Oral Health Practices among Adult Population in Plateau State, Nigeria

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ABSTRACT

Objective: This study assessed the social determinants of oral health practices and habits among adult population in Plateau state.

Methods: A descriptive cross-sectional survey was carried out on 600 respondents, aged 18-65 years, from three senatorial zones of Plateau state through a multi-stage sampling technique. Representative LGA was selected from each senatorial zone by balloting with equal representation of 200 willing participants. A pretested interviewer-administered questionnaire used for data collection was adapted from WHO questions on oral health practice to include demographic variables and associated social factors. Data obtained were analyzed using SPSS 23.0 and associations were computed using Chi square, and relationships were considered significant at p≤ 0.05 at 95% confidence interval. Ethical approval and permissions were obtained from relevant authorities.

Results: The study involved 600 respondents and 578 (96.3%) questionnaires were returned correctly filled. Respondents consist of 55.9% males and 44.1% females in ratio of 1.27:1, and mean age of 32.3±13.5 years. Majority of respondents' age group, educational and occupation status were ≤ 20 years (34.8%), secondary school (47.6%) and farming (41.7%) respectively. Oral health practices observed among respondents were; 51.9% cleaned/brushed their mouth twice daily, 88.6% use toothbrush as cleaning material, 6.1% shared toothbrush with their spouses, and 47.6% visited the dentist when they have oral disease. Dental visit was influenced by educational status (p=0.001) and occupation (p=0.001). Logistic regression analysis revealed significant correlation between visit to dentist and primary educational level (p=0.001, OR=3.353, 95% C.I=1.902-5.911), and occupations; farming (p=0.001, OR=0.221, 95% C.I=0.122-0.402) and business (p=0.001, OR=0.257, 95% C.I=0.177). Slightly over 70% of study respondents indulge in opening bottled drinks with their teeth while 18.5% use tobacco products and 25.8% consume alcohol.

Conclusion: The study observed that the majority of participants had good oral health practices and attitudes. However, percentage of respondents that indulge in negative oral habits such as opening of bottled drinks with one's teeth, oral use of tobacco products and alcohol consumption were higher than reported values from neighbouring states. Further studies to identify factors influencing such habits are needed to proffer ways to curb them

Keywords: Oral Health, Social, Practice, Participant

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INTRODUCTION

Oral health is fundamental to general health and well-being of individuals.[1,2,3,4] It is a state of being free from mouth and facial pain, oral diseases and disorders that limit an individual's capacity in biting, chewing, smiling, speaking and psychosocial well-being.[1,4] Oral health practices are effective measures for preventing and maintaining good oral health status of individuals, and utilization of oral health services.[5] Inability to perform these functions has serious implications on the quality of life.

Globally, studies have reported high prevalence of various forms of periodontal diseases and dental caries among different groups of adolescents and adults populations.[2,6,7] Oral diseases are among the most common and preventable non-communicable diseases worldwide which may affect people throughout their lifetime causing limitations in their functioning and even death.[8] Factors, not limited to cost and scarce resources have made prevention and intervention to oral disease not equitably available and/or affordable.[9,10,11] Epidemiological studies have opined that current health problems especially in the developed countries were associated with lifestyle changes, and the relationship between behavioral patterns and health disorders.[12,13] Oral health outcomes in both developing and developed countries are also pointers to oral health detrimental behaviors observed commonly among people from lower socio-economic status.[13] Hence, oral health is strongly related to lifestyle, cultural behavioral patterns and a person's life-long habits.[14,15]

Public health policy has been set to tackle social determinants of health as a person's social hierarchy and environment, peoples' culture and their perception, determine exposure to health-enhancing or health-damaging conditions in their daily life and it varies with locations.[16,17,18,19]

However, available resources for healthcare in most developing countries which Nigeria belongs to, are inadequate to support the traditional curative care of dental diseases.[10,20,21] Hence, effective oral health preventive practices is challenging in our environment of diverse cultures, ethnicities and other social practices in maintenance of oral health.

This study was aimed to assess the social determinants of oral health practices and habits in adult population in Plateau State.

