

KNOWLEDGE ON CAUSES OF PERIODONTAL DISEASE IN A SAMPLE OF SECONDARY SCHOOL TEACHERS IN AWKA SOUTH LOCAL GOVERNMENT AREA, ANAMBRA STATE

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Abstract

This study investigated Knowledge on causes of periodontal disease among secondary school teachers in Awka South Local Government Area, Anambra State. Three specific objectives were formulated with three corresponding research questions and two null hypotheses were posed to guide the study. The descriptive cross-sectional survey research design was adopted for the study. The population for the study comprised 850 secondary school teachers in the 18 public secondary schools in Awka South Local Government Area, Anambra State. A Simple random sampling technique was used to draw the sample of 278 secondary school teachers for the study. The instrument for data collection was a structured Level of Knowledge on Causes of Periodontal disease Questionnaire (LKCPQ). The face validity of the instrument was established by three experts from the Department of Human Kinetics and Health Education, University of Nigeria Nsukka. Frequencies and percentages were used to answer the research questions while Pearson's chi-square was used to test the null hypotheses at 0.05 level of significance. Results of the study among others revealed that Secondary schools teachers had average knowledge (42.0%) on causes of periodontal diseases. Secondary School Teachers in age group 20-35 years (9.6%), age group 36-45 years (21.1%) and age group 46 – 65years (10.9) had low knowledge of causes of periodontal disease; The females had a higher proportion of knowledge (24.9) than male (17.7). There was a significant difference in the knowledge of the cause of periodontal disease based on age and gender ($p < .05$). This study concludes that secondary school teachers in Awka South had low-level knowledge of causes of periodontal disease It was recommended among others that government should encourage and sensitize the teachers to dispense the knowledge on causes of periodontal disease acquired, to their students and community in order to tame its occurrence.

Keywords: Periodontal diseases, Knowledge, secondary school teachers

Introduction

Oral health disorders have a widespread presence, associated with a high rate of morbidity. Oral diseases are among the most common and preventable non-communicable diseases (NCDs) worldwide. Periodontal disease is a global health dilemma affecting a vast population in developed and developing countries in a range of 20-50 per cent and severe periodontitis accounts for about 10 per cent of overall periodontal conditions affecting the population internationally (Nazir, 2017; Frencken, Sharma, Stenhouse, Green, Lavery & Dietrich, 2017). In addition, severe periodontitis has been reported as the major factor contributing to tooth loss in many countries worldwide (Khan, Khalid & Awan, 2016). Globally, most children have signs of gingivitis. Among adults the initial stages of periodontal diseases are widespread. Severe periodontitis, which may result in tooth loss, is found in 5-20 per cent of adults in most populations, while mild to moderate periodontitis affects a majority of adults (Kassebaum, et

al. 2017). Periodontal diseases are commonly found in developing nations like Nigeria. Lack of awareness of oral health, poor socioeconomic status, improper or lack of dental office visits, and poor literacy results in the widespread presence of periodontal disease (Bansal, Ingle, Kaur, Ingle & Charania, 2015).

The periodontium is a structure that holds and supports teeth and is formed by four components: the cementum, gingiva, periodontal ligaments, and the alveolar bone. Together, these four components act as a single unit to grasp the teeth and provide a supportive role (Tobón, Isaza, Restrepo, Zapata & Martínez, 2012). Periodontal disease is an inflammatory condition that damages tissues that surround the teeth (Santos, et al., 2010). Histological alteration in gums occurs throughout the periodontal disease development and appears as sub-clinical inflammation. If the initial lesion is left untreated, the disorder progresses to form a chronic lesion. When a chronic lesion persists, bone tissue and ligaments of the periodontium are involved, and changes to the periodontal structure begin (Taylor, 2014).

