

Evaluation of Dental Hygiene Practices Among Public Secondary School Students in Awka Education Zone: Focus on Brushing and Flossing Habits

Nwankwo Nonyelum Stella¹

¹Department of Human Kinetics and Health Education, Nwafor Orizu College of Education, Nsugbe Anambra State, Nigeria

E-mail: nwankwostella100@gmail.com

ABSTRACT

This study was designed to analyzed the dental hygiene practices among public secondary school students in awka education zone of Anambra state. Four research questions were formulated to guide the study. The research design for this study is a descriptive survey. The Population of this study is made up of sixty-four (64) public secondary schools in Awka Education zone of Anambra state. The sample size is 1000 students. Instrument used for the study was a self-structured questionnaire. The instrument was validated by three experts, two in measurement and evaluation from Educational Psychology, Nwafor Orizu College of Education Nsugbe and one from Health education department. The scores of data collected were correlated using Pearson Product Moment Correlation, and it gave rise to 0.75. In analyzing the data, the researcher used weighted mean score and standard deviation in answering the research question. The study's findings highlighted positive attitudes toward dental hygiene practices among public secondary school students. Regular brushing twice daily was seen as essential for preventing cavities, promoting fresh breath, and maintaining overall oral health. Brushing at night was particularly valued for its role in protecting enamel by removing bacteria. Students also acknowledged the benefits of flossing, noting its effectiveness in clearing debris, reducing the risk of gum disease, and alleviating toothache. However, awareness about flossing was less widespread, indicating an area where knowledge and frequency could be enhanced to further improve dental hygiene practices among students. Recommendations were made that implement awareness campaigns within schools to educate students, teachers, and parents on the importance of maintaining good oral hygiene practices. These campaigns can include workshops, seminars, and distribution of informative materials. Educational implications, conclusion and suggestions for further study were also revealed.

Keyword: Dental Hygiene; Secondary School; Brushing; Flossing Habits

Corresponding Author:

Nwankwo Nonyelum Stella,
Nwafor Orizu College of Education, Nsugbe Anambra State
No. 1 college road, Abata, Nsugbe 432108, Anambra, Nigeria
Email: nwankwostella100@gmail.com



1. INTRODUCTION

The foundations of lifelong responsibility for the maintenance of dental hygiene are laid down in childhood, which is important for a healthy livelihood, for a healthy adulthood and for the development of positive values about health and the use of health services (Ortese, 2018). Dental hygiene is the practice of keeping one's mouth clean and free of disease and other problems by regular brushing of the teeth and cleaning between the teeth. It is important that dental hygiene be carried out on a regular basis to enable prevention of dental disease and mouth odour. The mouth is a vital organ of the body which is used for the ingestion of food, mastication, swallowing, speech and pronouncement of words. It also maintains the facial profile and provides protection for the alimentary canal. Oral health is a state of being free from chronic Oro-facial pain conditions, oral and pharyngeal (throat) cancers, oral soft tissue lesions, birth defects such as cleft lip and cleft palate, and scores of other diseases and disorders that affect the oral, dental and Oro-facial complex (Chanthavisouk, Arnett, Seyffer, & Paulson, 2023).

Oral hygiene is essential to our everyday lives because a good oral health enhances an individual's ability to eat properly, smile, sigh, taste, chew, swallow, speak and socialize without disease, discomfort or embarrassments. Hygiene is an old concept related to medicine, as well as to personal and professional care practices related to most aspects of living (Naumov, Varadzhakova & Naydenov, 2021). In medicinal, domestic and everyday life settings, hygiene practices are employed as preventative measures to reduce the incidence and spreading of the diseases. Child does not naturally understand the importance of dental hygiene and how to maintain it. They learn about it from their family and usually need assistance until they get older and are able to do it on their own.

Coleman (2016) noted that oral hygiene is the practice of keeping the mouth clean and disease-free. It involves brushing and flossing the teeth as well as visiting the dentist regularly for dental X-rays, exams and cleanings. Good cleanliness habits start in childhood. Motivational factors behind dental hygiene practices include reduction of personal illness, healing from personal illness, optimal health and sense of wellbeing, social acceptance and prevention of spread of illness to others. Child who learns what dental hygiene is and how to follow proper hygiene practices will usually carry those habits into their adulthood too. Hygiene education usually starts with the family, and eventually youngsters learn what to do and how to follow cleanliness rules on their own.

