common and more severe in older individual especially those over 40 years, males, Negroid race, rural dwellers and residents of developing countries.[5,6] The World Health Organization reported that most children and adolescents exhibit signs of mild periodontal disease in the form of gingivitis, while 5–20% of adult populations experience severe periodontal disease in the form of severe periodontitis.[4]

The main etiological agent of periodontal disease is plaque, which is a biofilm that contains dominantly microorganisms. These organisms directly through the release of toxins, enzymes and toxic metabolic product and indirectly through complement activation and hypersensitivity reaction cause periodontal disease. However, periodontal disease will only occur when the balance between the host resistance and the etiological agents has been disrupted. The principal risk factors for the periodontal disease are poor diet and nutrition, obesity, physical inactivity, tobacco use, excessive use of alcohol and psychosocial stress, insufficient personal/oral hygiene, and general health.[7-9] These factors act either through one or combination of mechanism to decrease host defense or increase the accumulation or effect of the etiological agent. These environmental factors in combination with genetics have been identified to influence the susceptibility and predisposition to periodontal disease.[10]

The removal of plaque and plaque retentive factors which can be achieved by proper oral self-care and dental visit, are considered the most effective preventive measure. The clinical care and chairside prevention are considered both unaffordable and inappropriate for the control of periodontal diseases in many parts of the developing world.[3] Public health measures through the effective collaboration of stakeholders in oral and periodontal health with a focus on the underlying determinants of periodontal diseases is expected to achieve sustainable improvements in oral health.[3] The school system is considered a major stakeholder in preventive oral health because of the tremendous supportive capacity of schools on health programs. Education plays a pivotal role in shaping the lives of children and young adults and schools has proven effective in helping young people learn positive and healthy models of behavior. The opportunity of teacher to instruct all children, uniquely position them in an advantageous way in preventive healthcare delivery. 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 *et al*.[11] reported that dentist-led, teacher-led, and peer-led strategies of oral health education are equally effective in improving the oral health knowledge and oral hygiene status of adolescents. The outcome of school health programs depend on the teachers as active participation of teachers contribute to the successful implementation of oral health education program,[12] while limited instructions on dental health education among teachers or nonmotivated teachers result in unsuccessful oral health education programs.[13,14] The baseline information is necessary to develop effective training for primary school teachers. Hence, the objective of the study was to determine the baseline periodontal disease awareness and knowledge of Nigerian primary school teachers.

Subjects and Methods

This cross-sectional study was conducted among the public primary school teachers in Benin City, Edo State, Nigeria. The participants in this study were selected using multistage sampling technique and care was taken to avoid selection bias.The tool for data collection was a self-developed, validated, self-administered questionnaire. The questionnaire for the study was developed by the researchers and validated by Periodontologists. The developed questionnaire was pretested among 20 teachers not included in the study and comprised questions on awareness of periodontal disease and sources of information, symptoms of periodontal disease, age, and gender predispositions to periodontal disease, preventable nature of periodontal disease, interest in learning more, and their preferred mode of learning about periodontal disease. Informed consent was obtained from the participants. Participation in the study was voluntary and no incentive was offered. Anonymity was guaranteed the participants and they were encouraged to attempt all questions. The protocol for this study was reviewed and approval granted by the University of Benin Teaching Hospital Ethics and Research Committee. The data were subjected to descriptive statistics in the form of frequencies, cross tabulation, and percentages using Statistical Package of the Social Sciences version 17.0 (Chicago, IL, USA). The demographic characteristics in term of age was categorized into ≤40 years and >40 years, religion as Christianity and non-Christianity (Islam and African Traditional Religion), qualification as less than degree (National Certificate of Education), and greater than or equal to degree (Bachelor Degree, Higher National Diploma, Master's Degree, and Doctor of Philosophy) class taught as senior and junior, years of experience as ≤10 years and >10 years. The periodontal awareness was considered as dependent variable while demographic characteristics were considered as an independent variable. The test of association was done using either Chi-square or Fisher's exact statistics where applicable. *P* value was set at 0.05 for significance level.

Results

Out of 180 teachers recruited from seven public primary schools in Benin City, Edo State, Nigeria, 151 of them fully participated by filling the study questionnaire giving an 83.9% (151/180) response rate.

Demographic characteristics

The majority of the participants were >40 years old, females, Christians worked for more than 10 years, had teaching qualifications less than a degree and taught junior primary class [Table 1].