Periodontal disease begins with gingivitis, an inflammatory process caused by bacteria in dental plaque, a microbial biofilm that forms on teeth and gingiva. Gingivitis is caused by plaque, which results in soft tissue inflammation, with no attachment loss and firm periodontium. Chronic periodontitis occurs because of untreated gingivitis, resulting in deep periodontal pockets that may eventually cause tooth loss (Mohamed, Idris & Ahmed, 2013). Periodontal disease is associated with systemic conditions like atherosclerosis and diabetes mellitus (Kinane, Stathopoulou & Papapanou, 2017). Microorganisms found in dental plaque play a significant role that rapidly advances the development of periodontal disease in an individual. Chronic periodontitis is classified into two conditions: generalized and localized. When the condition damages more than 10 teeth in a person's dentition, it is diagnosed as generalized chronic periodontitis, while localized chronic periodontitis affects less than 10 teeth (Karobari, Siddharthan, Adil, Khan, Venugopal, Rokaya, Heboyan, Marya & Marya, 2022). Gingivitis and chronic periodontitis progress occur by forming dental plaque, which is influenced by environmental factors, microbial biofilm, and genetic factors (Kinane, Stathopoulou & Papapanou, 2017). If allowed to persist, periodontal disease results in obliteration of hard and soft tissues that eventually result in pocket formation and recession of gingiva (Kinane, Stathopoulou & Papapanou, 2017). It has been found that periodontal disease is a critical health problem as it has a direct relationship with systemic diseases like cardiovascular disease, diabetes mellitus, prematurely born infants with low birth weight, respiratory disease, and cerebral infarction (Bansal, Ingle, Kaur, Ingle & Charania, 2015).

Periodontal tissues are subjected to different degrees of inflammation, known as periodontal disease, with subsequent reversible or irreversible damage at any stage of the adult life. The most common forms of periodontal diseases are gingivitis and periodontitis, which adversely affect the life quality, economy, health warfare, and psychology of individuals (Tonetti, Jepsen, Jin & Otomo-Corgel, 2017). Diseases of the craniofacial complex greatly affect an individual's quality of life with nutritional, functional and psychosocial consequences. Further, oral diseases are a costly economic burden for individuals, families and nations both industrialized and developing (Nakre & Harikiran, 2013).

Periodontal disease is any disease that affects the tissue structure supporting the tooth, including the gums. This often presents itself as bleeding or swollen gums (gingivitis) and sometimes as bad- smelling breath. In its more severe form, loss of gum attachment to the tooth and supporting bone causes “pockets” and loosening of teeth (periodontitis). If the disease progresses, it may result in loss of the tooth. The major cause of periodontal disease is the presence of pathogenic bacteria in dental plaque, which can be removed with regular cleaning.

If plaque is not removed it becomes hard (called calculus or tartar) and this can only be removed by a trained oral health professional. Gum diseases are also associated with systemic health problems, namely increased risks of heart disease, premature and low-weight birth, and increased severity of diabetes. Tobacco use is a major risk factor for gum disease. Although not all cases of gingivitis progress to periodontitis, all periodontal diseases start as gingivitis (Karobari, Siddharthan, Adil, Khan, Venugopal, Rokaya, Heboyan, Marya & Marya, 2022). Smoking is a well-documented risk factor for periodontal disease (Shaju, 2010; Khan, Khalid & Awan, 2016).

Many are the causative agents of periodontal oral health problem ranging from lifestyle, poor oral health and poor dietary habits. Poor oral hygiene is the main cause of periodontal diseases and other related diseases such as; cardiovascular diseases are related to the blood vessels in the mouth. Since the bacteria in plaque can affect blood vessels, dental hygiene is very important. If bacteria inflame the gums, it can then find its way into your bloodstream, and as a result, cause an accumulation of plaque on the arteries and harden them. This process is referred to as atherosclerosis. And it can have far-reaching consequences. It can result in the interruption of blood flow in addition to blockages of the heart, and can eventually even lead to a heart attack. The type 2 diabetes risk increased 5 times for an individual with poor oral hygiene when compared to non-diabetics. Poor oral hygiene brings about an association between diabetes and several oral diseases like caries, gingival inflammation and periodontal disease.