MATERIALS AND METHODS

The study was a descriptive cross-sectional survey carried out on 600 willing participants, aged 18-65 years in plateau state, Nigeria through a multi-stage sampling technique. Plateau state was divided into three senatorial zones and all the zones were selected. A list of Local Government Areas (LGA) from each senatorial zone was made and a representative LGA for each zone was randomly selected by balloting. Each of the three selected study LGAs had equal representation of 200 participants. At each index community, every 2nd house was selected, and persons who met the inclusion criteria and willing to participate in the study were recruited. Two interviewers were trained and calibrated, and pretesting of the study questionnaire was conducted on 20 adult participants from Jos South LGA with reliability test using Cronbach's alpha value of 0.76. An interviewer-administered questionnaire adapted from WHO questions on oral health practice to include demographic variables, associated social factors, and oral health practices and habits was used for data collection. Analysis of data was carried out using SPSS 23.0 (IBM Corp., Armonk, NY, USA). Results of variables were illustrated using tables and charts while associations and relationships were computed using Chi square and correlations. Associations were considered significant at p≤ 0.05 at 95% confidence interval. Ethical approval and consent were received from relevant authorities and respondents respectively.

RESULTS

The study involved 600 respondents and 578 (96.3%) questionnaires were returned correctly filled, 55.9% respondents were males and 44.1% females in ratio of 1.27:1, with mean age of 32.3 ±13.5 years (males: 33.2± 12.5 years, females: 32.3± 14.6 years). Majority of respondents' age group, educational and occupation status were ≤ 20 years (34.8%), secondary school (47.6%) and farming (41.7%) respectively (Table 1).

Majority (88.6%) of the respondents uses toothbrush as a cleaning material among other cleaning materials such as chewing sticks (4.7%), charcoal (2.6%), and salt and water (4.1%). Approximately thirty-two percent of the respondents utilize the medium size textured tooth brush in cleaning their teeth. Slightly above half of the respondents (51.9%) cleaned their mouth twice daily while 35.6% cleaned theirs once. Forty-seven percent respondents visited the dentist when they have oral disease while 10.9% managed it themselves, 14. 5% the physician, 3.3% the herbalist and 1.9% consult friends (Table 2).

Table 1: Demographic characteristics of participants

Variables	Frequency	Percent (%)	Mean ± SD
Gender			
Male	323	55.9	
Female	255	44.1	
Age group (years)			32.3 ± 13.5
≤20	201	34.8	
21-30	94	16.3	
31-40	125	21.6	
41-50	108	18.7	
>50	50	8.6	
Education level			
None	10	1.7	
Primary	64	11.1	
Secondary	275	47.6	
Tertiary	229	39.6	
Occupation			
Civil-servants	227	39.3	
Farming	241	41.7	
Business	40	6.9	
Students	70	12.1	
Total	578	100.0	

Oral habits of respondents; 18.5% and 25.8% of the respondents take tobacco and alcohol respectively. The types of tobacco consumed included chewing (33.6%), snuff (33.6%), cigarette (23.4%) and (9.4%) use other forms (Table 2).

Majority (70.4%) of respondents open bottled drinks with their teeth, while 6.1% shared their toothbrush with their spouses. Very few respondents (3.5%) have filed their teeth (artificial creation of midline diastema between the maxillary central incisors) while 6.1% indulge in bruxism (Figure 1)

There was no statistical significant difference observed between sociodemographic variables and the type of tooth cleaning materials used by the respondents (Table 3).

Bivariate analysis revealed statistically significant differences between respondent's demographic characteristics; age-group (p=0.004), educational level (p=0.001), occupation (p=0.001) and whom they visit (dentist or non-dentist) when they have oral disease (Tables 4 and 5).

Logistic regression analysis showed significant correlation between visit to dentist and farming (p=0.001, OR=0.221, 95% C.I=0.122-0.402) and business (p=0.001, OR=0.257, 95% C.I=0.177) occupations, and primary school education (p=0.001, OR=3.353, 95% C.I=1.902-5.911) (Table 6).