Table 1: Demographic characteristics of the participants

Characteristics	Gender *n* (%)		Total *n* (%)
	Male	Female	
Age (years)			
≤40	10 (47.6)	48 (36.9)	58 (38.4)
>40	11 (52.4)	82 (63.1)	93 (61.6)
Religion			
Christianity	16 (76.2)	116 (89.2)	132 (87.4)
Non-christianity	5 (23.8)	14 (10.8)	19 (12.6)
Qualification			
<Degree	19 (90.5)	97 (74.6)	116 (76.8)
≥Degree	2 (9.5)	33 (25.4)	35 (23.2)
Class taught			
Junior	9 (42.9)	69 (53.1)	78 (51.7)
Senior	12 (57.1)	61 (46.9)	73 (48.3)
Years of experience			
≤10	8 (38.1)	54 (41.5)	62 (41.1)
>10	13 (61.9)	76 (58.5)	89 (58.9)
Total	21 (100.0)	130 (100.0)	151 (100.0)

Table 2: Periodontal disease awareness of the participants

Characteristics	Heard of periodontal disease *n* (%)		*P*
	Yes	No	
Age (years)			
≤40	40 (69.0)	18 (31.0)	0.25
>40	72 (77.4)	21 (22.6)	
Gender			
Male	15 (71.4)	6 (28.6)	0.76
Female	97 (74.6)	33 (25.4)	
Religion			
Christianity	98 (74.2)	34 (25.8)	0.96
Non-christianity	14 (73.7)	5 (26.3)	
Educational attainment			
<Degree	86 (74.1)	30 (25.9)	0.99
≥Degree	26 (74.3)	9 (25.7)	
Class taught			
Junior	51 (65.4)	27 (34.6)	0.01
Senior	61 (83.6)	12 (16.4)	
Years of experience			
≤10	44 (71.0)	18 (29.0)	0.45
>10	68 (76.4)	21 (23.6)	
Total	112 (74.2)	39 (25.8)	

Periodontal disease awareness

A total of 112 (74.2%) of the participants reported awareness of the periodontal disease. The class taught was significantly associated with periodontal disease awareness ($P = 0.01$) [Table 2].

Sources of information on periodontal disease

The main sources of information on periodontal disease were television 33.9% (38/151), friends 16.1% (18/151), school 16.1% (18/151), radio 15.2% (17/151), and dental clinic 10.7% (12/151) [Figure 1].

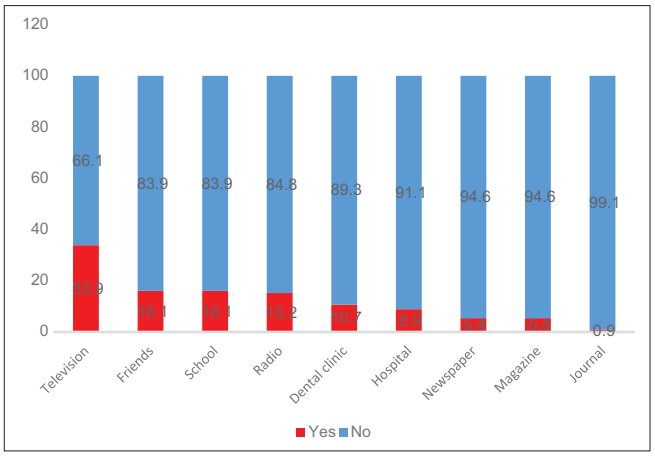

Figure 1: Sources of information on periodontal disease among the participants

Awareness of causes of tooth loss among adults

Of the participant, 29.8% (45/151) of them considered periodontal disease as the main cause of tooth loss among adults in Nigeria. The other major reported causes of tooth loss among the participants were dental caries 31.8% (48/151) and ageing 19.2% (29/151). There was a significant association between gender ($P < 0.01$), qualification ($P = 0.02$), and awareness of the most common causes of tooth loss among adults [Table 3].

Awareness of meaning of dental plaque and its consequences

Only 12.6% (19/151) of the participants knew dental plaque as soft debris on teeth. Less than one-third (29.1%) of the participants attested that plaque can cause periodontal disease while others reported it can dental caries 12.6% (19/151) and teeth staining 10.6% (16/151) [Table 4].

Awareness of age and gender predisposition to periodontal disease

Tables 5 and 6 show that the majority of the participants were not aware of age and gender predispositions to periodontal disease.

