

A COMPARATIVE STUDY ON ORAL HYGIENE PRACTICES AMONG SCHOOL ADOLESCENT IN A PUBLIC AND PRIVATE SCHOOL WITHIN OGOJA URBAN IN OGOJA LOCAL GOVERNMENT AREA OF CROSS RIVER STATE, NIGERIA.

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Abstract

This study was aimed at comparing oral hygiene practices among school adolescent in a public and private school in Ogoja urban of Cross River State, Nigeria. A cross-sectional descriptive study was employed to generate quantitative data from 400 respondents using pre-tested structured questionnaires. Convenient and systematic sampling techniques were used in the selection of schools and students respectively. The result of this study showed that most respondents had a fairly good knowledge of basic hygiene measures, fairly positive attitude towards oral hygiene and exhibited poor oral hygiene practices in both schools. This was significantly reported more in the public school than in the private school under survey ($P>0.05$). Majority of the respondents (98.2%) use commercial tooth brush and toothpaste for oral hygiene and half (50.0%) reported that they brush their teeth twice a day. Two-third of the respondents 300 (75.0%) had never visited a dental clinic, whereas only 100 (25.0%) reported to have visited a dental clinic at least once in a year mainly for dental examination and checkup (67.0%). Age, gender and parents socio-economic status were significantly associated with oral hygiene practices of school adolescent. Hence, government should be proactive in ensuring prompt availability and accessibility of oral health services in schools. The school curriculum on health education should incorporate oral hygiene to increase awareness among school adolescents.

Keywords: Oral hygiene, School adolescents, Ogoja urban, Nigeria

1. INTRODUCTION

The World Health Organization at Alma Ata in 1982 emphasized the need to attain a level of health that will permit productive life at the highest possible level by the year 2000. This emphasis was directed to all health management disciplines, of which oral health is an essential part. However, World Oral Health Report 2003, still qualified oral diseases as a major public health problem worldwide (Petersen, 2003). In most developed countries oral health is always seen as an

integral part of general health. This has led to robust improvement in oral health among children and adolescent in many industrialized countries especially with respect to dental caries (Burt, 1994; Petersen, Christensen, Moller & Johansen 1994; Beltran-Aguilar, Estupinan-Day & Baez, 1999). The factors attributed to this dramatic change in the trend may be modification in the dietary habits, improved oral hygiene practices, effective use of fluorides, and establishment of school-based preventive programs. Notably, significant oral health inequalities exist in disadvantaged communities, including refugee and migrant populations (Riggs, Germent, Gussy, Waters & Kilpatrick, 2012). In developing and under developed countries, dental disease levels are associated with cultural differences, low-income families, lower educational levels, low levels of oral health knowledge, inadequate oral hygiene, fewer dental visits, and a highly cariogenic diet.

In Nigeria, oral and dental health problem is such a significant problem among young children and adolescent. Enwonwu (1966) observed and reported the prevalence of destructive periodontal diseases to range between 15% in Northern Nigeria and 10% in Western Nigerians aged 15 to 19 years. Adegbenbo and El-Nadeef (1995) also reported caries experience as high as 30 and 43% among Nigerians aged 12 and 15 years, respectively. A study carried out in Ibadan North (LGA) of Oyo State Nigeria revealed that dental caries occurrence was 6.1% and this was found to be prevalent among females (69.2%), among those within the age bracket 14-16 years (61.5%) and those attending public Schools (76.9%) (Ogundele and Ogunsile, 2008). This low percentage occurrence of dental caries observed in the study can be attributed to the significantly high dental health knowledge, attitude and practice displayed by these adolescent. Several other studies in Nigeria indicate poor hygiene practice among adolescent (Umesi-Koleoso & Ayanbadejo, 2007; Olaitan, 2005). A recent cross-sectional survey in Delta and Edo state in Nigeria reported that one third (33.8%) of the participants had poor oral hygiene status (Azodo & Amenaghawon, 2013).

Adolescents represent a challenging group in terms of oral health because they have vulnerable permanent teeth erupting by the time they are establishing their independence from parental influence (Stokes *et al.*, 2006). In addition, practices such as frequent consumption of sweets, sugary foods and drinks, which have being identified by several researchers (Lingzhu *et al.*, 2003; Oloffson and Bratthall, 2003; Jacobs, 2005) as predisposing factors to dental caries are prominent among the adolescents.

