	
	4. Never so far	16	10.7	4	2.6	20	13.3	
Q6. On having a toothache you did	1. Use a home remedy	5	3.3	12	8.0	17	11.3	$X^2=5.88$ P=0.117
	2. Make a visit to the dentist	25	16.3	50	33.3	75	50.0	
	3. Make a visit to the doctor	7	4.6	18	12.0	25	16.7	
	4. Nothing	18	12.0	15	10.0	33	22.0	

Table 3. Attitude of the primary school teacher's.

Question	Option	Male		Female		Total		Chi square and P Value
		n	%	n	%	n	%	
Q1. Responsibility of the teachers should include	1. Instructing students on prevention of oral diseases	30	20.0	60	40.0	90	60.0	$X^2=1.90$ P=0.385
	2. Referring them to a dentist if needed	15	10.0	20	13.3	35	23.3	
	3. 1+2+supervising tooth brushing in school	10	6.6	15	10.0	25	16.7	
	4. None	0	0.0	0	0.0	0	0.0	
Q2. You use this method of cleaning	1. Including a chapter on prevention of oral diseases in school curriculum	27	18.0	36	23.9	63	41.9	$X^2=5.25$ P=0.154
	2. Better training given to the teachers in the subject of oral diseases prevention	13	8.6	22	14.6	35	23.3	
	3. Both	17	11.3	35	23.3	42	34.7	
	4. None	0	0.0	0	0.0	0	0.0	
Q3. You use a new tooth brush	1. Mass media	30	20.0	43	28.6	73	48.6	$X^2=5.25$ P=0.154
	2. Family	8	5.3	27	18.0	35	23.3	
	3. School teachers	12	8.0	13	8.6	25	16.6	
	4. Health professionals	5	3.3	12	8.0	17	11.3	
	5. Others(specify)	0	0.0	0	0.0	0	0.0	

DISCUSSION

Oral health education would play a most important role in order to control oral disease. So the preset study was carried out to evaluate the knowledge, attitude and practice of dental caries and periodontal disease prevention among primary school teachers in Belgaum city and to identify teacher's level of knowledge of health Information and utilization of the services of the school teachers in promotion of dental health and prevention of dental diseases.

Prevention of periodontal diseases as compared to dental caries was better understood by the subjects. This could be a result of their general awareness on routine oral hygiene procedures as compared to lack of specific knowledge on dental caries etiology. Though most of the subjects reported ideal oral hygiene practices regarding the method and frequency of tooth brushing, a small number underrated the importance of cleaning in-between the teeth and that of replacing the tooth brush every 3 months. Also, very few of them understood the importance of visiting a dentist bi-annually. These findings emphasize the need for promoting the principles of preventive dentistry among this group of school teachers and are in agreement with previous studies^{6,7} on elementary school teachers in Romania and Michigan respectively.

Knowledge: The teachers were more aware and they knew that tooth decay was due to chocolate and carbohydrate sticky food and also they knew the tooth loss in adults was due to decayed teeth and periodontal diseases. Regarding belief about tooth decay most of the response came as no when they were asked about whether tooth decay is infectious or spreads from person to person. The teachers also knew that fluorides when best used protect the teeth from decay. The teachers were also aware of bleeding gums and also they knew the reason for bleeding gums, and also they knew that if mouth is cleaned every day it could be well protected from gum diseases.

Practice: Most of the teachers reported that the ideal oral hygiene practices regarding the method and frequency of tooth brushing. Regarding use of a new tooth brush most of them changed the brush every 3 months. Tooth brush was most commonly used by the teachers for cleaning in between the teeth. Majority of the teachers visited the dentist only when needed, but when they were having tooth ache problem majority of them visited to the dentist.

Attitude: Most of the teachers thought that mass media was the best source to teach children about

prevention of oral diseases. Most of the teachers suggested a chapter on prevention of oral diseases in school curriculum only. When asked regarding responsibility of the teacher they recommended instructing the students on prevention of oral diseases.

The female subjects had better knowledge and practices as compared to their male counterparts. Also the younger subjects had better knowledge and practices as compared to the older subjects. This reflects that the younger generation of school -teachers in this study have acquired a higher sense of responsibility towards prevention of oral diseases ; and is in agreement with the findings of a study conducted on a group of future elementary school teachers at Minnesota².

