



Misconceptions about oral health among a group of Nigerian primary school teachers

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Abstract

Objective: To identify the various misconceptions that still exist among teachers about oral health practices and their incorrect ideas about dental conditions.

Method: The study was a descriptive cross-sectional study carried out between May and September 2008 among 640 primary school teachers in Oredo Local Government area of Benin City, Nigeria. Data collection was by the use of self-administered questionnaire.

Result: More than a third of the respondents (39.6%) felt that tooth decay is caused by worms, 0.3% felt it is caused by black magic. While 11.9% felt gingival bleeding is caused by worms. Tooth loss was considered a natural process by 43% of the respondents and 53.1% did not feel it is possible to keep all the teeth in the dentition for life. In addition, 23.2% did not consider tooth loss a serious health problem. Traditional medicine was used for toothache and gingival bleeding in 5.0% and 2.6% of cases respectively, while 6.5% reported self medication. Improvement of oral hygiene by toothbrushing was considered ineffective in the prevention of gum disease by 15.3% of the respondents.

Conclusion: This survey revealed that a few misconceptions still exist among teachers about what constitutes appropriate oral health practices and correct knowledge of oral diseases and remedies. These misconceptions should be corrected to prevent the teachers from impacting incorrect knowledge on the children they teach. In service training of the teachers in the area of oral health is therefore recommended.

Key words: Oral health, misconception, teachers

Introduction

The largest and most important group that may be reached by health education is found in the school system⁽¹⁾ but this group can only be reached by partnering with the school teachers. Teachers, traditionally, have educated their pupils about oral health and they often participate in school-based prevention programmes⁽²⁾. Health professionals, educators and social workers agree that the health education in schools is a cost effective way of meeting the health needs of children⁽³⁾ but only if the correct knowledge is impacted.

Misconception can be defined as a vague and imperfect or mistaken understanding of something⁽⁴⁾. It is difficult to teach away and is at variance with current scientific knowledge⁽⁵⁾. A variety of sources of misconceptions have been identified and these include experiences encountered in daily life⁽⁶⁾ and traditional instructional language⁽⁷⁾.

Misconceptions in the area of medicine are numerous and they can impede learning. Oral health myths and misconceptions still exist in Nigeria where there is no formal oral health promotion and health education policies or programme⁽⁸⁾. Such misconceptions include the sayings that the primary reason for brushing is to remove food debris and that bleeding gums and tooth decay are normal. Other beliefs are that oral health does not affect overall health and that tooth loss is natural and so it is impossible to have the full complement of teeth till old age⁽⁹⁾.

The effects of both good and bad teaching are powerful and cumulative. Where teachers have misconceptions about issues, it can have very grave consequences on their pupils. Children also have their own fair share of misconceptions. If their misconceptions are ignored or not promptly corrected, their original beliefs are likely to win out in the long run and subsequent learning may be hindered⁽¹⁰⁾. These misconceptions may also be passed on to the members of their families and eventually to the larger society. The objective of this study was therefore to identify the various misconceptions that still exist among teachers about oral health practices and their incorrect ideas about dental conditions.

Materials and method

The study was a descriptive cross-sectional study carried out between May and September 2008 among 640 primary school teachers in Oredo Local Government area of Benin City, Nigeria. A quantitative data collection method, using a pretested self-administered questionnaire, was employed. The questionnaire elicited information on demography and respondents' opinion on causes of tooth decay and gum bleeding, opinion on whether tooth loss is natural or a serious problem, opinion on effectiveness of dental therapy and respondents' source of treatment of dental conditions. The questions were both open and closed ended.



Permission to carry out the study was obtained from all the selected school principals and administrators where applicable. Informed consent was also obtained from the participating school teachers. Participants were assured of the confidentiality of their responses. The study was approved by University of Benin Teaching Hospital Ethics and Research Committee.