The school is a good setting for programs to assure that children have an opportunity to receive protective dental sealants in a timely manner to prevent tooth decay. Health education programs in schools can stress the importance of oral health, increase understanding of the disease process, promote healthful behaviors, and reinforce the value of regular professional care for prevention.

The schools can make important contributions to the quality of life of low-income, minority, migrant, and immigrant children, who frequently have difficulty accessing information and services for both the prevention of disease and dental care. The burden of oral disease in children is significant. Most established oral diseases are irreversible, will last for a lifetime and have impact on quality of life and general health. School policies, the physical environment and education for health are essential for attainment of oral health and control of risk behaviours, such as intake of sugary foods and drinks, tobacco use and alcohol consumption. This study is aimed at comparing oral hygiene practices among adolescent in a public and private school within Ogoja urban in Ogoja Local Government Area of Cross River State, Nigeria.

2. METHODOLOGY

2.1 Study Setting

The study area is Ogoja urban in Ogoja Local Government Area. Ogoja Local Government Area is situated in the Northern part of Cross River State with an estimated population of 171,901 (NPC, 2006). Ogoja Local Government Area has 10 political wards with its headquarters at Ogoja town situated in the Northeast of the area. It has a land mass of 972km² (375sq kilometer and lies between latitude 5^o32¹ and 4^o27¹ North and longitude 7^o50¹ and 2^o20¹ East.

Ogoja Local Government Area is bounded by Yala Local Government Area to the west, Bekwara Local Government Area in the Southwest, Obudu Local Government Area in the East and Boki Local Government Area in the Southeast. There are two different climatic seasons in the area; the rainy season from March to October and the dry season from November to February. Most occupants of the area are traders, rural farmers and fishermen. It is predominantly a Christian area with few Muslims and traditional religious groups. Ogoja also consist of many tribes which includes Ishibori, Igoli, Mbube, Ekajuk and major communities such as Nwang, Ekopgrinya, Esham, Egbong, Nnang, Ewinimba and Bansara and mainly inhabited by Ekoi people. Basic infrastructure such as roads, markets and schools are available in the local government area. Ogoja also has one secondary health facility, one private health facility and numerous primary health facilities across the area.

2.1.1 Study Population

The study population comprised of school adolescent (10 to 19 years) in both public and private schools within Ogoja urban in Ogoja local government area of Cross River State, Nigeria.

2.1.2 Study Design

A descriptive cross-sectional study was employed to compare the practices of oral hygiene among school adolescent in Ogoja urban in Ogoja local government area of Cross River State, Nigeria from June to July 2013.

2.2 Sampling Technique

Convenient and systematic sampling techniques were employed in the selection of schools and students respectively. Two secondary schools within Ogoja urban (one public school and one private school) were conveniently selected. Class register was obtained in each selected school and systematic sampling technique was employed in selection of 40 students from each arm whose names appeared on the register with even numbers. In each school, about 200 students were duly selected across the five arms (SS1, SS2, JS1, JS2 & JS3) giving a total of **400 students** from both schools which became the actual sample size for the study.

That is, 40 students × 5 arms=200 students	-	Public school
40 students × 5 arms=200 students	-	Private school
Total 200 + 200	=	400 students

Assessment of Oral Hygiene Status was based on the Following:

ASSESSMENT SCORES	STATUS
Excellent	Brush teeth more than twice a day after every meal, regular visit to dental clinic and attend health education programme on oral health
Good	Brush at least twice a day, regular visit to a dental clinic and attend health education programme on oral health
Fair	Brush at least twice a day, no visit to a dental clinic and never attend health education program on oral health
Poor	Brush teeth only once a day or do not brush at all, no visit to a dental clinic and never attend health education programme on oral health

2.2.1 Data Collection

A structured questionnaire was designed to generate quantitative data from respondents. The questionnaires were self-administered to respondents with both open and closed ended questions. The questionnaire comprised of 36 items and 4 sections with attention on socio-demographic characteristics, knowledge of basic hygiene measures, attitude towards oral hygiene and oral hygiene practices among respondents.

2.2.3 Data Analysis

The questionnaires were manually sorted out and analyze using Statistical Package for Social Science (SPSS, version 15.0) and Microsoft excel 2007. Data was summarized using frequency tables, graphs, means and standard deviations. Chi-square test was used to compare proportions and associations between variables at 5% level of significance.

2.3 Ethical Consideration

Approval was obtained from principals of selected schools. Informed consent was also obtained from students who participated in the study. Confidentiality of information elicited was assured and participation was strictly voluntary.

