

Oral health knowledge and oral hygiene practices of pre-school teachers in a selected region of Kathmandu city

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ABSTRACT

Background: Dental caries and periodontal diseases are the most common oral health problems seen globally. Schools provides an ideal environment for all forms of education, including oral health and teachers can be instrumental in imparting it. The teachers, therefore, need to be well versed in the knowledge regarding oral health as well as practice good oral hygiene measures to teach the children. **Objectives:** The objective of this study is to assess pre-school teachers' oral health knowledge and oral hygiene practices in a selected region of Kathmandu city. **Methodology:** An observational, descriptive cross-sectional study was conducted on pre-school teachers in a selected region of Kathmandu city. The teachers of pre-school level completed a self-administered structured questionnaire on knowledge of oral health and oral hygiene practices **Result:** The pre-school teachers had more knowledge about dental caries than about periodontal diseases. Overall, scores of school teacher's (n=95) oral health knowledge were inadequate (54.7%) but the oral hygiene practices (69.5%) were found to be good. **Conclusion:** The pre-school teachers had inadequate oral health knowledge but good oral hygiene practices. This shows a need for training and motivation of pre-school teachers' regarding the oral health education and promotion through school-based programs.

Key words: Dental caries, Oral health, Oral hygiene, Periodontal diseases, Pre-school teachers

The WHO, Global Data Bank (WHO 1995), shows that children up to 12 years, in more than 15% of the countries in the world have an average of 4.5 decayed, missing, or filled teeth per child [1]. The WHO Information Series on School Health states that more than 50 million hours annually are lost from school due to oral diseases [2]. Similarly, Gift et al. [3] noted in their study that 117,000 h of school were lost per 100,000 school age children due to oral health problems. Dental caries and periodontal disease are among the most prevalent conditions in human populations, other conditions such as trauma of teeth and jaws, dental erosion, developmental enamel defects, and oral cancer are also important [1].

Children spend more than half of their time in schools and teachers play a pivotal role in the overall development of the child academically, socially, and psychologically. The teachers are the role models who motivate children toward healthy lifestyle, including oral health care. The teachers are more skilled in educational psychology than dentists [4-6]. The majority of studies on dental caries prevention have indicated the teachers to be the best educators for regular oral health education to school children [7]. The significant amount of time spend in school develops their lifetime beliefs and habits [5]. Hence, starting oral health education at this age can have a lifetime influence on the

oral health of children. To provide this education, it is essential that the teachers have an adequate knowledge regarding oral health themselves.

Many developing countries have introduced school-based oral health education program to keep a tab on the increasing burden of oral diseases because schools provide a conducive environment for the oral health education activities. The WHO instigated a Global School Health Proposal in 1995 giving an emphasis on the importance school health education [4]. Studies have indicated satisfactory knowledge of teachers regarding oral health in developed countries, but teachers in the developing countries reported to have inappropriate knowledge about oral health despite of having adequate educational qualification [4].

In Nepal, school health activities are minimal and the only activity seen is health camps organized by certain schools as well as medical and dental institutions. The services of school teachers in Nepal have not been utilized adequately in the education of children regarding oral health. There is a need to develop School oral health programs in Nepal. The present study, therefore, aimed to assess the pre-school teacher's oral health knowledge and oral hygiene practices in a selected region of Kathmandu city.

METHODOLOGY

An observational, descriptive, cross-sectional study was conducted on pre-school teachers in schools in selected regions of Kathmandu city from September 2016 to December 2016. The study was conducted after getting approval from the Institutional Research Committee. Permission to conduct the study was obtained from the concerned school authorities. The sample consisted of 100 teachers teaching pre-school level children, who were selected from 15 randomly selected schools both private and government. All teachers teaching in pre-school level were included and teachers who exercise other functions and are not directly working with students, including those who refused to participate were excluded from the present study. Questionnaires which were inadequately filled were also excluded from the study.

The components of the pro forma include demographic information, questionnaire about oral health knowledge, attitude, and practices. The questionnaire used was self-administered structured questionnaire consisting of 22 close-ended questions, adopted from Sidra et al. [4]. Knowledge scale was used in measuring knowledge based on 15 items containing statements about oral health knowledge related to dental plaque, dental caries, and periodontal diseases. For every correct answer, score 1 was given and 0 for an incorrect answer. A score below 6 was inadequate knowledge while that above 6 was considered as adequate knowledge. Practice scale was based on 9 questions on oral hygiene practices of teachers and delivery of oral hygiene related knowledge among students and parents, and a score of 0-9 was poor practice and above 9 was good practice. The data obtained was analyzed using SPSS version 20.

RESULTS

A total of 100 questionnaires were distributed to pre-school teachers in a selected region of Kathmandu city, and only 95 could be adapted in the study. The sociodemographic details are presented in Table 1. Out of 95 teachers, 87 were female, and 8 were male, and 68.4 were married. Nearly 63.5% teachers were in the age group between 19 and 30 years. 69.5% teachers had a bachelor's degree, and 60% had 5 years or less experience in teaching. The source of information about oral health for 34.7% teachers was the dentist followed by television (27.4%) as shown in Fig. 1.