Knowledge is essential in every aspect of life including oral hygiene. World Health Organization (2022) opined that knowledge is a pre-requisite to practice of any preventive measures. Knowledge is the possession of information, skill and understanding gained through learning and experience (Oparah, Fidelis & Nwankwo, 2019). Also, Knowledge is the ability to envisage information about a particular situation, having an understanding of a situation that may result to healthy outcome (Enemuo & Obayi, 2021). Knowledge of the causes of periodontal diseases is the essential information needed to understand that may reduce the morbidity rate. To maintain oral health and prevent the occurrence of periodontal diseases in a population, it is essential that there be acquisition of adequate oral health knowledge together with instilling of appropriate self-care practices (Deinzer, Micheelis, Granrath, & Hoffmann, 2009). Knowledge of causes of periodontal disease such as; Poor oral hygiene; which includes lack of brushing of teeth, lack of using floss to remove debris, consumption of sugars, Poor dietary habits, Lifestyle of smoking, Lifestyle of drinking alcohol, Using Mouth for acidic substance, Using teeth on hard objects, Eating food on extreme temperature, Oral piercing and Untreated gingivitis. Knowledge of the causes of periodontal diseases among secondary school teachers is vital to tame the tide of its occurrence.

Secondary school teachers are those teachers in charge of in-school adolescents in various secondary schools. Teachers are known for their unique role of instructing, directing and correcting students under them. Therefore, teachers should be an embodiment of knowledge in order to guide students under them. Teacher-led oral health education is equally effective in improving the oral health knowledge and oral hygiene status of adolescents as dentist-led and peer-led strategies (Azodo, & Umoh, 2015). The role of teachers in oral health education, which is a veritable tool in preventing oral disease, can only be harnessed if they are properly trained (Haleem, Siddiqui, Khan, 2012). Several studies previously conducted across developing countries have shown that various factors like the socioeconomic status of an individual, smoking habit, consumption of alcohol, hypertension, history of diabetes, obesity, and stress are indirectly related to the onset of periodontal disease (Karobari, Siddharthan, Adil, Khan, Venugopal, Rokaya, Heboyan, Marya & Marya, 2022). All oral diseases are of multi-factorial origin and share modifiable risk factors with the leading NCDs. Although dental biofilm is known as the primary etiologic agent

for periodontal diseases, the course of these conditions could be modified by a range of risk factors including age, oral hygiene measures, smoking, gender, and systemic diseases (Nazir, 2017). This study determined the influence of age and gender in the knowledge of the cause and preventive measures of periodontal disease.

Age is an important variable in the knowledge of cause and preventive measures of periodontal disease. Many studies have stated that the prevalence of periodontal disease has been found to increase with advancing age (AlJehani, 2014). Studies conducted in developed countries have described changes in periodontal disease progression patterns with a corresponding increase in age. Studies found that the destruction of periodontal structures and loss of bone is rarely found among subjects below 40 years of age (Razak, et al., 2014). Gender is also an essential factor to be considered. Various studies have found increased destruction of periodontal structures in male population samples compared with females. This may be attributed to ignorance of oral hygiene measures in males compared to females, especially in low-income developing countries (Meisel, et al., 2008). Understanding the influence of age and gender will help in development of desirable attitude and healthy practice modification towards knowledge of cause and preventive measures of periodontal disease.