A previous study conducted among elementary school children showed that most of subject 74.9 were agreed that fluoride protect the teeth from decay and 84.9 were agreed that clean your mouth everyday is the best way to keep from getting gum diseases. While it is similar to our study in which 61.3 subject thought that clean your mouth every day is the best way to protect against gum diseases and 55.7 subjects thought that fluoride protect the teeth from decay⁸.

Studies in Romania, China, Saudi Arabia have reported that positive attitudes among school teachers towards school based dental health education and willingness to be involved in oral health promotion^{6,9,10} their is similar to result of our study in which 60 of teachers were agreed that introducing students on prevention of oral diseases and responsibility of teachers.

Similar to our study a higher level of knowledge was revealed among Kuwaiti school teachers, and teachers reported a positive attitude towards prevention of dental diseases¹¹. While among Tanzanian school teachers low level of oral health knowledge were found, accompanied by a poor attitude towards becoming involved in dental health education¹².

Responses to the attitude questions include that the subjects were less inclined to accept supervisory rates other than the traditional instructional activities on oral disease prevention. This findings is in accordance with other study¹³. The attitudes of the subjects regarding teaching of oral disease prevention appears to be based on a very limited understanding of child psychology. Though most subjects thought that mass media was the best of all sources to teach the children, it has been shown to be of minimal usefulness since it does not motivate behavioural changes. Similarly, the health professionals and the family/ parents are also at a loss in disseminating oral health information due to their limited field area of practice and the potential for improper source of information, respectively. School teachers, in fact, can

act as ideal oral health educators for the children in mass since they possess several inherent qualities which are described as follows:

1. Their very expertise lies in delivering information to the children.
2. They have access to a variety of educational audiovisual aids, which can supplement the effect of teaching.
3. As childhood is a stage of habit formation, teaching correct oral hygiene habits at this stage are more likely to be adopted.
4. Initially, the children might be more comfortable in confiding in their teachers rather than in the health professional, regarding any difficulty at performing an oral hygiene procedure.
5. The teachers too, in turn, are better than health professionals at perceiving the logic and limitations of their students.
6. Besides being actively involved with these in school activities, the school teachers as a group form a very influential community and can hold the key to deciding certain community dental health programme.
7. Schools are the ideal sites for preventive programmes as not only can services be made available to a whole bulk of children, but more importantly to all the children.
8. The advantage of using school personnels is the potential for improving continuity of instruction and lowered cost of the service.
9. School teachers can also instruct parents regarding the oral health of their child during one of the many parent teacher meetings.
10. The school teachers themselves are also parents and hence can apply their knowledge for the betterment of their child's oral health also.

In view of the scarce health resources and the current pattern of the oral diseases in India, National oral health policy that emphasis prevention would seem more advantageous than curative care. Oral health education would play a most important role in order to control oral disease and school based approach should be combined with family and community oriented oral health programmes.

All this is only possible if these school teachers are well versed with the correct and latest concepts on prevention of oral diseases. Hence, within the limitation of this study, the following recommendations are made to make the subject of oral disease prevention not just acceptable, but also of interest to the school teachers:

1. Panel discussions or oral group discussions should be taken to cover those aspects which were generally answered inaccurately.
2. The school teachers can be involved personally in

oral health care endeavors by including their children in a school dental programme free of cost. This would be both a source of interest and incentive for them

3. The dental personnel appointed for carrying out school dental health programmes should hold workshops for the teachers before starting on the project. This way the teachers would better understand the importance of this activity and its performance.

4. Literature should be made available in both regional languages and in English for general circulation among schools from time to time.

5. School dental health services must compulsorily hold demonstrations or lectures on prevention of oral diseases during school feasts and parent teacher meetings in order to involve the teachers and parents in oral health promotion of the child.

6. A system of monitoring oral health of all the children and school teachers in the registered schools must be slated mandatory. Besides providing useful insight on the success of health programmes, it would also promote changes of employment for dental hygienists in these school.

CONCLUSION

The present student was conducted to assess the knowledge, attitude and practice of dental caries and periodontal disease prevention among primary school teachers in Belgaum city. They had good knowledge and preventive attitude towards prevention of dental diseases but a few but important deficiencies in the field of knowledge, attitude and practice about prevention of dental diseases have been identified for which recommendations are suggested.

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