Awareness of symptoms of periodontal disease

The perceived manifestations of periodontal disease among participants reported were gum bleeding 35.1% (53/151), swollen gum 20.5% (31/151), painful gum 13.2% (20/151), and hole on the tooth 12.6% (19/151) [Figure 2].

Awareness of preventable nature of periodontal disease

A total of 70.2% (106/151) of the participants considered periodontal disease as a preventable disease [Table 7].

Best preventive method of periodontal disease

About half 49.0% (74/151) of the participants considered daily mouth cleaning as the best preventive method, while 7.9% (12/151) considered regular vitamin ingestion

Table 3: Participants' awareness of common causes of tooth loss in adults

Characteristics	Causes of tooth loss *n* (%)				*P*
	Ageing	Periodontal disease	Dental caries	I don't know	
Age (years)					
≤40	11 (19.0)	16 (27.6)	18 (31.0)	13 (22.4)	0.88
>40	18 (19.4)	29 (31.2)	30 (32.3)	16 (17.2)	
Gender					
Male	1 (4.8)	13 (61.9)	2 (9.5)	5 (23.8)	<0.01
Female	28 (21.5)	32 (24.6)	46 (35.4)	24 (19.2)	
Religion					
Christianity	26 (19.7)	38 (28.8)	41 (41.1)	27 (20.5)	0.74
Non-christianity	3 (15.8)	7 (36.8)	7 (36.8)	2 (10.5)	
Educational attainment					
<Degree	19 (16.4)	41 (35.3)	33 (28.4)	23 (19.8)	0.02
≥Degree	10 (28.6)	4 (11.4)	15 (42.9)	6 (17.1)	
Class taught					
Junior	19 (24.4)	21 (26.9)	27 (34.6)	11 (14.1)	0.02
Senior	10 (13.7)	24 (32.9)	21 (28.8)	18 (24.7)	
Years of experience					
≤10	10 (16.1)	21 (33.9)	17 (27.4)	14 (22.6)	0.50
>10	19 (21.3)	24 (27.0)	31 (34.8)	15 (16.9)	
Total	29 (19.2)	45 (29.8)	48 (31.8)	29 (19.2)	

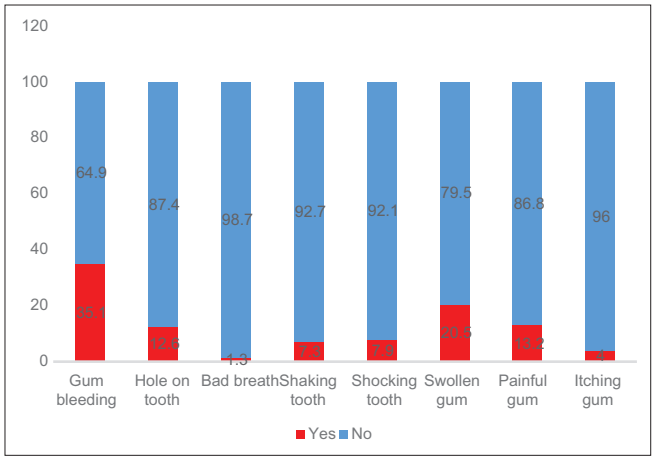

Figure 2: Participants' reported awareness of symptoms of periodontal disease

and 17.9% (27/151) less sugar consumption as the best preventive method.

Interest in learning and most preferred method of learning about periodontal disease

The majority 95.4% (144/151) of the participants expressed interest in learning about the periodontal disease. The most preferred methods in learning about periodontal disease in descending order were workshops, lectures, pamphlets, conferences, posters, and E-mail [Table 8].