The location of the study is Awka South Local Government Area in Anambra State. Anambra State is a State in southeastern Nigeria. The main cities in the state are Awka, Nnewi, Ekwuluobia, Oko and Onitsha. Awka South is one of the LGA in Awka. There are eighteen public secondary schools in Awka South Local Government area out of which seven schools was used for the study. Through research reports, oral health has been a neglected area because, many people, if they have any challenge with their dentition, they will plug the tooth, hence reducing their quality of life. Secondary school teachers allow and patronize sugar-coated snacks, too spicy and fast fried food. These could lead to oral problems such as periodontitis, halitosis, gingivitis and dental caries

Purpose of the Study

This study determined the level of knowledge on causes and preventive measures of periodontal disease in a sample of secondary school teachers in Awka South Local Government Area, Anambra State. Specifically, the study examined:

1. Level of knowledge on causes of periodontal disease in a sample of secondary school teachers in Awka South Local Government Area, Anambra State.
2. Level of knowledge on causes of periodontal disease in a sample of secondary school teachers in Awka South Local Government Area, Anambra State based on age.
3. Level of knowledge on causes of periodontal disease in a sample of secondary school teachers in Awka South Local Government Area, Anambra State based on gender.

Research Questions

The following research questions guided the study:

1. What is the level of knowledge on causes of periodontal disease in a sample of secondary school teachers in Awka South Local Government Area, Anambra State?
2. What is the level of knowledge on causes of periodontal disease in a sample of secondary school teachers in Awka South Local Government Area, Anambra State based on age?
3. What is the level of knowledge on causes of periodontal disease in a sample of secondary school teachers in Awka South Local Government Area, Anambra State based on gender?

Research Hypotheses

The following null hypotheses were formulated for the study and were tested at .05 level of significance.

1. There is no significant difference in the level of knowledge on causes of periodontal disease in a sample of secondary school teachers in Awka South Local Government Area, Anambra State based on age.
2. There is no significant difference in the level of knowledge on causes of periodontal disease in a sample of secondary school teachers in Awka South Local Government Area, Anambra State based on gender.

Method

To achieve the objective, descriptive survey research design was used for the study. The population for the study consists of all the teachers in secondary schools in Awka South, Anambra state. The study was conducted in public secondary schools in Awka South. The researcher observes that food vendors allowed into the schools are mainly those with sugar-coated foods, too spicy and fast fried foods are on sale. Most teachers as well as the students are patronizing them. Thus, the researcher deemed the area suitable for the study. The population for the study comprised 850 secondary school teachers in the 18 public secondary schools in Awka South Local Government Area, Anambra State. The sample for the study comprised 278 secondary school teachers for the study. A simple random sampling technique was used to draw seven schools for the sample. All the teachers in the schools selected were all-inclusive in the study. This process yielded 278 secondary school teachers for the study. The instrument for data collection was a structured Level of Knowledge of Causes and Preventive Measures of Periodontal Disease Questionnaire (LKCPQ). The face validity of the instrument was established by three experts from the Department of Human Kinetics and Health Education, University of Nigeria Nsukka. Frequencies and percentages were used to answer the research questions while Pearson's chi-square was used to test the null hypotheses at 0.05 level of significance.

Results

Table 1: Socio-demographic characteristic of respondent (n=278)

S/N	Variables	F	%
1	Gender		
	Male	108	38.85
	Female	170	61.15
2	Age		
	20 – 35	98	35.25
	36 – 45	127	45.68
	46 -65	53	19.07

Table 2: Proportion response of Secondary school teachers on level of knowledge on causes of periodontal disease (n=278)

S/N	Causes of periodontal disease	Yes		No		knowledge
		F	%	F	%	
1.	Poor oral hygiene	173	62.0	105	38.0	AK
2.	consumption of sugars	132	47.0	146	53.0	AK
3.	Poor dietary habit	75	27.0	203	73.0	LK
4.	Lifestyle of smoking	103	37.0	175	63.0	LK
5.	Lifestyle of drinking alcohol	96	34.5	182	65.5	LK
6.	Using mouth to collect acidic substance	117	42.1	161	58.0	AK
7.	Using teeth on hard objects	209	75.0	69	25.0	HK
8.	Eating food on extreme temperature	106	38.0	172	62.0	LK
9.	Oral piercing	96	35.0	185	66.5	LK
10.	Untreated gingivitis	75	27.0	203	73.0	LK
Percentage Average		42.0		58.0		