The statistical package for social sciences (SPSS) version 13.0 was used for the analysis of data collected. Data collected was subjected to descriptive statistics in form of cross tabulation. Gender was used for grouping. Test of significance was done with chi-square, level of significance set at $p < 0.05$.

Result

Out of the 640 teachers studied, only 603 returned properly filled and usable questionnaires. This gave a response rate of 94.2%. There were more female teachers in this study with male:female ratio of 1:7.3. Majority of the respondents (42.8%) were of the opinion that tooth decay is caused by sugar while only a fraction (0.5%) of them believed tooth decay is caused by germs (Table 1). Over a third of the respondents were of the opinion that the condition is caused by worms (39.6%). There was no significant statistical difference among the male and female respondents on the opinion on causes of tooth decay ($p = 0.08$). Fewer respondents (11.9%) attributed gingival bleeding to worms. More than half of the respondents (51.7%) felt it can be as a result of trauma but only 10.1% reported that gingival bleeding is multifactorial in nature (Table 2). The difference in the opinion of the male and female respondents on causes of gingival bleeding was statistically significant (0.039).

Tooth loss was considered a natural process by 43% of the respondents (Table 3) and 53.1% did not think that it is possible to keep all the teeth in the dentition throughout life (Table 4). In addition, 23.2% did not consider tooth loss a serious health problem (Table 5). Improvement of oral hygiene by Toothbrushing was considered ineffective in the prevention of gum disease by 15.3% of the respondents (Table 6).

Table 1. Respondents' opinion about the cause of tooth decay

Cause of tooth decay	Gender		Total n (%)
	Male n (%)	Female n (%)	
Worms	26 (35.6)	213 (40.2)	239 (39.6)
Magic	0 (0.0)	2 (0.4)	2 (0.3)
Sugar	28 (38.4)	230 (43.3)	258 (42.8)
Poor oral hygiene	8 (11.0)	17 (3.2)	25 (4.1)
Germs	1 (1.4)	2 (0.4)	3 (0.5)
Multifactorial	8 (11.0)	53 (9.9)	61 (10.1)
It is natural	2 (2.7)	13 (2.5)	15 (2.5)
Total	73 (100.0)	530 (100.0)	603 (100.0)

Fisher's $P = 0.0805$

Table 2. Respondents' opinion about the cause of gingival bleeding

Cause of gingival bleeding	Gender		Total n (%)
	Male n (%)	Female n (%)	
Worms	1 (1.4)	71 (13.4)	72 (11.9)
Trauma	41 (56.2)	271 (51.1)	312 (51.7)
Infection	8 (11.0)	50 (9.4)	58 (9.6)
Poor oral hygiene	0 (0.0)	2 (0.4)	4 (0.7)
Systemic disease	12 (16.4)	63 (11.9)	75 (12.4)
Nutritional deficiency	2 (2.7)	2 (0.4)	4 (0.7)
Multifactorial	8 (11.0)	53 (9.9)	61 (10.1)
It is natural	2 (2.7)	13 (2.5)	15 (2.5)
Total	73 (100.0)	530 (100.0)	603 (100.0)

$\chi^2 = 14.769$, $df = 7$, $P = 0.039$

Table 3. Respondents who feel loss of teeth is natural

Loss of teeth is natural	Gender		Total n (%)
	Male n (%)	Female n (%)	
Yes	24 (32.9)	235 (44.3)	259 (43.0)
No	44 (60.3)	257 (48.5)	301 (49.9)
I don't know	5 (6.8)	38 (7.2)	43 (7.1)
Total	73 (100.0)	530 (100.0)	603 (100.0)

$\chi^2 = 3.757$, $df = 2$, $P = 0.153$

Table 4. Respondents who will feel the full complement of teeth can be kept for life

Teeth can be kept for life	Gender		Total n (%)
	Male n (%)	Female n (%)	
Yes	41 (56.2)	242 (45.7)	283 (46.9)
No	14 (19.2)	156 (29.4)	170 (28.2)
I don't know	18 (24.6)	132 (24.9)	150 (24.9)
Total	73 (100.0)	530 (100.0)	603 (100.0)

