



RESEARCH ARTICLE

THE RELATIONSHIP BETWEEN THE ORAL HYGIENE PRACTICES AND THE ORAL HYGIENE STATUS OF STUDENTS OF THE BAYELSA STATE COLLEGE OF HEALTH TECHNOLOGY, OTUOGIDI, OGBIA – TOWN

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ABSTRACT

Background: This research was aimed at determining the relationship between the oral hygiene practices and the oral hygiene status of students of the Bayelsa State College of Health Technology, Otuogidi, Ogbia – Town.

Method: A cross-sectional survey was carried out among students of the Bayelsa State College of Health Technology. Data were collected through oral examination and closed-ended questionnaires assessing the oral hygiene practices of students.

Results: Students presented mostly with a fair oral hygiene status, with mean Oral Hygiene Status (OHIs) of 1.98+1.20 S.D. Female students have better oral hygiene status than their male counterparts and toothbrush and toothpaste were the most commonly used oral hygiene aids. Regarding the frequency of brushing per day, 199 subjects (63.00%) clean their teeth twice or more than twice daily. Routine visits to the dental clinic was however treated lightly as only 27 subjects (8.4%) visited the dental clinic at least once a year, 47 (14.9%) only visited when they had a dental problem and 240 subjects (76.0%) had never visited the dental clinic. Our study ultimately revealed that oral hygiene status is dependent on the number of times the mouth is cleaned daily as well as the time of the day when the mouth is cleaned.

Conclusion: The oral hygiene status of the students of the Bayelsa State College of Health Technology is fair and is dependent on their oral hygiene practices. It was however recommended that oral health education and awareness be improved not just among these students but to all Nigerians and the world at large.

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INTRODUCTION

“Health, a multi-factorial entity indeed has multiple dimensions to it as it can be influenced by a number of factors including lifestyle, genetics, the environment amongst others”. When talking about general health, oral health is indeed an inseparable factor. This thus makes it very necessary for the advocacy of oral health in all ramifications which ultimately results in the preservation of the highest levels of self esteem in an individual and those positive impacts on the social, physical and psychological wellbeing on such a person. (Olusile, 2010; Sofola, 2010; Chachra et al, 2011; Azodo and Amenaghawon, 2013; Ojahanon, Akionbare and Umoh, 2013; Saimadhavi et al, 2013). “Generally, oral health in Africa has been characterized by an inadequacy of oral health care personnel

when matched with population needs, low priority given to oral health as well as poor working conditions for the oral health personnel”. (Danfillo, 2009). In Nigeria and in certain parts of the world, there seems to be an apparent manifestation of uncoordinated efforts in ensuring the prevention of oral diseases as well as major constraints that further makes accessibility to dental health care difficult especially within the rural areas. This in itself requires an innovative drive to phase out limited dental care, insufficiency of dental staff as well as dental illiteracy from our health care system with investment in health and health promotion in order to effectively see to it that the dental health of our populace is adequately ensured, thus preventing the occurrence of various oral diseases amongst which ranks dental caries and periodontal diseases. (Shah, 2001; Akpata, 2004; Taiwo et al, 2004; Taiwo and Omokhodoin, 2006; Cypriano et al, 2008; Sofola, 2010). Truly, as part of innovation, the populace including the dentist and the general population must also show a changed attitude towards oral health, as they play a pertinent role in the determination of

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good dental health. The dentist should be able to provide pertinent information through dental health education programmes where preventive dental modalities are emphasized (Tinanoff & Palmer, 2000; Shirazi *et al.*, 2013). That notwithstanding, the populace needs to show more interest in their dental health as it has been reported that there seems to abound a low level of practice of effective oral hygiene methods, inadequate knowledge about dental health as well as not routinely visiting the dental clinic for routine dental check-ups, thus fostering the prevalence of a poor oral hygiene status (Lorna *et al.*, 2011; Chandra Shekar *et al.*, 2011; Ojahanon, Akionbare and Umoh, 2013; Azodo and Amenaghawon, 2013). With little or no research work done to study the relationship between the oral hygiene practices and the oral hygiene status of students of the Bayelsa State College of Health Technology, Otuogidi, Ogbia – Town, as well as the prevailing presence of poor oral hygiene status as a result of poor hygiene practices among these students, it has become necessary to determine the oral hygiene status and practices of the students of the Bayelsa State College of Health Technology and to determine the relationship between both. This study is one of significance as it would provide information on the oral hygiene status and oral hygiene practices as well as further reveal the need for improved level of oral hygiene awareness among students of the Bayelsa State College of Health Technology, Otuogidi-Ogbia town and indeed to the general public at large.