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DISCUSSION

Good oral health status requires good oral health maintenance culture, hence, the need to take into cognizance the components of its practices among the populace. Participants in this study used different materials to clean their teeth, ranging from toothbrush, chewing sticks, charcoal to salt and water. Although, 88.6% of study participants claimed using toothbrush as tooth cleaning material, however below average (32.0%) utilizes the recommended medium textured toothbrush. The high usage of soft textured toothbrush among participants (61.1%) in the study environment may be attributed to lack of adequate information on the recommended toothbrush textures. A previous study on self-rated oral health status among tertiary school students reported higher percentage usage of toothbrush and the recommended medium size textured toothbrush.[20,22] However, toothbrush usage among adult population in relative environment was observed to be of lower value.[1,3,21] The high percentages observed in the above Nigerian studies may be attributed to the increasing oral health awareness, easy availability and low cost of toothbrush as a tooth cleaning material in Nigeria

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Table 2: Oral health practices of participants.

Variables	Frequency (n)	Percent (%)
What do you use to clean/brush your mouth?		
Toothbrush	512	88.6
Chewing sticks	27	4.7
Salt and water	24	4.1
Charcoal	15	2.6
How often do you clean/brush your mouth?		
Once	206	35.6
Twice	300	51.9
Thrice	72	12.5
What texture of toothbrush do you use?		
Soft	313	61.1
Medium	163	31.8
Hard	36	7.1
What do you do when you have oral disease?		
See the Dentist	275	47.6
See the Physician	84	14.5
See the herbalist	19	3.3
Self-medication	63	10.9
See friends	11	1.9
Others	126	21.8
Do you take tobacco?		
Yes	107	18.5
No	471	81.5
Type of tobacco		
Chewing tobacco	36	33.6
Snuff	36	33.6
Cigarette	25	23.4
Others	10	9.4
Do you drink alcohol?		
Yes	149	25.8
No	429	74.2
Total	**578**	**100.0**

Studies around our environment have also reported that most participants brush their teeth once daily as against the recommended twice daily cleaning. Oral hygiene practices amongst 54.3% elderly participants in Ibadan[3] and 77.3% undergraduate students at Ile- Ife[22] supported the above assertion. However, this study observed that slightly above half of the respondents (51.9%) cleaned their mouth twice daily.

Oral health service utilization among Nigerians in previous studies has been reported to be low[2,3]and the pattern has not changed significantly from recent studies.[1,23] Although a considerable number of participants (47.6%) in this study were observed to have visited the dentist when they had tooth problems. There were statistical significant differences between whom to see when one has oral diseases with educational level (p= 0.001) and occupation (p= 0.001). Participants of primary educational level (p=0.001, OR=3.353, 95% C.I =1.902-5.911) and farmers (p=0.001, OR=0.221, 95% C.I =0.122-0.402) visited the dentist more. This observation may not be unconnected as majority of people from the study environment are predominantly farmers. However, self-medication among participants before seeking dental professional care was observed to be low (10.9%) when compared with other studies.[24]

Table 3: Association between demographic characteristics and tooth cleaning materials

Demographic characteristics	Cleaning materials (%)				X^2	*P*-value
	Chewing stick	Charcoal	Toothbrush	Salt & water		
Gender						
Male	15(55.6)	9(60.0)	28(54.9)	18(75.0)	3.870	0.276
Female	12(44.4)	6(40.0)	231(45.1)	6(25.0)		
Educational						
None	0(0.0)	0(0.0)	10(2.0)	0(0.0)		
Primary	5(18.5)	3(20.0)	56(10.9)	0(0.0)	10.352	0.323
Secondary	14(51.9)	8(53.3)	237(46.3)	16(66.7)		
Tertiary	8(29.6)	4(26.7)	209(40.8)	8(33.3)		
Occupation						
Civil servant	11(40.7)	7(46.7)	199(38.9)	10(41.7)		
Farmers	10(37.0)	5(33.3)	218(42.6)	8(33.3)	10.228	0.332
Business	0(0.0)	2(13.3)	34(6.6)	4(16.7)		
Student	6(22.2)	1(6.7)	61(11.9)	2(8.3)		
Age group						
≤20	9(33.3)	6(40.0)	174(34.0)	12(50.0)		
21-30	6(22.2)	1(6.7)	86(16.8)	1(4.2)		
31-40	4(14.8)	4(26.7)	110(21.5)	7(29.2)	11.138	0.517
41-50	5(18.6)	2(13.3)	100(19.5)	1(4.2)		
>50	3(11.1)	2(13.3)	42(8.2)	3(12.5)		
Total	**27 (4.7)**	15 (2.6)	512 (88.6)	24(4.1)		