3. RESULTS

All the 400 questionnaires were returned and analyzed giving a complete response rate of 100%. Most respondents were within the age bracket of 10-14 years 199 (49.8%) but the proportion was higher among respondents in the private school 124 (31.0%) than in the public school 75 (18.8%). This was duly followed by respondents within 15-19 years 194 (48.5%) which was found higher among adolescent in the public school 118 (29.5%) than in the private school 76 (19.0%). Only 7 (1.7%) respondents reported to be greater than 19 years and these respondents were found in the public school under survey. Nearly all respondents 382 (95.5%) were found to be Christians with the proportion slightly higher among respondents in private school 195 (48.8%) than those in the public school 187 (46.7%). Male and female distribution were 168 (42.0%) and 232 (58.0%) respectively. The percentage of males were slightly higher in the private school 88 (22.0%) than in the public school 80 (20.0%). Females on the other hand, were also slightly higher among respondents in the public school 120 (30.0%) than in the private school 112 (28.0%). About 80 (20.0%) respondents in each of the five arms from both schools also participated in the study. More than half of the respondents reported that they reside with both parents 239 (59.7%) with the proportion higher in the private school 133 (33.2%) than in the public school 106 (26.5%). Based on

their parent's occupational status, civil service 143 (35.8%), farming 112 (28.0%) and trading/business 60 (15.0%) were the predominant occupations of their fathers. Fathers who engage in civil service 79 (19.7%) and trading/business 43 (10.8%) were reported by respondents in the private school, whereas fathers whose main occupation is farming was largely reported by those in public school 90 (22.5%). Mothers predominant occupations as reported by the respondents were trading/business 136 (34.0%), farming 92 (23.0%) and teaching 75 (18.5%). Respondents in the private school largely reported that their mothers were traders/businesswomen 82 (20.5%) and teachers 56 (14.0%) while farming 92 (23.0%) were largely reported by those in public school (Table 1). Age ($P<0.05$), gender ($P<0.05$) and parents socio-economic status ($P<0.05$, $P<0.01$) were found to be strongly associated with oral hygiene practices of school adolescents in Ogoja urban.

Table 1: Socio-demographic Characteristics of Respondents (n=400)

VARIABLES	FREQUENCY (PERCENTAGE)		
	Public school (n=200)	Private school (n=200)	Total (n=400)
Type of school management			
Age in years			
10-14	75 (18.8)	124 (31.0)	199 (49.8)
15-19	118 (29.5)	76 (19.0)	194 (48.5)
>19	7 (1.7)	-	7 (1.7)
Total	200 (50.0)	200 (50.0)	400(100)
Religion			
Christianity	187 (46.7)	195 (48.8)	382 (95.5)
Islam	-	1 (0.2)	1 (0.2)
Traditional Religion	13 (3.3)	4 (1.0)	17 (4.3)
Total	200 (50.0)	200 (50.0)	400(100)
Sex			
Male	80 (20.0)	88 (22.0)	168 (42.0)
Female	120 (30.0)	112 (28.0)	232 (58.0)
Total	200 (50.0)	200 (50.0)	400(100)
Classes			
SS1	40 (10.0)	40 (10.0)	80 (20.0)
SS2	40 (10.0)	40(10.0)	80 (20.0)
JS1	40 (10.0)	40 (10.0)	80 (20.0)
JS2	40 (10.0)	40 (10.0)	80 (20.0)
JS3	40 (10.0)	40 (10.0)	80 (20.0)
Total	200 (50.0)	200 (50.0)	400(100)
Reside with			
Both parents	106 (26.5)	133 (33.2)	239 (59.7)
Single parents	15 (3.7)	35 (8.8)	50 (12.5)
Guardian	74 (18.5)	24 (6.0)	98 (24.5)
Alone	5 (1.3)	8 (2.0)	13 (3.3)
Total	200 (50.0)	200 (50.0)	400(100)

Father's Occupation			
Farmer	90 (22.5)	22 (5.5)	112 (28.0)
Teacher	16 (4.0)	27 (6.7)	43 (10.7)
Trader/Business	17 (4.2)	43 (10.8)	60 (15.0)
Civil servant	64 (16.0)	79 (19.7)	143 (35.8)
Pastor/Clergy	1 (0.2)	3 (0.7)	4 (1.0)
Health worker	4 (1.0)	8 (2.0)	12 (3.0)
Others	8 (2.0)	18 (4.5)	26 (6.5)
Total	200 (50.0)	200 (50.0)	400(100)
Mother's Occupation			
Farmer	92 (23.0)	-	92 (23.0)
Teacher	19 (4.8)	56 (14.0)	75 (18.5)
Trader/Business	54 (13.5)	82 (20.5)	136 (34.0)
Civil servant	26 (6.5)	42 (10.5)	68 (17.0)
Pastor/Clergy	2 (0.5)	3 (0.7)	5 (1.3)
Health worker	2 (0.5)	13 (3.3)	15 (3.8)
Others	5 (1.2)	4 (1.0)	9 (2.4)
Total	200 (50.0)	200 (50.0)	400(100)