METHODS

We employed a cross-sectional study design in determining the relationship between the oral hygiene practices and the oral hygiene status of students of the Bayelsa State College of Health Technology, Otuogidi, Ogbia – Town. Permission to carry out this research work was gotten from the management of the College through the research and manpower unit of the College and the decision to be involved in this study was completely voluntary. Closed-ended questionnaires assessing oral hygiene practices were then distributed to 316 students who were selected by a stratified random sampling method after the total number of students in the College was gotten from the Registry department. Oral examination of the students to assess their oral hygiene status was also performed by qualified dental health professionals and the simplified oral hygiene index was used to determine the oral hygiene status of the students. (Greene & Vermillion, 1964). Data gotten from the respondents/subjects was analyzed using the Statistical Package for Social Sciences (SPSS) version 20.

RESULTS

A total of 316 respondents were used in this study comprising n=124 (39.3%) males and n=192 (60.7%) female respondents. The modal age range was 20 – 25 years of age; n=185 (58.5%), most of the students were single; n=293 (92.7%) and majority of the respondents are of the Ijaw-speaking tribe of Nigeria; n=233 (73.7%). These are shown in table 1 below.

Oral Hygiene Status of the Students

Using the Simplified Oral Hygiene Index, a mean OHI_S score of 1.98±1.20 S.D. was gotten. Altogether 122 (38.6%) students

presented with good oral hygiene [male: 40 (12.7%), female: 82 (25.9%)]; 139 (44.0%) students presented with fair oral hygiene [male: 55 (17.4%), female: 84 (26.6%)]; and 55 (17.4%) students presented with poor oral hygiene [male: 29 (9.2%), female: 26 (8.2%)]. The female students were also found to have a better oral hygiene status than their male counterparts. These are presented in table 2.

Table 1. Demographic Data of Respondents

| Parameter | Frequency | Percentage (%) |
|----------------------|-----------|----------------|
| 1. Gender: | | |
| • Male | 124 | 39.3 |
| • Female | 192 | 60.7 |
| 2. Age: | | |
| • 15 – 19 years | 67 | 21.2 |
| • 20 – 25 years | 185 | 58.5 |
| • 26 years and above | 64 | 20.3 |
| 3. Marital status: | | |
| • Married | 23 | 7.3 |
| • Single | 293 | 92.7 |
| • Divorced | – | – |
| • Widow/widower | – | – |
| 4. Ethnic group: | | |
| • Ijaw | 233 | 73.7 |
| • Igbo | 17 | 5.4 |
| • Yoruba | – | – |
| • Hausa | – | – |
| • Others | 66 | 20.9 |

N= 316; MODAL AGE GROUP: 20 – 25 YEARS

Table 2. Oral Hygiene Status (Using the Simplified Oral Hygiene Index) of the Students of the Bayelsa State College of Health Technology

| Oral hygiene status | 0 – 1.2 (Good) | 1.3 – 3.1 (Fair) | > 3.1 (Poor) |
|---------------------|----------------|------------------|--------------|
| Male | 40 (12.7%) | 55 (17.4%) | 29 (9.2%) |
| Female | 82 (25.9%) | 84 (26.6%) | 26 (8.2%) |
| Total | 122 (38.6%) | 139 (44.0%) | 55 (17.4%) |

FEMALE STUDENTS OF THE BAYELSA STATE COLLEGE OF HEALTH TECHNOLOGY HAVE A BETTER ORAL HYGIENE STATUS THAN THEIR MALE COUNTERPARTS (*p*-value: <0.0001)

Oral Hygiene Practices of the Students

Considering the oral hygiene practices of the students involved in this study, all the students clean their mouths using toothbrush and toothpaste; majority of the students clean their mouths twice daily n=194 (61.4%). A good number of the students clean their mouths only in the morning before eating 131 (41.4%), although certain others also clean their mouths last thing at night even after doing so in the morning before eating 107 (33.9%). 240 (76.0%) of the students in this study have never visited the dental clinic for routine check-up. This is presented in table 3.

Relationship between number of times mouth is cleaned daily and the oral hygiene status of the students

When tested using the chi-square test, it was found in this study that the oral hygiene status of the students of the Bayelsa State College of Health Technology was dependent on the number of times they clean their mouths daily (*p*-value<0.0001). Indeed it was shown that brushing twice daily resulted in better oral hygiene than if it only done once daily. This is shown in table 4.