When asked about dental plaque, 28.4% teachers knew that it was soft debris on the teeth and 24.2% and 16.8% stated that it caused inflammation of gums and dental caries, respectively, (Table 2). Nearly, 42.1% did not know what plaque was and further 37.9% did not know what it can lead to. On the questions regarding dental caries, 78.9% responded positively about having knowledge about dental caries. Regarding the cause of dental caries, a higher frequency knew the causes to be plaque (54.7%), poor oral hygiene (86.3%), sweetened food (77.9%), inadequate brushing (66.3%), and excessive intake of soft drinks (46.3%). Out of the 95 teachers, 54.7% did not have knowledge about periodontal diseases. The majority responded that they did not

Table 1: Demographic profile of the study population

Variable	Frequency (n=95) (%)
Gender	
Male	8 (8.4)
Female	87 (91.6)
Age range	
19-30	60 (63.2)
31-40	28 (29.5)
41-50	7 (7.4)
Educational qualification	
Intermediate	9 (9.5)
Bachelors	66 (69.5)
Masters	19 (20)
Others	1 (1.1)
Marital status	
Married	65 (68.4)
Single	30 (31.6)
Experience in years	
0-5	57 (60)
6-10	33 (34.7)
11-15	2 (2.1)
16-20	2 (2.1)
21-25	1 (1.1)

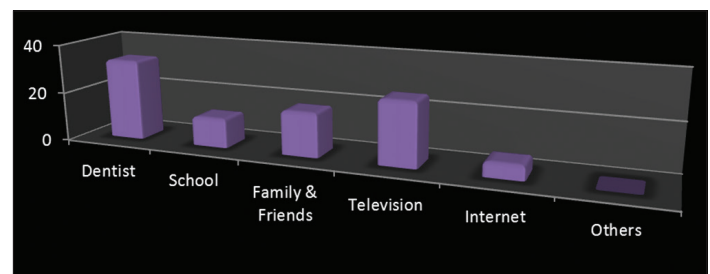


Figure 1: Source of information on oral health

know the causes such as dental plaque and malaligned teeth could cause periodontal disease (Table 2). 60% teachers knew that improper tooth brushing was the cause for periodontal disease. Nearly 54.7% teachers had inadequate knowledge regarding oral health (Table 3).

Regarding the practice of oral hygiene, 74.7% had the habit of brushing their teeth twice a day and 90.5% used toothpaste. 83.2% rinsed their mouth after meal and a high frequency of teachers reported of occasional sweet food intake (71.6%). Teachers frequently discussed oral hygiene practices with students (89.5%) and 94.7% encouraged the students to brush their teeth regularly (Table 4). However, they discussed it only occasionally (47.7%), and 64.2% teachers discussed oral hygiene practices with the parents as well. Nearly 69.5% teachers had good oral hygiene practices (Table 3).

DISCUSSION

Over the years, oral health has evolved from being a narrow focus on teeth and gums to identifying the mouth as a mirror of general

Table 2: Knowledge of teachers regarding oral health

Variable	Frequency n (%)
Plaque is	
Soft debris on teeth	27 (28.4)
Staining of teeth	15 (15.8)
Hard debris on teeth	13 (13.7)
I don't know	40 (42.1)
Plaque leads to	
Inflammation of gums	23 (24.2)
Staining of teeth	20 (21.1)
Dental caries	16 (16.8)
I do not know	36 (37.9)
Knowledge of dental caries	
Yes	75 (78.9)
No	20 (21.1)
Cause of tooth decay	
Plaque	
Yes	52 (54.7)
No	7 (7.4)
Don't know	36 (37.9)
Poor oral hygiene	
Yes	82 (86.3)
No	6 (6.3)
Don't know	7 (7.4)
Sweetened food	
Yes	74 (77.9)
No	6 (6.3)
Don't know	15 (15.8)
Inadequate brushing	
Yes	63 (66.3)
Know	10 (10.5)
Do not know	22 (23.2)
Excessive intake of soft drinks	
Yes	44 (46.3)
No	22 (23.2)
Don't know	29 (30.5)
Knowledge of periodontal diseases	
Yes	43 (45.3)
No	52 (54.7)
Periodontal disease cause	
Dental calculus (tartar)	
Yes	42 (44.2)
No	4 (4.2)
Don't know	49 (51.6)
Malaligned teeth	
Yes	16 (16.8)
No	17 (17.9)
Do not know	62 (65.3)
Improper tooth brushing	
Yes	57 (60)
No	6 (6.3)
Do not know	32 (33.7)

(Contd...)