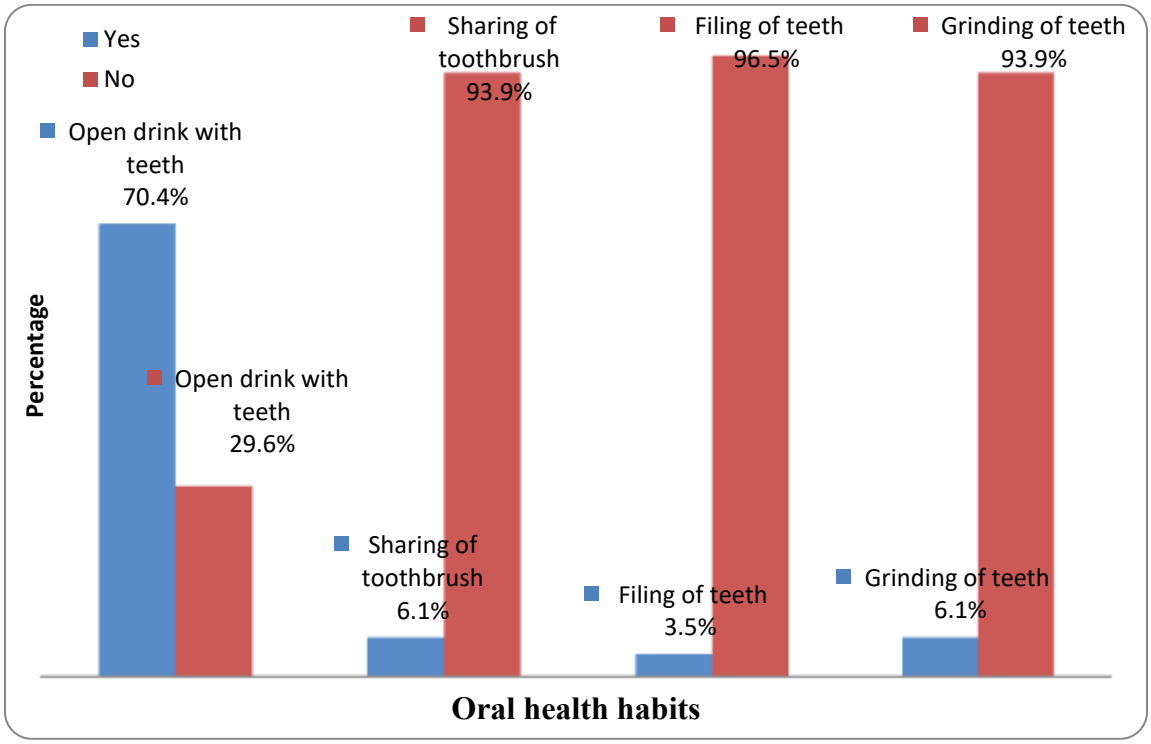

Figure 1: Percentage distribution of study participants according to oral health habits

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Table 4: Association between demographic characteristics and whom participants visit when they have oral diseases

Characteristics	See Dentist	See Physician	See Herbalist	Self medication	See friends	Others	χ2	P-value
Gender								0.650
Males	157(48.6)	48(14.9)	11(3.4)	36(11.1)	8(2.5)	63(19.5)	3.323	
Females	118(46.3)	36(14.1)	8(3.1)	27(10.6)	3(1.2)	64(24.7)		
Age group							40.722	0.004
≤20	71(35.3)	24(11.9)	6(3.1)	31(15.4)	5(2.5)	64(31.8)		
21-30	52(55.3)	14(14.9)	5(5.3)	8(8.6)	1(1.1)	14(14.8)		
31-40	73(48.4)	19(15.2)	3(2.4)	12(9.6)	2(1.6)	16(12.8)		
41-50	57(52.8)	19(17.6)	2(1.9)	6(5.5)	2(1.9)	22(20.3)		
>50	22(44.0)	8(16.0)	3(6.0)	6(12.0)	1(2.0)	10(20.0)		
Educational level							94.381	0.001
None	6(60.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	4(40.0)		
Primary	20(31.3)	12(18.8)	5(7.8)	5(10.8)	1(1.6)	21(32.7)		
Secondary	95(34.5)	36(13.2)	11(4.0)	41(14.9)	5(1.8)	87(31.6)		
Tertiary	154(67.2)	36(15.8)	3(1.3)	17(7.4)	2(5.2)	14(6.1)		
Occupation							58.635	0.001
Civil servants	89(89.2)	24(10.6)	8(3.5)	35(15.5)	5(2.2)	66(29.0)		
Farmers	146(60.6)	39(16.2)	5(2.1)	16(6.6)	5(2.1)	24(12.4)		
Business	18(45.0)	4(15.0)	4(10.0)	5(12.5)	1(2.5)	6(15.0)		
Students	22(31.4)	22(1.4)	2(2.9)	7(1.0)	0(0.0)	24(34.3)		
Total	**275(47.6)**	**89(15.4)**	**19(3.3)**	**63(11.0)**	**11(1.9)**	**120(20.8)**		