Respondents reported that parents 152 (38.0%), teachers 106 (26.5%) and health workers 100 (25.0%) were their top three sources of information on oral health and hygiene measures. This was predominantly reported among those in private school [(parents-77 (19.3%), teachers 61 (15.3%), health workers 48 (12.0%)] than those in the public school [parents 75 (18.7%), teachers 45 (11.2%), health worker 52 (13.0%)].

More than half of the respondents 235 (58.8%) reported to have suffered a dental problem of which toothache 153 (65.1%), tooth removal 47 (20.0%), tooth infection 21(9.0%) and dental caries 14 (5.9%) were frequently mentioned. However, the proportion of dental health problems reported was slightly higher among respondents in public school 118 (50.2%) than those in the private school 117 (49.8%) ($P>0.05$). Knowledge of dental health problems was averagely reported as nearly two-fourth 197 (49.2%) revealed that they have no knowledge of any dental health problem. Only 213 (50.8%) had knowledge of at least one oral health problem. Bad breath (20.5%) and dental cavities 56 (14.0%) were the most frequently known dental health problems. Most respondents 210 (52.5%) knew that eating food with high sugar content causes tooth decay and this was mostly reported by respondents in public school 124 (31.0%) than those in the private school 86 (21.5%). Bacteria were also identified as a cause of tooth decay by 111 (27.7%) respondents. Respondents in private school 65 (16.2%) knew that tooth decay is caused by bacteria than those in the public school 46 (11.5%). About 348 (87.0%) respondents knew that tooth decay can be treated, but this knowledge was mostly reported by respondents in the private school 182 (45.5%) than those in the public school 166 (41.5%). While 123 (35.3%) knew that visiting a dentist/dental clinic 62 (17.8%) and taking medication/drugs 61 (17.5%) could enhance the treatment or management of tooth decay, a larger proportion of the respondents 225 (64.7%) have no knowledge of how tooth decay can be treated. A larger percentage of the respondents 386 (96.5%) also knew that tooth decay can be avoided mainly by avoiding snacks and drinks with high sugar content 172 (44.5%) and by brushing the teeth at least twice a day 144 (37.3%). About 224 (61.0%) respondents identified sweets as the snacks that is harmful to one's oral health followed by sweet drinks 69 (17.2%) and chocolate 45 (11.2%). Others said carrots 9 (2.2%), vegetables 9 (2.2%) and meat &

fish 4 (1.0%) are food harmful to one's oral health. Twenty (5.0%) respondents had no knowledge of food/snacks that is harmful to one's oral health. Most respondents 228 (57.0%) knew that brushing the teeth at least twice a day is the usually frequency for tooth brushing, while 112 (28.0%) reported that the normal frequency for tooth brushing should be more than twice a day. The knowledge of frequency of tooth brushing was slightly higher among respondents in private than in public school ($P < 0.05$).