$\chi^2 = 3.904$, $df = 2$, $P = 0.142$

Table 5. Respondents who feel loss of teeth is a serious health problem

Loss of teeth is a serious health problem	Gender		Total n (%)
	Male n (%)	Female n (%)	
Yes	59 (80.8)	404 (76.2)	463 (76.8)
No	11 (15.1)	102 (19.2)	113 (18.7)
I don't know	3 (4.1)	24 (4.6)	27 (4.5)
Total	73 (100.0)	530 (100.0)	603 (100.0)

$\chi^2 = 0.80$, $df = 2$, $P = 0.67$

Table 6. Respondents who feel tooth-brushing can prevent gum problem

Tooth-brushing can prevent gum problem	Gender		Total n (%)
	Male n (%)	Female n (%)	
Yes	59 (80.8)	365 (69.9)	424 (70.3)
No	8 (11.0)	84 (15.8)	92 (15.3)
I don't know	6 (8.2)	81 (15.3)	87 (14.4)
Total	73 (100.0)	530 (100.0)	603 (100.0)

$\chi^2 = 4.529$, $df = 2$, $P = 0.104$



Table 7. Respondents action after toothache

Action after toothache	Gender		Total n (%)
	Male n (%)	Female n (%)	
Complained to a dentist	15 (60.0)	196 (70.5)	211 (69.6)
Complained to a medical doctor	1 (4.0)	9 (3.2)	10 (3.3)
Used traditional medicine	1 (4.0)	14 (5.0)	5 (5.0)
Self medication	4 (16.0)	35 (12.6)	39 (12.9)
Used salt and warm water mouth bath	0 (0.0)	3 (1.1)	3 (1.0)
No action was taken	4 (16.0)	21 (7.6)	25 (8.2)
Total	25(100.0)	278 (100.0)	303(100.0)

Fisher's P = 0.588

Table 8. Respondents action after gingival bleeding

Action after gingival bleeding	Gender		Total n (%)
	Male n (%)	Female n (%)	
Complained to a dentist	3 (6.7)	55 (20.6)	58 (18.5)
Complained to a medical doctor	3 (6.7)	7 (2.6)	10 (3.2)
Used traditional medicine	4 (8.9)	4 (1.5)	8 (2.6)
Self medication	2 (4.4)	3 (1.1)	5 (1.6)
Used salt and warm water mouth bath	20 (44.4)	140 (52.4)	160 (51.3)
No action was taken	13 (28.9)	58 (21.7)	71 (22.8)
Total	45(100.0)	267(100.0)	312(100.0)

Fisher's P = 0.0025

Toothache has been experienced by 50.2% of all the respondents. Traditional medicine was used after a toothache in 5.0% of cases while 12.9% of the respondents resulted to self medication. Only 1.0% used salt and warm water mouth bath. No action was taken in 8.2% of cases and 1.7% and 69.6% complained to a medical doctor and a dentist respectively.

More than half of the respondents (51.7%) had gingival bleeding in the past. Traditional medicine was used after gingival bleeding in 2.6% of cases while 1.6% of the respondents resulted to self medication. No action was taken in 22.8% of cases and 3.2% and 18.5% complained to a medical doctor and a dentist respectively. More respondents (51.3%) used salt and warm water mouth bath after gingival bleeding. There was a statistically significant difference in the male and female respondents' remedies for gingival bleeding (p= 0.0025).