Table 2: (Continued)

Variable	Frequency n (%)
Growing age	
Yes	34 (35.8)
No	20 (21.1)
Do not know	41 (43.2)
Hard food stuff	
Yes	35 (36.8)
No	14 (14.7)
Do not know	46 (48.4)

Table 3: Oral health knowledge and oral hygiene practices scores of school teachers

Variable	Total score	Mean±SD	Frequency n (%)	Frequency n (%)
Knowledge	15	6.82±2.99	Adequate knowledge 43 (45.3)	Inadequate knowledge 52 (54.7)
Practice	17	9.46±2.25	Good practice 66 (69.5)	Poor practice 29 (30.5)

SD: Standard deviation

health and critical to overall well-being. Although effective means are known for prevention and treatment of dental diseases yet the oral health of children has not seen an improvement [8]. Primary school teachers have been utilized in many countries as health education agents in response to a call by WHO for the use of alternative health promoting personnel [9]. It is generally acknowledged that kindergarten teachers have a role to play in caring for pre-school children's teeth, but their lack of knowledge and awareness have been widely reported [10,11]. However, they are more skilled in the teaching process and understanding the child psychology as compared to dental professionals [6,12,13].

In the present study, teachers were in the age range from 19 to 50 years, and 63.2% were between 19 and 30 years. There was a female predominance of 91.6% which was similar to many other studies [4,14,15]. In a study conducted by Dawani et al. [5], all respondents of pre-school level were female. It may be attributed to the fact that at pre-school level female tutors are preferred as shown in previous reports [14].

Although 28.5% teachers knew what plaque was the majority did not have an idea about what plaque would lead to. The majority of the teachers (78.9%) had knowledge about the causes of dental caries. In regard to periodontal disease, 54.7% did not have an idea about periodontal disease. Although many knew that improper tooth brushing would lead to it, but most of the teachers did not know that other causes such as dental calculus, malaligned teeth, and hard food stuff can also lead to periodontal disease. This was similar to findings by Sidra et al. where the teachers knew the cause for dental caries but had less knowledge about periodontal disease. The lack of awareness in teachers related to gum disease has been mentioned in many studies [4,5,15-17].

There was no significant relationship of the knowledge or practices with gender, years of experience, and education level of

Table 4: Oral hygiene practices in children

Variables	Frequency n (%)
Frequency of brushing teeth	
Once daily	21 (22.1)
Twice daily	71 (74.7)
More than twice daily	3 (3.2)
Tooth cleaning aid	
Toothpaste	86 (90.5)
Datyun	3 (3.2)
Ayurvedic paste such as meswak	3 (3.2)
Tooth powder	3 (3.2)
Mouth rinse after meal	
Always	79 (83.2)
Never	1 (1.1)
Sometimes	15 (15.8)
Frequency of sweet food intake	
In every meal	12 (12.6)
Once a day	15 (15.8)
Sometimes	68 (71.6)
Oral hygiene practice discussion with school children	
Yes	85 (89.5)
No	10 (10.5)
Frequency of discussing oral hygiene practices	
Occasionally	45 (47.7)
Weekly	32 (33.7)
Monthly	10 (10.5)
Never	8 (8.4)
Reason of not discussing oral hygiene practices	
I discuss it	66 (69.5)
School admin does not allow	1 (1.1)
School children are not interested	1 (1.1)
No reason	27 (28.4)
Oral hygiene practice discussion with parents	
Yes	61 (64.2)
No	34 (35.8)
Encouraging tooth brushing regularly	
Yes	90 (94.7)
No	5 (5.3)

teachers. Pre-school teachers in the present study had inadequate knowledge regarding oral health. Sidra et al. [4] in their study conducted in Karachi reported of similar results where teachers had inadequate oral health knowledge. While in a study conducted by Dawani et al. [5], pre-school teachers possessed satisfactory knowledge which was in disagreement with the present study.

The oral hygiene practices of pre-school teachers showed that 74.7% teachers had habit of brushing twice daily and 90.5% used toothpaste. This was similar to the findings by other studies [5,18] and in contrast to that of Wyne et al. [19]. Most of the teachers rinsed their mouth after meals, and they had a low frequency of

sugar intake. 89.5% teachers discussed oral hygiene practices with children though majority discussed it only occasionally and 64.2% even discussed it with parents. Similar findings were affirmed by other studies [5,20]. However, Sidra et al. [4] reported in contrast with higher frequency of teachers not discussing oral hygiene with students or parents. Almost all the teachers (94.7%) encouraged students to brush their teeth regularly. The oral hygiene practices of teachers in the present study were good (69.5%). This was similar to many studies [5,20] but again in contrast to findings by Sidra et al. [4]. Fernando et al. [21] in Sri Lanka conducted an intervention study to assess their influence on oral health promotion in the school environment and concluded that oral health promotion activities can be effectively instilled in a pre-school environment by the education of teachers. This study could be conducted only in a selected region of Kathmandu city. It is suggested that similar studies involving a larger group can be conducted in the future.

CONCLUSION

Pre-school teachers had good oral hygiene practices, and they encouraged the students to adopt such practices. However, they had inadequate knowledge regarding oral health which may be enhanced by more educational programs related to oral health in schools. There is a need for adoption school oral health programs in Nepal to keep a tab on the developing burden of oral diseases in children.

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