Table 2: Knowledge of Oral Hygiene Measures among Respondents

VARIABLES	FREQUENCY (PERCENTAGES)		
	Public school (n=200)	Private school (n=200)	Total (n=400)
Source of Information on oral health			
Parents	75 (18.7)	77 (19.3)	152 (38.0)
Teachers	45 (11.2)	61 (15.3)	106 (26.5)
Radio/TV	19 (4.8)	13 (3.2)	32 (8.0)
Friend	6 (1.5)	-	6 (1.5)
Health worker	52 (13.0)	48 (12.0)	100 (25.0)
Church	3 (0.7)	1 (0.3)	4 (1.0)
Total	200 (50.0)	200 (50.0)	400 (100)
Ever had oral health problem before			
Yes	118 (29.5)	117 (29.3)	235 (58.8)
No	82 (20.5)	83 (20.7)	165 (41.2)
Total	200 (50.0)	200 (50.0)	400(100)
Type of oral health problem			
Toothache	75 (31.9)	78 (33.2)	153 (65.1)
Dental caries	14 (5.9)	-	14 (5.9)
Tooth removal	14 (5.9)	33 (14.0)	47 (20.0)
Tooth infection	15 (6.3)	6 (2.5)	21 (9.0)
Total	118 (50.2)	117 (49.8)	235 (100)
Knowledge of dental health problems			
Dental cavities	18 (4.5)	38 (9.5)	56 (14.0)
Gingivitis	9 (2.3)	1 (0.2)	10 (2.5)
Bad breath	31 (7.8)	51 (12.7)	82 (20.5)
Periodontitis	1 (0.2)	-	1 (0.2)
Oral cyst	1 (0.2)	3 (0.8)	4 (1.0)
Dental trauma	15 (3.7)	29 (7.3)	44 (11.0)
Does not know	119 (29.7)	78 (19.5)	197 (49.2)
Others	6 (1.5)	-	6 (1.5)
Total	200 (50.0)	200 (50.0)	400(100)
Causes of tooth decay			
Bacteria	46 (11.5)	65 (16.2)	111 (27.7)
Eating balance diet	15 (3.7)	20 (5.0)	35 (8.7)
Eating food with high sugar content	124 (31.0)	86 (21.5)	210 (52.5)
Does not know	15 (3.7)	29 (7.3)	44 (11.0)
Total	200 (50.0)	200 (50.0)	400(100)

Can tooth decay be treated			
Yes	166 (41.5)	182 (45.5)	348 (87.0)
No	34 (8.5)	18 (4.5)	52 (13.0)
Total	200 (50.0)	200 (50.0)	400(100)
Ways tooth decay can be treated			
Medication/drugs	11 (3.2)	53 (15.2)	61 (17.5)
Visiting a dentist/dental clinic	42 (12.1)	17 (4.8)	62 (17.8)
Does not know	113 (32.5)	112 (32.1)	225 (64.7)
Total	166 (47.7)	182 (52.3)	348(100)
Can tooth decay be avoided			
Yes	198 (49.5)	188 (47.0)	386 (96.5)
No	2 (0.5)	12 (3.0)	14 (3.5)
Total	200 (50.0)	200 (50.0)	400(100)
Ways tooth decay can be avoided			
Brushing the teeth once a day	18 (4.6)	12 (3.1)	30 (7.7)
Avoiding snacks and drinks with high sugar content	98 (25.4)	74 (19.2)	172 (44.5)
Avoid eating too much	8 (2.1)	-	8 (2.1)
Avoid smoking	-	18 (4.6)	18 (4.6)
Brushing the teeth at least twice a day	74 (19.2)	70 (18.1)	144 (37.3)
Does not know	-	14 (3.6)	14 (3.6)
Total	198(51.3)	188 (48.7)	386(100)
Food/snacks that is harmful to one's oral health			
Carrots	9 (2.2)	-	9 (2.2)
Vegetables	9 (2.2)	-	9 (2.2)
Sweets	105 (26.3)	139 (34.7)	244 (61.0)
Sweet drinks	46 (11.5)	23 (5.7)	69 (17.2)
Chocolates	20 (5.0)	25 (6.2)	45 (11.2)
Meat & fish	4 (1.0)	-	4 (1.0)
Does not know	7 (1.7)	13 (3.3)	20 (5.0)
Total	200 (50.0)	200 (50.0)	400(100)
Knowledge of frequency of tooth brushing			
Once a day	22 (5.5)	22 (5.5)	44 (11.0)
Twice a day	109 (27.2)	119 (29.7)	228 (57.0)
More than twice a day	58 (14.5)	54 (13.5)	112 (28.0)
Does not know	11 (2.7)	5 (1.3)	16 (4.0)
Total	200 (50.0)	200 (50.0)	400(100)

Table 4 revealed that virtually all respondents 400 (100%) claimed to have brushed their teeth using commercial tooth brush 393 (98.2%), chewing stick 4 (1.0%), salt 2 (0.5%) and charcoal 1 (0.2%). The usage of commercial tooth brush was evenly distributed among respondents in public school 195 (48.7%) and private school 198 (49.5%). Based on the frequency of tooth brushing, about half of the respondents 200 (50%) reported have been brushing their teeth twice a day which is followed by 185 (46.2%) respondents who reported to have been brushing their teeth just once a day. Only 15 (3.7%) said they brush their teeth more than twice a day. Most respondents in the

private school reported to have been brushing twice a day 125 (31.3%), whereas most respondents in public school said that they brush their teeth just once in a day 120 (30.0%).