Discussion

Periodontal disease is a major public oral health problem that impairs mastication, speech, esthetics, and oral health-related quality of life. The maintenance of periodontal health requires an informed public as well as self-awareness of the disease to motivate the sufferer into play role in the prevention and control of the disease through self-care and professional assistance.[15] It has been stated that periodontal disease awareness of the general public is strategically important because patients are more likely to seek professional treatment for the periodontal disease when they are aware of its existence.[16] In this study, 74.2% of the participants reported that they heard of the periodontal disease. The sources of information were varied with electronic media, specifically television indicated as the prevalent source of health information. The peripheral nature of the information gained from this source reemphasizes the role of healthcare provider in reinforcing correct information and clarifying the erroneous beliefs. It has been stated that information on health are well ingrained if received with reinforcement.[17] Although Savage[18] advocated the use of the mass media such as electronic media to promote periodontal health awareness, previous study revealed low positive preventive behavioral change despite high recall of oral health message from television campaign.[19] In comparison with a study in China, teachers' oral health information were also from many sources but dentists constituted the majority.[20] The participants who taught senior primary school children reported significantly higher periodontal disease awareness in this study. This is based on the fact that teachers who teach senior primary school have higher qualifications and may have heard about periodontal disease from the schools they attended, newspaper, magazine, and journal which also serve as valuable sources of oral health information. Periodontal disease as a component of chronic disease burden is said to be accelerating globally, advancing across all regions, and pervading all socioeconomic classes.[8] Although, periodontal

Table 4: Participants' awareness of meaning of dental plaque

Characteristics	Meaning of dental plaque *n* (%)				*P*
	Soft debris	Staining of teeth	Hard debris	I don't know	
Age (years)					
≤40	6 (10.3)	6 (10.3)	17 (29.3)	29 (50.0)	0.35
>40	13 (14.0)	13 (14.0)	16 (17.2)	51 (54.8)	
Gender					
Male	3 (14.3)	2 (9.5)	8 (38.1)	8 (38.1)	0.27
Female	16 (12.3)	17 (13.1)	25 (19.2)	72 (55.4)	
Religion					
Christianity	16 (12.1)	17 (12.9)	26 (19.7)	73 (55.3)	0.29
Non-christianity	3 (15.8)	2 (10.5)	7 (36.8)	7 (36.8)	
Educational attainment					
<Degree	13 (11.2)	15 (12.9)	25 (21.6)	63 (54.3)	0.78
≥Degree	6 (17.1)	4 (11.4)	8 (22.9)	17 (48.6)	
Class taught					
Junior	7 (9.0)	8 (10.3)	23 (29.5)	40 (51.3)	0.08
Senior	12 (16.4)	11 (15.1)	10 (13.7)	40 (54.8)	
Years of experience					
≤10	10 (16.1)	6 (9.7)	16 (25.8)	30 (48.4)	0.40
>10	9 (10.1)	13 (14.6)	17 (19.1)	50 (56.2)	
Total	19 (12.6)	19 (12.6)	33 (21.9)	80 (53.0)	

Table 5: Participants' awareness of ageing predisposition to periodontal disease

Characteristics	Meaning of dental plaque *n* (%)			*P*
	≤40 years	>40 years	I don't know	
Age (years)				
≤40	16 (27.6)	7 (12.1)	35 (60.3)	0.09
>40	33 (35.5)	21 (22.6)	39 (41.9)	
Gender				
Male	10 (47.6)	5 (23.8)	6 (28.6)	0.12
Female	39 (30.0)	23 (17.7)	68 (52.3)	
Religion				
Christianity	44 (33.3)	23 (17.4)	65 (49.2)	0.62
Non-christianity	5 (26.3)	5 (26.3)	9 (47.4)	
Educational attainment				
<Degree	39 (33.6)	20 (17.2)	57 (49.1)	0.72
≥Degree	10 (28.6)	8 (22.9)	17 (48.6)	
Class taught				
Junior	19 (24.4)	16 (20.5)	43 (55.1)	0.09
Senior	30 (41.1)	12 (16.4)	31 (42.5)	
Years of experience				
≤10	21 (33.9)	8 (12.9)	33 (53.2)	0.32
>10	28 (31.5)	20 (22.5)	41 (46.1)	
Total	48 (32.5)	28 (18.5)	74 (49.0)	

disease can affect any individual, it is known to be predominant in certain age and gender. The majority of the participants were not aware of age and gender predilection of periodontal disease. The stated significant risk factors for periodontal diseases in developing countries are age, sex, education, rural residence, plaque, and calculus.[21]

Periodontal disease constitute the leading and sometimes second most common cause of tooth loss in studies in the literature.[22-25] A total of 29.8% of participants considered periodontal disease as the main cause of tooth loss among adult Nigerians in this study. The awareness of periodontal disease as the most common cause of tooth loss among adults was significantly higher in males than females. However, participants with first degree or higher qualifications indicated dental caries and ageing as the more common causes of tooth loss among adult Nigerians than periodontal disease. The erroneous belief of tooth loss with ageing which is dominant in many developing countries and the increasing prevalence of dental caries may have influenced such awareness of the participants with first degree or higher qualifications.