Table 5: Demographic characteristics and whom to see when participants have oral disease

Characteristics	Who do see when you have oral disease		χ2	P-value
	Dentist (%)	Non-dentist (%)		
Age				
≤20	71(35.3)	130(64.7)	21.658	0.001
21-30	52(55.3)	42(44.7)		
31-40	73(58.4)	52(41.6)		
41-50	57(52.8)	51(47.2)		
>50	22(44.0)	28(56.0)		
Occupation				
Civil servant	89(39.2)	138(60.8)	30.141	0.001
Farming	146(60.6)	95(39.4)		
Business	18(45.0)	22(55.0)		
Student	22(31.4)	48(68.6)		
Educational level				
None formal	6(60.0)	4(40.0)	61.714	0.001
Primary	20(31.2)	44(68.8)		
Secondary	95(34.5)	180(65.5)		
Tertiary	154(67.2)	75(32.8)		
Total	**275 (47.6)**	**303 (52.4)**		

Table 6: Logistic regression analysis of demographic characteristics and whom to see when participants have oral disease

Characteristics		95% C. I. for OR		*P*
	OR	Lower limit	Upper limit	
Age group (years)				
≤20	0.695	0.371	1.304	0.257
21-30	1.576	0.790	3.144	0.197
31-40	1.787	0.922	3.464	0.086
41-50	1.422	0.725	2.791	0.306
>50	1.0			
Occupation				
Civil servant	0.731	0.200	2.667	0.635
Farming	0.221	0.122	0.402	0.001
Business	0.257	0.177	0.373	0.001
Student	1.0			
Educational level				
None formal	1.407	0.795	2.490	0.241
Primary	3.353	1.902	5.911	0.001
Secondary	1.785	0.801	3.979	0.157
Tertiary				

OR= Odds Ratio. C.I= Confidence Interval

Tobacco and alcohol consumption increase the risk of oral cancers, cancer recurrence among other health hazards.[25] Tobacco and alcohol consumption were observed among 18.5% and 25.8% study participants respectively. World Health Organization projected a decreasing rate of tobacco smoking from 22.1% to 18.1% worldwide in 2010 and an increasing trend in Africa region from 12.8% to 18.9% respectively by 2025.[26] However, higher percentages (34.2% and 45.9%) have been reported among prison officials in Nigeria.[27] Other oral habits observed among study participants were; 70.4% open drinks with their teeth, 6.1% share toothbrush with their spouse, 3.5% filed their front teeth to create artificial diastema in-between the maxillary incisors and 6.1% were brauxers. The high percentage observed among participants who open drinks with their teeth in the study environment undermines the danger this poses and a clarion call for oral health promotion in these communities by oral health professionals. More so, these wrong oral habits if left unchecked can have serious implication such as dental trauma/tooth fracture, pain, spread of infection/increases risk of contracting diseases, impede functions and may overall reduce the quality of life.

CONCLUSION

The study observed that the majority of participants had good oral health practices and attitudes. However, percentage of respondents that indulge in negative oral habits such as opening of bottled drinks with one's teeth, oral use of tobacco products and alcohol consumption were higher than reported values from relative environment. Hence, corrective oral health promotion programmes in schools, workplaces and communities that will discourage such harmful oral practices are recommended. Further studies to identify factors influencing such habits are needed.

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Nil.

Conflict of Interest
None declared

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