About 323 (80.7%) respondents reported that tooth paste was their main additional substance in tooth cleansing. Tooth pick 74 (18.5%) and leaves 3 (0.7%) are other additional substances used by respondents in tooth cleansing. Half of the respondents 200 (50.0%) revealed that they brush their teeth morning and evening each day. Others reported that they brush their teeth only in the morning 161 (40.2%), 12 (3.0%) brushed only in the evening and 27 (6.7%) brush their teeth morning, afternoon and evening. Main reason for tooth cleansing is to keep the teeth strong and healthy 261 (65.2%). Others reasons given for tooth cleansing were to remove remains of food particles 66 (16.5%), prevent dental problem 58 (14.5%) and to prevent yellowish teeth 15 (3.7%). More than half of the respondents 230 (57.3%) reported that tooth brushing is more appropriate before every meal, whereas 142 (35.5%) respondents said tooth brushing is more appropriate after every meal. About 28 (7.0%) have no knowledge of the appropriate time for tooth brushing. Two-third majority 300 (75%) reported that they haven't visited a dentist/dental clinic before; most of which are from the public school 156 (39.0%) as compared to those in the private school 144 (36.0%). Only 100 (25.0%) respondents reported to have visited a dental clinic mainly for the purpose of dental examination and checkup 67(67.0%), tooth extraction 18 (18.0%), toothache 8 (8.0%) and tooth cleansing 7 (7.0%). About 202 (50.5%) respondents said they have never attended a health education programme on oral health and hygiene. Respondents in public school 128 (32.0%) were more in this regards than those in the private school 74 (18.5%). Out of the 198 (47.5%) who claimed to have attended a health education programme on oral health, 187 (94.4%) said they attended the programme in school while 7 (3.5%) and 4 (2.0%) said they attended theirs in the church and seminar/workshop respectively. The proportion of respondents exposed to education on oral health were reported higher among those in private school 126 (63.6%) than those in public school 72 (36.4%) ($P < 0.05$).

Table 4: Oral hygiene practices among School Adolescent

VARIABLES	FREQUENCY (PERCENTAGE)		
	Public school (n=200)	Private school (n=200)	Total
Type of school management			
Ever brushed your teeth before			
Yes	200 (50.0)	200 (50.0)	400 (100)
No	-	-	-
Total	200 (50.0)	200 (50.0)	400(100)
Tool used for tooth brushing			
Chewing stick	3 (0.7)	1 (0.3)	4 (1.0)
Commercial tooth brush	195 (48.7)	198 (49.5)	393 (98.2)
Salt	2 (0.5)	-	2 (0.5)
Charcoal	-	1 (0.2)	1 (0.2)
Total	200 (50.0)	200 (50.0)	400(100)
Frequency of tooth brushing			
Once a day	120 (30.0)	65 (16.2)	185 (46.2)
Twice a day	75 (18.7)	125 (31.3)	200 (50.0)
More than twice a day	5 (1.2)	10 (2.5)	15 (3.7)
Total	200 (50.0)	200 (50.0)	400(100)

Additional substances used in tooth cleansing			
Tooth pick	28 (7.0)	46 (11.5)	74 (18.5)
Tooth paste	170 (42.5)	153 (38.2)	323 (80.7)
Leaves	2 (0.5)	1 (0.2)	3 (0.7)
Total	200 (50.0)	200 (50.0)	400(100)
Period of the day in tooth brushing			
Only in the morning	96 (24.0)	65 (16.2)	161 (40.2)
Only in the evening	11 (2.7)	1 (0.3)	12 (3.0)
Morning, afternoon and evening	18 (4.5)	9 (2.2)	27 (6.7)
Morning and evening	75 (18.8)	125 (31.2)	200 (50.0)
Total	200 (50.0)	200 (50.0)	400(100)
Reasons for tooth cleansing			
To Keep the teeth clean & healthy	126 (31.5)	135 (33.7)	261 (65.2)
To remove remains of food particles	34 (8.5)	32 (8.0)	66 (16.5)
To prevent dental problem	29 (7.2)	29 (7.2)	58 (14.5)
To prevent yellowish teeth	11 (2.7)	4 (1.0)	15 (3.7)
Total	200 (50.0)	200 (50.0)	400(100)
When is more appropriate for tooth brushing			
Before every meal	105 (26.2)	125 (31.2)	230 (57.5)
After every meal	72 (18.0)	70 (17.5)	142 (35.5)
Does not know	23 (5.7)	5 (1.2)	28 (7.0)
Total	200 (50.0)	200 (50.0)	400(100)