Only a few (12.6%) of the participants knew dental plaque as soft debris on teeth. Likewise, the majority of adults in studies incorrectly defined the meaning of dental plaque, did not know the harmful effect of plaque and its role in the etiology of gingival disease.[26,27] A minority expressed knowledge or ability to identify dental plaque (16.4%) and its harmful effects (22.5%).[28] In this study also, 29.1% attested that plaque can cause periodontal disease and dental caries (12.6%). 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%).[29] 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.[7,8] Gingival bleeding and enlargement were the two most common manifestations of periodontal disease that participants were aware of Taani[26] and Alwaeli and Al-Jundi[28] reported

Table 6: Participants' awareness of gender predisposition to periodontal disease

Characteristics	Gender predisposition *n* (%)				*P*
	Male	Female	Both	I don't know	
Age (years)					
≤40	4 (6.9)	9 (15.5)	18 (31.0)	27 (46.6)	0.06[F]
>40	1 (1.1)	27 (29.0)	32 (34.4)	33 (35.5)	
Gender					
Male	2 (9.5)	3 (14.3)	8 (38.1)	8 (38.1)	0.24[F]
Female	3 (2.3)	33 (25.4)	42 (32.3)	52 (40.0)	
Religion					
Christianity	3 (2.3)	31 (23.5)	45 (34.1)	53 (40.2)	0.29[F]
Non-christianity	2 (10.5)	5 (26.3)	5 (26.3)	7 (36.8)	
Educational attainment					
<Degree	4 (3.4)	31 (26.7)	36 (31.0)	45 (38.8)	0.73[F]
≥Degree	1 (2.9)	5 (14.3)	14 (40.0)	15 (42.9)	
Class taught					
Junior	3 (3.8)	17 (21.8)	23 (29.5)	35 (44.9)	0.17[F]
Senior	2 (2.7)	19 (26.0)	37 (37.0)	25 (34.2)	
Years of experience					
≤10	3 (4.8)	14 (22.6)	18 (29.0)	27 (43.5)	0.40
>10	2 (2.2)	22 (24.7)	32 (36.0)	33 (37.1)	
Total	5 (3.3)	36 (23.8)	50 (33.1)	60 (39.7)	

F: Fisher's exact

Table 7: Participants' awareness of preventable nature periodontal disease

Characteristics	Periodontal dx is preventable *n* (%)		*P*
	Yes	I don't know	
Age (years)			
≤40	38 (65.5)	20 (34.5)	0.32
>40	68 (73.1)	25 (26.9)	
Gender			
Male	16 (76.2)	5 (23.8)	0.52
Female	90 (69.2)	40 (30.8)	
Religion			
Christianity	95 (72.0)	37 (28.0)	0.21
Non-christianity	11 (57.9)	8 (42.1)	
Educational attainment			
<Degree	81 (69.8)	35 (30.2)	0.86
≥Degree	25 (71.4)	10 (28.6)	
Class taught			
Junior	50 (64.1)	28 (35.9)	0.09
Senior	56 (76.7)	17 (23.3)	
Years of experience			
≤10	42 (67.7)	20 (32.3)	0.58
>10	64 (71.9)	25 (28.1)	
Total	106 (70.2)	45 (29.8)	

awareness of gingival bleeding as indication of the presence of periodontal disease in a significant proportion of Jordanians (60.8–88.0%). Gingival bleeding is the earliest and the most common manifestation of the periodontal disease, but has been erroneously believed to be normal in a report among Nigerians.[30] In general, Finns failed to realize that gingival bleeding is a symptom of gingival inflammation but this was about four decades ago.[31] Gingival enlargement is a prominent manifestation of periodontal diseases and was noted as the second most common presentation of periodontal disease among the participants. Unfortunately, about one in every eight participants indicated 'hole on the tooth' as a manifestation of periodontal disease. Hole on the tooth is one of the known manifestations of dental caries, but food packing related to periodontal pocket has been referred to as hole on the tooth by patients and that may be the reason for this erroneous consideration of 'hole on the tooth' as a manifestation of periodontal disease. In a study on conceptions among the general public in Finland regarding the etiology and prevention of periodontal disorders, 62%, 61%, and 45% of them reported tender gingiva, gingival bleeding, and loosening of the teeth correctly as symptoms of periodontal disorders, respectively.[32]