Note: Low Knowledge (LK) = 0-39%, Average Knowledge (AK) = 40-69%, High Knowledge (HK) = 70% and above

Table 2 showed that the overall percentage (42.0%) indicated that secondary schools teachers had average knowledge on the causes of periodontal diseases. The table also showed that the respondents (75.0%) had high knowledge on Using teeth on hard objects, response; Poor oral hygiene (62.0%), consumption of sugars(47.0), Using mouth to collect acidic substance(42.1%) had average knowledge, while response on; Poor dietary habit(27.0), Lifestyle of smoking (37.0%), Lifestyle of alcohol(34.5), Eating food on extreme temperature(38.0%), Oral piercing (35.0), and Untreated gingivitis (27.0%) had low knowledge.

Table 2: Proportion response of secondary schools teachers (SST) on level of knowledge on causes of periodontal disease based on age (n=278)

S/N	Causes of periodontal disease	20 – 35		36 – 45		46 – 65	
		Yes		Yes		Yes	
		f	%	f	%	f	%
1.	Poor oral hygiene	37(13.3)	61(21.9)	103(37.0)	24(8.6)	33(11.9)	20(7.2)
2.	Consumption of sugars	29(10.4)	69(24.8)	65(23.4)	62(22.3)	38(13.7)	15(5.4)
3.	Poor dietary habit	15(5.4)	83(29.8)	35(12.6)	92(33.1)	25(9.0)	28(10.1)
4.	Lifestyle of smoking	33(11.9)	65(23.4)	50(18.0)	77(27.7)	20(7.2)	33(11.9)
5.	Lifestyle of drinking alcohol	17(6.1)	81(29.1)	63(22.7)	64(23.0)	16(5.7)	37(13.3)
6.	Use mouth to acidic substance	15(5.4)	83(29.8)	67(24.1)	60(21.6)	35(12.6)	18(6.4)
7.	Using teeth on hard objects	61(21.9)	37(13.3)	107(38.5)	20(7.2)	41(14.7)	12(4.3)
8.	Eating extreme temperature	23(8.3)	75(27.0)	45(16.2)	82(29.5)	38(13.7)	15(5.4)
9.	Oral piercing	20(7.2)	78(28.0)	41(14.7)	86(30.9)	35(12.6)	18(6.5)
10.	Untreated gingivitis	17(6.1)	81(29.1)	37(13.3)	90(32.4)	21(7.6)	32(11.5)
Percentage Average		9.6	25.6	22.1	23.6	10.9	8.2

Key: Low Knowledge (LK) = 0-39%, Average Knowledge (AK) = 40-69%, High Knowledge (HK) = 70% and above

Data in Table 2 showed that overall; SST in age group 20-35 years had low knowledge (9.6%) of causes of periodontal disease based on age; SST in age group 36-45 years had low knowledge (22.1%) of causes of periodontal disease based on age; SST in age group 46-65 years had low knowledge (10.9%) of causes of periodontal disease based on age.

Table 3: Proportion response of secondary schools teachers (SST) on level of knowledge on causes of periodontal disease based on gender (n=278)

		Gender		Male		Female			
		Yes	No	Yes	No	Yes	No		
S/N	Causes of periodontal disease	f	%	f	%	f	%	f	%
1.	Poor oral hygiene	81	29.1	27	9.7	92	33.1	78	28.1
2.	consumption of sugars	75	27.0	33	12.0	57	20.4	113	40.6
3.	Poor dietary habits.	35	12.6	73	26.2	40	14.4	130	46.8
4.	Lifestyle of smoking	37	13.3	71	25.6	66	23.7	104	37.4
5.	Lifestyle of drinking alcohol	31	11.2	77	27.7	65	23.3	105	37.8
6.	Using Mouth for acidic substance	47	16.9	61	21.9	70	25.2	100	36.0
7.	Using teeth on hard objects	89	32.0	19	6.8	120	43.2	50	18.0
8.	Eating food on extreme temperature	44	15.8	64	23.0	66	23.7	104	37.4
9.	Oral piercing	24	8.6	84	30.2	72	26.0	98	35.2
10.	Untreated gingivitis	30	10.8	78	28.0	45	16.2	125	45.0
Percentage Average		17.7		21.1		24.9		31.6	