Ever visited a dental clinic			
Yes	44 (11.0)	56 (14.0)	100 (25.0)
No	156 (39.0)	144 (36.0)	300 (75.0)
Total	200 (50.0)	200 (50.0)	400(100)
Purpose of visit to a dental clinic			
Dental examination/check up	31 (31.0)	36 (36.0)	67 (67.0)
Tooth extraction	9 (9.0)	9 (9.0)	18 (18.0)
Toothache	-	8 (8.0)	8 (8.0)
Tooth cleansing	4 (4.0)	3 (3.0)	7 (7.0)
Total	44 (44.0)	56 (56.0)	100 (100)
Ever attended a health education programme on oral health			
Yes	72 (18.0)	126 (31.5)	198 (49.5)
No	128 (32.0)	74 (18.5)	202 (50.5)
Total	200 (50.0)	200 (50.0)	400(100)
Place of attending oral health education programme			
Church	4 (2.0)	3 (1.5)	7 (3.5)
School	68 (34.3)	119 (60.1)	187 (94.4)
Seminar/workshop	-	4 (2.0)	4(2.0)
Total	72 (36.4)	126 (63.6)	198 (100)

Based on available data, oral hygiene status of respondents were graded as follows; Excellent 33 (8.2%), Good 77 (19.2%), fair 136 (34.0%) and poor 154 (38.5%). Poor oral hygiene

status was reported slightly higher among respondents in public school 78 (19.5%) than those in the private school 76 (19.0). Respondents in the private school 22 (5.5%) were graded higher in effective and excellent oral hygiene status than those in the public school 11 (2.7%) (Table 5).

Table 5: Assessment of oral Hygiene Status among Respondents

ASSESSMENT SCORES	FREQUENCY (PERCENTAGES)		
	Public school (n=200)	Private school (n=200)	Total (n=400)
Excellent	11 (2.7)	22 (5.5)	33 (8.2)
Good	37 (9.2)	40(10.0)	77 (19.2)
Fair	60 (15.0)	76 (19.0)	136 (34.0)
Poor	78 (19.5)	76 (19.0)	154 (38.5)
Total	200 (50.0)	200 (50.0)	400(100)

4. DISCUSSION

Poor oral health is a widespread global problem and an aspect that is rarely prioritized by governments. In this study, age ($P<0.05$), gender ($P<0.05$) and parents' socio-economic status ($P<0.05$) were found to be significantly associated with oral hygiene practices among adolescents in both the public and private school. Knowledge of basic oral hygiene measure among respondents was fairly good. This finding is comparable to a study carried out in rural and urban Morogoro, Tanzania where respondents exhibited full knowledge of the basic oral hygiene measures among secondary school teenagers. (Masanja & Mumghamba, 2004). The knowledge level of basic oral hygiene was fairly distributed in both schools ($P<0.05$).

Most respondents reported that their parents (38.0%) and teachers (26.5%) were their top two sources of information on oral health. This is true because adolescent spend approximately 7-8 hours in school with their teachers and spend the remaining 16 hours at home with their parents. Correct and factual information can easily be gotten form either their parents when they are at home and teachers when they are in school. This report is consistent with that of Mafuvadze *et al* (2013). The self report prevalence of oral health problem was reported by 58.8% which is slightly higher among adolescent in public school (29.5%) than those in the private school (29.3%). Though the difference is not statistically significant ($P>0.05$). Self report toothache is largely reported by 65.1% respondents as the dental health problem suffered. About 5.9% reported to have suffered from dental caries, while 20.0% and 9.0% reported tooth removal and tooth infection respectively. Several studies in Nigeria have shown that dental health problem is an increasing issue among school children and adolescent. Olaitan (2005) reported a high prevalence of dental caries of 62.1%. High dental health problems may be attributed to poor knowledge and practices of oral hygiene. Knowledge of some dental health problems was poorly reported in this study as a larger proportion of the respondents 49.2% have no knowledge of any dental health problem common among adolescents. The difference in knowledge of dental health problems among respondents in both the public and private schools were statistically significant ($P<0.05$). Most respondents (52.2%) knew that eating food/snacks with high sugar content causes tooth decay, whereas only 27.7% knew that bacteria were the main cause of tooth decay. However, 11.0% had no knowledge of what causes tooth decay. It can hypothesize that respondents of younger ages were less likely to be knowledgeable of the causes of tooth decay than their counterparts. Hence, dental health education should be intensified in schools to adequately equip school children and adolescents of younger ages in lower classes with relevant and correct information on oral/dental health. A substantial