Discussion

The concept of a tooth-worm causing caries and periodontitis has existed in diverse cultures and across the ages and is still held on even into this century⁽¹¹⁾. There were many different ideas with regard to the appearance of tooth-worms. In England, for instance, it was thought that the tooth-worm looked like an eel. In Northern Germany, people supposed the tooth-worm to be red, blue, and gray and in many cases the worm was compared to a maggot. The gnawing worm was held responsible for many evils and, in particular, was blamed for toothache provoked by caries⁽¹²⁾. In China, it was claimed by 10% of the mothers studied that dental caries was caused by worms⁽¹³⁾. In Africa, the Maasai believe a toothache is caused by worms,

which they claim are big enough to be seen with a naked eye⁽¹⁴⁾. Even more disheartening is the finding in this study that more than a third of the primary school teachers believed tooth decay was caused by worms.

The misconceptions about the causes of dental diseases also bring about formulation of many inappropriate and sometimes harmful remedies. In popular medicine, numerous therapies were applied in order to eradicate the tooth-worm. Fumigation of the carious tooth, with the smoke from burning henbane or leek seeds, was used to drive the "toothworm" out of the tooth⁽¹⁵⁾. In addition to the fumigations, magical formulas and oaths were also used⁽¹¹⁾. Traditional medicine is widely used as remedy for dental problems⁽¹⁶⁾. It has been reported that Clove oil, when applied to a cavity in a decayed tooth, relieves toothache and that it helps to decrease infection in the teeth due to its antiseptic properties⁽¹⁷⁾. A few individuals in this study resulted to the use of traditional medicine for toothache and gingival bleeding.

Dental service utilization is low in this study although the respondents visited the dentist more for toothache than for gingival bleeding. This may be because individuals tend to seek dental care only when in pain^(18, 19, 20). This is similar to a previous study in Nigeria where 1.7% of the mothers of preschool children studied visited traditional healers instead of utilizing the available oral health services⁽²¹⁾. It was also reported that 7.8% of a group studied in Cameroon patronize traditional healer⁽²²⁾.

Self-medication is the use of nonprescription medicines by people on their own initiative and it is often seen as gaining personal independence from established medicine. It has been defined as medication of oneself without professional supervision so as to alleviate an illness or a condition⁽²³⁾. Patients suffering from dental pain often self-medicate with over-the-counter (OTC) analgesics in order to alleviate their symptoms or to avoid dental attendance altogether⁽²⁴⁾. However, the use of dangerous substances such as petrol and vinegar for self medication has also been reported⁽²²⁾. The prevalence of self medication for oral health problems in this study is lower than the 42% reported in hospital based study in Nigeria⁽²⁵⁾, 48% and 67.8% in community based studies reported in Burkina Faso⁽²⁰⁾ and Cameroon⁽²²⁾ respectively.

It is widely believed that tooth loss is an inevitable part of the aging process^(26, 27) and this affects the attitude of individuals to their oral health. Although increase in edentulism in advanced ages has been documented⁽²⁸⁾, it is very possible to keep the full complement of teeth throughout life⁽²⁹⁾. Only less than half of the respondents believe this possibility.

Tooth-brushing is considered a very effective mechanical method of plaque control and ultimately serves a great role in the prevention of periodontal diseases^(30, 31). On the other hand, it was reported that a group of Chinese claimed that preventive oral health were ineffective⁽³²⁾. More than a quarter of the respondents in this study are still not sure of this well documented effectiveness of tooth-brushing.

Although oral health knowledge does not necessarily relate to better health behavior, it has been said that people who have assimilated this knowledge and feel a sense of personal control over their oral health are more likely to adopt self-care practices⁽³³⁾. Training of teachers is therefore advocated to bring about correction of the misconceptions and ultimately ensure improved oral



health knowledge which will translate to proper oral health practices among the teachers and eventually among their pupils.

Conclusion

This survey revealed that a few misconceptions still exist among teachers about what constitutes appropriate oral health practices and correct knowledge of oral diseases and remedies. There is also misconception about edentulism and the role of toothbrushing in the prevention of oral diseases. These misconceptions should be corrected to prevent the teachers from impacting incorrect knowledge on their pupils. In service training of the teachers in the area of oral health is therefore recommended.

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