Note: Low Knowledge (LK) = 0-39%, Average Knowledge (AK) = 40-69%, High Knowledge (HK) = 70% and above

Table 3 indicated that SST in Awka South, Anambra state both male and female had low level of knowledge on causes of periodontal disease. The table showed that both male SST had low knowledge (17.7%), and female SST had low knowledge (24.9%) on causes of periodontal disease. The female had higher proportion of knowledge (24.9) than male (17.7).

Table 4:

Summary of Chi-square (χ^2) analysis testing the null hypothesis of no significant difference in level of knowledge on causes of periodontal disease among SST based on age (n=278).

Level of knowledge	Age			χ^2_{cal}	df	χ^2_{tab}	decision
	20-35yrs	36 – 45yrs	46 – 65yrs				
Low Knowledge	53(45.8)	67 (59.4)	10 (24.8)				
Average Knowledge	27(28.2)	39 (36.5)	14 (15.3)	33.36	4	9.48	reject
High Knowledge	18(24.0)	21(31.1)	28 (13.0)				

Note: Level of significance=0.05

Table 4 represents the summary of the chi-square analysis on the level of knowledge on causes of periodontal disease among secondary school teachers in Awka South, Anambra state based on age. The table indicated that the age group 45-65 years had the highest respondents with high knowledge also the age group 36-45years had the highest respondents with average knowledge. The result shows that there was a significant difference between the age of SST and level of knowledge on causes of periodontal disease, because chi-square calculated is greater than chi-square tabulated at 0.05 significant of difference ($\chi^2_{cal}=33.36$, $df=4$, $\chi^2_{tab}=9.48$). Since the tabulated or critical value was less than the calculated at 0.05 level of significance, the null hypothesis was rejected. This implies that significant difference existed in the level of knowledge on causes of periodontal disease among SST based on age.

Table 5:

Summary of Chi-square (χ^2) analysis testing the null hypothesis of no significant difference in level of knowledge on causes of periodontal disease among SST based on gender (n=278).

Level of Knowledge	Gender		χ^2_{cal}	df	χ^2_{tab}	decision
	Male	Female				
Low Knowledge	68(50.5)	62 (79.5)				
Average Knowledge	22 (31.1)	58 (48.9)	18.76	2	5.99	reject H_0
High Knowledge	18 (26.4)	50(41.6)				

Table 5 represents the summary of chi-square analysis on the level of knowledge on causes of periodontal disease among secondary school teachers in Awka South, Anambra state based on gender. The table indicated that the female gender had the highest respondents with high knowledge. The result shows that there was a significant difference between male and female gender of SST. Since the tabulated or critical value was less than the calculated ($\chi^2_{cal}=18.76$, $df=2$, $\chi^2_{tab}=5.99$) at 0.05 level of significance, the null hypothesis was rejected. This implies that significant difference existed in the level of knowledge on causes of periodontal disease among SST based on gender.