proportion (87.0%) knew that tooth decay can be treated but 64.7% lack knowledge of how it can be treated. Most respondents were also knowledgeable of how tooth decay can be prevented where prevention of food/snack that is harmful to one's oral health and brushing the teeth at least twice a day were predominantly reported in this study. This high knowledge may be attributed to their personal experience, advice from dentist and information gotten from their parents at home and teachers in school. Nevertheless, a knowledge gap was found among school adolescent who knew less about causes, treatment of tooth decay and some dental health problems common among adolescent. Dental health education is highly recommended schools to make up for the knowledge gap.

Generally, most respondents had a fairly positive attitude towards oral hygiene. However, the positivity was shown among respondents in public school than those in private school ($P < 0.05$). About 35.7% supported that cigarette smoking is the cause of oral cancer. This opinion was high supported by adolescent in public (24.7%) than private (11.0%) school. Male respondents were far more supportive than female respondents. It is possible that personal experience and information on consequences of cigarette smoking provided a baseline for this supportive opinion. Most scientific studies have shown that males engage most in cigarette smoking than females. This finding corroborates a study carried out in Tanga, Tanzania where a larger proportion of secondary school students had high knowledge that cigarette smoking is a cause of oral cancer (Carneiro *et al.*, 2011). Most respondents (50%) also affirmed that food with low sugar content are beneficial to one's oral health and about 60.2% stated that brushing the teeth at least twice a day is necessary to maintain a good oral hygiene.

About one third (38.5%) had poor oral hygiene status. Other studies in Nigeria have also reported poor oral hygiene status (Azodo *et al.*, 2013). This may be explained by the low frequency in tooth brushing, low utilization of dental health services and lack of accessibility to oral health information among school adolescents. Poor oral health status was reported more among respondents in public school than those in private school ($P > 0.05$). Commercial tooth brush and tooth paste were the most frequently used tools for tooth brushing. Commercial tooth brush and tooth paste in recent times have been widely advertised, made available, accessible and affordable to all Nigerians even to remote communities. This explains the optimal level of commercial tooth brush usage and low utilization of traditional tooth brush e.g chewing stick. Half of the respondents (50%) reported an acceptable frequency of brushing their teeth twice a day and half of them (50%) said they brush their teeth mostly in the morning and evening. Reasons for tooth cleansing were majorly to keep the teeth clean and healthy (65.2%). Other reasons given by respondents were; to remove remains of food particles (16.5%), prevent dental problem (14.5%) and prevent yellowish teeth (3.7%). Most respondents 57.5% felt tooth brushing should be done before every meal, whereas 35.5% felt tooth brushing should be after every meal. This result shows that most respondents lack knowledge of the right and appropriate time for tooth brushing. This probably may have contributed to their poor oral hygiene status. Two third of the respondents reported that they have never visited a dental clinic while only one-fourth (25.0%) said they have visited a dental clinic of least once in a year. Out of the 100 who claimed to have visited the dental clinic, 67 revealed that they visited the clinic for dental examination and checkup while others said tooth extraction (18.0%), toothache (8.0%) and tooth cleansing (7.0%) were reason given for their visit to a dental clinic. Poor utilization of dental health services may be attributed to low socio-economic status of their parents or guardian, lack of knowledge of an appropriate dental health clinic and poor accessibility to dental health services. The government should ensure that dental health services are made available and accessible to Nigerian school children and adolescent in their various school clinics. This will enhance regular usage of dental health services and consequentially reduce the

prevalence of dental caries among school adolescent. Utilization of dental health services was reported more among respondents in the private school (14.0%) than those in the public school (11.0%) but the difference is not statistically significant ($P>0.05$). Almost half of the respondents (49.5%) reported to have attended a health education programme on oral health mostly in school (94.4%). Respondents in private school (31.5%) had access to routine oral health education than those in the public school (18.0%) and the differences is statistically significant ($P<0.05$).

5. CONCLUSION

Oral health is an integral part of general health. This study reported that oral hygiene practices among school adolescents were sub-optimal especially among those in the public school. Government should be proactive in ensuring prompt availability and accessibility of oral health services in schools. The school curriculum on health education should incorporate oral hygiene to increase awareness among school adolescents. Regular symposiums and workshops on oral hygiene should be organized for the general public where parents and teachers will be provided with recent updates since the serve as information providers for their wards at home and in school.

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