Chronic inflammatory periodontal diseases are universal, but the profession know it is possible to prevent, manage, and control almost all of these diseases.[15] Oral self-care practices have proven to be an effective preventive measure at the individual level for maintaining good oral health as a part of general health. Brushing and flossing are correlated with better periodontal health.[33] A total of 70.2% of the participants considered periodontal disease as a preventable disease and about half (49.0%) of the participants reported daily mouth cleaning as the best preventive method. This awareness of the preventable nature of periodontal diseases was similarly reported in other studies (63.4–73%).[26,27]

The expressed interest in learning about periodontal disease by the majority of the participants is an opportunity that should be tapped by the dental health stakeholders to improve their knowledge, clarify erroneous beliefs and motivate them into

Table 8: Participants' expressed interest in learning about periodontal disease

Characteristics	Interested in learning *n* (%)		*P*
	Yes	No	
Age (years)			
≤40	54 (93.1)	4 (6.9)	0.43
>40	90 (96.8)	3 (3.2)	
Gender			
Male	19 (90.5)	2 (9.5)	0.25
Female	125 (96.2)	5 (3.8)	
Religion			
Christianity	126 (95.5)	6 (4.5)	1.00
Non-christianity	18 (94.7)	1 (5.3)	
Educational attainment			
<Degree	112 (96.6)	4 (3.4)	0.35
≥Degree	32 (91.4)	3 (8.6)	
Class taught			
Junior	74 (94.9)	4 (5.1)	1.00
Senior	70 (95.9)	3 (4.1)	
Years of experience			
≤10	58 (93.5)	4 (6.5)	0.45
>10	86 (96.6)	3 (3.4)	
Total	144 (95.4)	7 (4.6)	

committed participation, and involvement in maintenance of the periodontal health of schoolchildren. The most preferred methods of learning about the periodontal disease identified as workshops and lectures should be employed to achieve an optimal result.

The findings of this study may be limited because it was conducted among only public primary school teachers. However, it has noted that public primary school teachers are career-oriented and more qualified and, therefore, will stand to benefit from the planned training. Caution should also be exercised in interpreting the findings of this study which was based strictly on self-reporting

Conclusion

A significant proportion of the participants have heard about periodontal disease from nondental clinic sources. There also existed a poor awareness of etiology, age and gender predispositions, manifestation, complications, and its preventable nature. However, the majority of them indicated interest in learning about the periodontal disease which should be utilized in optimizing their knowledge up to the level that they can be involved in the maintenance of periodontal health of school children.