Discussions of findings

Table 1 showed that overall percentage (42.0%) indicated that secondary schools teachers had average knowledge on the causes of periodontal diseases. On the contrary, the Study conducted by Gholami, Pakdaman and Virtanen (2012) demonstrated poor knowledge of periodontal disease and periodontal health, including its aetiology, signs, and outcomes, among Iranian adults. The majority of the participants had poor knowledge regarding the aetiology of periodontal disease, including the role of dental plaque. This finding is in line with earlier findings regarding the causes of periodontal disease (Deinzer et al., 2009; Taani, 2002). Lin et al. showed that a high percentage of Chinese adults were unaware of the causes of oral diseases, including dental caries and gum disease (Lin, et al., 2001)

Data in Table 2 showed that overall; SST in age group 20-35 years had low knowledge (9.6%), SST in age group 36-45 years had low knowledge (22.1%) and also SST in age group 46-65 years had low knowledge (10.9%) of causes of periodontal disease based on age. The table 4 indicated that the age group 45-65 years had the highest respondents with high knowledge. The result shows that there was a significant difference between the age of SST and level of knowledge on causes of periodontal disease, ($\chi^2_{cal}=33.36$, $df=4$, $\chi^2_{tab}=9.48$). Since the tabulated or critical value was less than the calculated at 0.05 level of significance, the null hypothesis was rejected. This implies that significant difference existed in the level of knowledge on causes of periodontal disease among SST based on age. This contrasted with findings of a study among Japanese junior high school students who accorded dental caries (48%), a higher implication of dental plaque than periodontal disease (31%). Obviously, dental caries being of higher prevalence than periodontal diseases among the young may be the explanation. Globally, gingival bleeding is the most prevalent sign of periodontal disease, whereas the presence of deep periodontal pockets varies from 10% to 15% in adult populations (Petersen & Ogawa, 2012). On the other hand, no clear relationship between the periodontal knowledge score and age was evident (Tada & Hanada, 2004), which is in line with the findings of a study from Germany (Deinzer, et al., 2009), but in contrast to other findings in Jordan (El-Qaderi, & Quteish Ta'ani, 2004) and in Sweden (Mårtensson, 2006).

Table 3 indicated that SST in Awka South, Anambra state both male and female had low level of knowledge on causes of periodontal disease. The table showed that both male SST had low knowledge (17.7%), and female SST had low knowledge (24.9%) on causes of periodontal disease respectively. Table 5 indicated that the female gender had the highest respondents with

high knowledge. The result shows that there was a significant difference between male and female gender of SST. Since the tabulated or critical value was less than the calculated ($\chi^2_{cal} = 18.76$, $df = 2$, $\chi^2_{tab} = 5.99$) at 0.05 level of significance, the null hypothesis was rejected. This is in agreement with the study by Gholami, Pakdaman, Jafari, and Virtanen, (2012) on Knowledge and attitudes towards periodontal health among adults in Tehran. Women had significantly higher mean knowledge scores than did men ($P = 0.011$), in another study, the periodontal knowledge score was significantly higher among women, a finding also reported among Japanese young adults (Tada & Hanada, 2004). This implies that women value dental health more than do men and are more willing to improve their health status and receive relevant information (Galdas, Cheater, & Marshall, 2005).

Conclusions

Based on the findings and discussion of the study, the following conclusions were reached.

Overall, Secondary Schools Teachers had average knowledge on causes of periodontal diseases (42.0%). While SST in age group 20-35years, SST in age group 36-45years and also SST in age group 46-65 years had low knowledge of causes of periodontal disease based on age. Male SST had low knowledge (17.7%), and female SST had low knowledge (24.9%) on causes of periodontal disease respectively. the female gender had the highest proportion of respondents with high knowledge of causes of periodontal diseases.

Secondary Schools Teachers had significant difference of knowledge on causes of periodontal disease based on age and gender.

Recommendations

On the bases of the findings and conclusions, the following recommendations were made:

State Ministry of Health in collaboration with School board should endeavor to organize seminars and workshop for secondary school teachers to update their knowledge on causes of periodontal disease.

There is need for further research on causes of periodontal disease among secondary school teachers.

Secondary school teachers should be allowed in-service training to enable them continuously progress in the knowledge in this area

Government should encourage and sensitize the teachers to dispense the knowledge on causes of periodontal disease acquired, to their students and community in order to tame its occurrence.

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