Table 3. Oral hygiene practices of the students of bayelsa state college of health technology

| Oral Hygiene Practices | Frequency | Percentage (%) |
|--|-----------|----------------|
| 1.Type of oral hygiene practice used: | | |
| •Use of toothbrush and toothpaste | 316 | 100 |
| 2.Number of times mouth is cleaned daily: | | |
| •None | 114 | 36.1 |
| •Once | 194 | 61.4 |
| •Twice | 5 | 1.6 |
| •> twice | | |
| 3.Time of the day when mouth is cleaned: | | |
| •In the morning before eating only. | 131 | 41.4 |
| •In the morning after eating only. | 26 | 8.2 |
| •In the morning before eating and last thing at night. | 107 | 33.9 |
| •In the morning after eating and last thing at night. | 52 | 16.5 |
| 4.Number of times dental clinic is visited for routine check-up: | | |
| •Only when there is a problem | 47 | 14.9 |
| •Once yearly | 10 | 3.1 |
| •Twice yearly | 14 | 4.4 |
| •Thrice yearly | 1 | 0.3 |
| •> thrice yearly | 2 | 0.6 |
| •Never visited | 240 | 76.0 |

Table 4. Relationship between number of times mouth is cleaned daily and the oral hygiene status of the Bayelsa State College of Health Technology

| Oral hygiene status | None | Once | Twice | > Twice |
|---------------------|----------|------------|------------|----------|
| 0 – 1.2 (Good) | 1 (0.3%) | 30 (9.5%) | 75 (23.7%) | 1 (0.3%) |
| 1.3 – 3.1 (Fair) | 2 (0.6%) | 64 (20.3%) | 83 (26.3) | 4 (1.3%) |
| > 3.1 (Poor) | 0 (0.0%) | 20 (6.3%) | 36 (11.4%) | 0 (0.0%) |

THE ORAL HYGIENE STATUS OF THE STUDENTS OF THE BAYELSA STATE COLLEGE OF HEALTH TECHNOLOGY IS DEPENDENT ON THE NUMBER OF TIMES THEY CLEAN THEIR MOUTHS DAILY (p-value<0.0001)

Relationship between times of day mouth is cleaned and the oral hygiene status of the students

This study also revealed that the oral hygiene status of the students of the Bayelsa State College of Health Technology is dependent on the time of the day when they clean their mouths (p-value<0.0001). This is shown in table 5.

Table 5. Relationship between time of the day when the mouth is cleaned and the oral hygiene status of the student of the Bayelsa State College of Health Technology

| ORAL HYGIENE STATUS | MORNING BEFORE EATING ONLY | MORNING AFTER EATING ONLY | MORNING BEFORE EATING AND LAST THING AT NIGHT | MORNING AFTER EATING AND LAST THING AT NIGHT |
|---------------------|----------------------------|---------------------------|---|--|
| 0 – 1.2 (GOOD) | 38 (12.0%) | 5 (1.6%) | 38 (12.0%) | 24 (7.6%) |
| 1.3 – 3.1 (FAIR) | 69 (21.8%) | 15 (4.7%) | 53 (16.8%) | 16 (5.1%) |
| >3.1 (POOR) | 24 (7.6%) | 6 (1.9%) | 16 (5.1%) | 12 (3.8%) |

THE ORAL HYGIENE STATUS OF THE STUDENTS OF THE BAYELSA STATE COLLEGE OF HEALTH TECHNOLOGY IS DEPENDENT ON THE TIME OF THE DAY WHEN THEY CLEAN THEIR MOUTHS (p-value<0.0001)

DISCUSSION

Oral health indeed is a very important aspect of the general health and life of an individual and when treated lightly could lead to adverse effects on the entirety of an individual's life which may include disease occurrence amongst others. It is thus a matter that needs to be taken with all seriousness. However, the achievement of oral health is hindered by certain factors including: inadequate dental personnel workforce, high cost of dental treatments, phobia for the dentist and the dental clinic, wrong oral health beliefs, wrong oral health practices and poor knowledge about dental health. (Sofola, 2010; Chachra *et al*, 2011; Azodo and Amenaghawon, 2013; Ojahanon, Akionbare and Umoh, 2013). The mean oral hygiene score of the students of the Bayelsa State College of Health Technology was fair: 1.98+1.20 S.D. with majority 139 (44.0%) of the students presenting with a fair oral hygiene status i.e. an oral hygiene status between 1.3 – 3.1 using the Simplified Oral Hygiene Index. That notwithstanding, 122 (38.6%) students presented with good oral hygiene and 55 (17.4%) students presented with poor oral hygiene. This result corroborates the study by Mustahsen *et al*, in 2008 amongst other previous studies which all reported that majority of the population in their studies had a fair OHI-S score. (Punitha and Sivaprakasam, 2011; Simons *et al*, 2001; Ojahanon, Akionbare and Umoh, 2013). However, it has been reported that children with hearing impairments also presented with poor oral hygiene. (Kumar *et al*, 2008).