References

1. Javed F, Näsström K, Benchimol D, Altamash M, Klinge B, Engström PE. Comparison of periodontal and socioeconomic status between subjects with type 2 diabetes mellitus and non-diabetic controls. J Periodontol 2007;78:2112-9.
2. Javed F, Al-Askar M, Samaranayake LP, Al-Hezaimi K. Periodontal disease in habitual cigarette smokers and nonsmokers with and without prediabetes. Am J Med Sci 2013;345:94-8.
3. Watt RG, Petersen PE. Periodontal health through public health – The case for oral health promotion. Periodontol 2000 2012;60:147-55.
4. Jin LJ, Armitage GC, Klinge B, Lang NP, Tonetti M, Williams RC. Global oral health inequalities: Task group – Periodontal disease. Adv Dent Res 2011;23:221-6.
5. Varenne B, Petersen PE, Ouattara S. Oral health status of children and adults in urban and rural areas of Burkina Faso, Africa. Int Dent J 2004;54:83-9.
6. Gökalp SG, Dogan BG, Tekçiçek MT, Berberoglu A, Unlüer S. National survey of oral health status of children and adults in Turkey. Community Dent Health 2010;27:12-7.
7. Petersen PE, Ogawa H. Strengthening the prevention of periodontal disease: The WHO approach. J Periodontol 2005;76:2187-93.
8. Petersen PE, Ogawa H. The global burden of periodontal disease: Towards integration with chronic disease prevention and control. Periodontol 2000 2012;60:15-39.
9. Petersen PE, Baehni PC. Periodontal health and global public health. Periodontol 2000 2012;60:7-14.
10. Michalowicz BS, Aeppli D, Virag JG, Klump DG, Hinrichs JE, Segal NL, *et al*. Periodontal findings in adult twins. J Periodontol 1991;62:293-9.
11. Haleem A, Siddiqui MI, Khan AA. School-based strategies for oral health education of adolescents – A cluster randomized controlled trial. BMC Oral Health 2012;12:54.
12. Petersen PE, Peng B, Tai B, Bian Z, Fan M. Effect of a school-based oral health education programme in Wuhan city, peoples republic of China. Int Dent J 2004;54:33-41.
13. Frencken JE, Borsum-Andersson K, Makoni F, Moyana F, Mwashaenyi S, Mulder J. Effectiveness of an oral health education programme in primary schools in Zimbabwe after 3.5 years. Community Dent Oral Epidemiol 2001;29:253-9.
14. Flanders RA. Effectiveness of dental health educational programs in schools. J Am Dent Assoc 1987;114:239-42.
15. Croxson LJ. Periodontal awareness: The key to periodontal health. Int Dent J 1993;43:167-77.
16. Brady WF. Periodontal disease awareness. J Am Dent Assoc 1984;109:706-10.
17. Rise J, Sögaard AJ. Effect of a mass media periodontal campaign upon preventive knowledge and behavior in Norway. Community Dent Oral Epidemiol 1988;16:1-4.
18. Savage KO. A pilot study of periodontal disease awareness amongst Nigerians. Afr Dent J 1994;8:30-5.
19. Bakdash MB, Lange AL, McMillan DG. The effect of a televised periodontal campaign on public periodontal awareness. J Periodontol 1983;54:666-70.
20. Jiang H, Tai B, Du M. A survey on dental knowledge and behavior of mothers and teachers of school children. Hua Xi Kou Qiang Yi Xue Za Zhi 2002;20:219-20, 222.
21. Mumghamba EG, Markkanen HA, Honkala E. Risk factors for periodontal diseases in Ilala, Tanzania. J Clin Periodontol 1995;22:347-54.
22. Odusanya SA. Tooth loss among Nigerians: Causes and pattern of mortality. Int J Oral Maxillofac Surg 1987;16:184-9.

23. Oginni FO. Tooth loss in a sub-urban Nigerian population: Causes and pattern of mortality revisited. Int Dent J 2005;55:17-23.
24. Esan TA, Olusile AO, Ojo MA, Udoye CI, Oziegbe EO, Olasoji HO. Tooth loss among Nigerians treated in teaching hospitals: A national pilot study. J Contemp Dent Pract 2010;11:017-24.
25. Danielson OE, Chinedu AC, Oluyemisi EA, Bashiru BO, Ndubuisi OO. Frequency, causes and pattern of adult tooth extraction in a Nigerian rural health facility. Odontostomatol Trop 2011;34:5-10.
26. Taani DQ. Periodontal awareness and knowledge, and pattern of dental attendance among adults in Jordan. Int Dent J 2002;52:94-8.
27. Asa'ad FA, Rahman G, Al Mahmoud N, Al Shamasi E, Al Khuwaileidi A. Periodontal disease awareness among pregnant women in the central and eastern regions of Saudi Arabia. J Investig Clin Dent 2015;6:8-15.
28. Alwaeli HA, Al-Jundi SH. Periodontal disease awareness among pregnant women and its relationship with socio-demographic variables. Int J Dent Hyg 2005;3:74-82.
29. d'Almeida HB, Kagami N, Maki Y, Takaesu Y. Self-reported oral hygiene habits, health knowledge, and sources of oral health information in a group of Japanese junior high school students. Bull Tokyo Dent Coll 1997;38:123-31.
30. Savage KO, Arowojolu MO. Perception of gingival bleeding by Nigerians. Afr J Med Med Sci 1997;26:91-3.
31. Murtomaa H, Ainamo J. Conceptions of Finnish people about their periodontal situation. Community Dent Oral Epidemiol 1977;5:195-9.
32. Markkula J, Murtomaa H, Ainamo J. Conceptions of Finnish people about the etiology and prevention of dental caries and periodontal disorders. Community Dent Oral Epidemiol 1977;5:108-15.
33. Lang WP, Ronis DL, Farghaly MM. Preventive behaviors as correlates of periodontal health status. J Public Health Dent 1995;55:10-7.

How to cite this article: Azodo C, Umoh A. Periodontal Disease Awareness and Knowledge among Nigerian Primary School Teachers. Ann Med Health Sci Res 2015;5:340-7.

Source of Support: Nil. **Conflict of Interest:** None declared.