These results indeed show the need for improved oral hygiene awareness and oral health education in the world at large. (Cheah *et al*, 2010; Sofola, 2010; Chachra *et al*, 2011; Panchbhai, 2012). The female students in this study were also found to have a better oral hygiene status than their male counterparts. This agrees with other findings of studies done in the past and can be attributed to the notion that although girls consumed more sweets, snacks and soft drinks than boys, their frequency of brushing and time spent to brush was more than that of the boys. (Cheah *et al*, 2010; Ojahanon, Akionbare and Umoh, 2013). Our study also revealed that the use of toothbrush and toothpaste were the most commonly used oral hygiene aids which is also a similar account recorded in previous studies. (Almas *et al*, 2003; Idiakhwa & Sote, 2005; Al-Kheraif and Al-Bejadi, 2008; Cheah *et al*, 2010; Kaira *et al*, 2012; Azodo and Amenaghawon, 2013). This was however not the case with a study in which only 25% of the population used toothbrush and toothpaste as oral hygiene aids. (Baral *et al*, 2009) as well as another study among institutionalized individuals in which only about half used a toothbrush. (Gaiao *et al*, 2009). These all may indeed boil down to the poor knowledge about oral health and oral hygiene practices which may be prevalent in these areas.

Regarding the frequency of brushing per day, 199 subjects (63.00%) clean their teeth twice or more than twice daily. This finding corroborates previous studies in which majority of subjects cleaned their teeth twice in a day. (Cheah *et al*, 2010; Chandra Shekar *et al*, 2011; Kaira *et al*, 2012). This however, is not supported by previous findings in which only 24.5% of the students involved brushed their teeth twice or more per day, (Amin and Al-Abad, 2008). and another study in which

majority practiced once-daily tooth cleaning. (Baral *et al*, 2009; Punitha and Sivaprakasam, 2011; Azodo and Amenaghawon, 2013). In this study, routine visits to the dental clinic was however found to be treated lightly as only 27 subjects (8.4%) visited the dental clinic at least once a year. 47 (14.9%) only visited when they had a dental problem and 240 subjects (76.0%) had never visited the dental clinic. This is corroborated by previous findings in which majority of the participants had never visited the dentist. (Sofola, 2010; Chandra Shekar *et al*, 2011; Azodo and Amenaghawon, 2013).

It is worthy of note to say that this bleak attitude towards routine dental visits and in general dental health may be fostered by false notions about the dental clinic being an abode where teeth are removed, no matter the condition of the teeth as well as past painful dental experiences. Others, just never really bothered about their oral health and a handful more of such cases of non-chalant may just have been as a result of a low dentist-population ratio in parts of the world. (Sofola, 2010; Chachra *et al*, 2011; Panchbhai, 2012; Bhardwaj, 2012). Interestingly, in another study, only 1.8% had never visited the dentist and 48.6% routinely visited the dentist once or twice a year. This was also the case in another study in which 4.3% had never visited the dentist and 43.7% usually visited the dentist. This goes to show their increased level of awareness about the dentist and their oral health than what was obtainable among our population of study. (Kaira *et al*, 2012; Cheah *et al*, 2010). Our study ultimately revealed that oral hygiene status is dependent on the number of times the mouth is cleaned daily as well as the time of the day when the mouth is cleaned. This finding is very crucial, as it buttresses statements earlier made that for improved oral hygiene to be achieved, the oral hygiene practices must be essentially considered and stepped up. (Sofola, 2010; Chachra *et al*, 2011; Chandra Shekar *et al*, 2011; Punitha and Sivaprakasam, 2011)

Conclusion and Recommendations

Conclusively, the oral hygiene status of the students of the Bayelsa State College of Health Technology is fair with a vast majority of the students possessing good oral hygiene practices but with a rather non-chalant attitude towards visiting the dental clinic for routine dental check-up. The oral hygiene status of the students was however found to be dependent on their oral hygiene practices. We therefore recommend that more emphasis be laid on the awareness and knowledge of oral health care as well as oral hygiene practices through programmes and seminars to educate students not just in the study area but in all parts of Nigeria and the world at large.

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