Without proper dental hygiene, gingival inflammation may lead to the destruction of the periodontal apparatus and the apical migration of the periodontal attachment, a complication that could result in tooth loss. Good dental health translates to good health overall. Dental problems such as cavities or gum disease can impair the ability to eat and speak properly, cause pain and bad breath (Edman & Wårdh, 2022). And what many students may not realize, is that poor dental health can have a profoundly, negative effect on areas outside of the mouth, including the heart, and chronic inflammation, such as arthritis. Some studies suggest that the bacteria in gum disease can travel to the heart and cause heart disease, clogged arteries (Woolley, Gibbons, Patel & Sacco, 2020). And painful mouth sores, are common in people who have HIV. Practicing good dental hygiene is so important, because it can prevent oral communicable diseases and dental problems. And prevention should be the primary focus.

Poor health among school children is resulted from the lack of awareness of the health benefits of dental hygiene. Dental caries, pulpal and periapical lesions, dental trauma, abnormality of development, and oral habits are most common dental diseases in children that strongly relate to malocclusion most commonly associated with poor dental hygiene. Lack of dental hygiene coupled with poor sanitation favor person-to-person transmission of infection. Infection and malnutrition form a vicious circle and retard children's physical development. Repeated attacks of infections often compound the existing poor oral health of children, compromising children's attendance and performance at school and not uncommonly, can result in death.

The burden of oral health diseases is well recognized. Oral diseases affect a large proportion of the population, men and women, old and young alike. Oral diseases cause pain, discomfort, and negatively affect quality of life. The condition may even be worse in a slum community with poor socio-economic condition and compromised living situation. The origins of many of the illnesses of adulthood also have their roots in the health behaviours of childhood and adolescence.

2. RESEARCH METHOD

This study employs a descriptive survey design, conducted within the Awka Education Zone in Anambra State, Nigeria. Awka Zone, one of six educational zones in the state, oversees both public and mission secondary schools across five local government areas: Awka-North, Awka-South, Anaocha, Dunukofia, and Njikoka. The study's target population comprises all public secondary schools within this zone, totaling 64 schools with an overall student population of 33,424. The researcher used purposive sampling to focus specifically on Senior Secondary 2 (SS2) students in 20 selected schools, with a sample population of 1,063 students. SS2 students were chosen due to their presumed familiarity with the study's questionnaire content. Data collection involved a self-designed questionnaire divided into two sections: demographic data in Section A, and the main research questions in Section B, with responses measured on a four-point Likert scale from "strongly agree" to "strongly disagree."

To ensure validity, the questionnaire was reviewed by a supervisor and two experts in Human Kinetics and Health Education at Nwafor Orizu College of Education, Nsugbe. Reliability was confirmed through a pilot test with 20 SS2 students in Onitsha Zone, yielding a reliability coefficient of 0.75 using Pearson Product Moment Correlation, thus marking the instrument as dependable. Data collection was conducted in person, with questionnaires distributed through school principals and assisted by school

prefects. Of the 1,063 questionnaires administered, 1,000 were successfully retrieved. For analysis, weighted mean scores and standard deviation were calculated, with a decision threshold set at a mean of 2.50. This threshold dictated that responses with a mean of 2.5 or above were accepted, while those below were rejected.

3. RESULTS AND DISCUSSION

Research Question 1: How would regular and effective brushing of teeth at least twice a day be a dental hygienic practice among public secondary school students?

Table 1. Mean rating on regular and effective brushing twice a day as dental hygienic practice among public secondary school students.

| S/N | Items | SA | A | D | SD | Total | Mean | Decision |
|-----|--|-----|-----|-----|------|-------|------|----------|
| 1 | Brushing twice daily with fluoride toothpaste maintains oral hygiene. | 265 | 395 | 225 | 115 | 1000 | 2.81 | Accepted |
| 2 | Brushing in the morning helps to remove bacteria that has built up in your mouth overnight. | 256 | 478 | 135 | 131 | 1000 | 2.85 | Accepted |
| 3 | Brushing the teeth helps to prevent cavities and tooth decays and gum disease. | 372 | 387 | 125 | 1216 | 1000 | 3.02 | Accepted |
| 4 | Brushing of the teeth daily helps to whiten the teeth, brings out fresh breath and brighter smile. | 252 | 248 | 369 | 131 | 1000 | 2.62 | Accepted |
| 5 | Brushing at night before bed helps to remove bacteria and reduces damage of your enamel. | 375 | 263 | 240 | 122 | 1000 | 2.89 | Accepted |

Grand mean. =14.2

Average mean=2.84

Table 1 above revealed the regular and effective brushing of teeth at least two minutes twice daily of public secondary school students. The participants concurred that undergoing regular brushing of the teeth helps to prevent cavities, tooth decays and gum disease (3.02). They also agreed that brushing twice daily with fluoride toothpaste maintains oral hygiene (2.81). Brushing at night before bed helps to remove bacteria and reduce damage of your enamel (2.89). On the whole, items 1, 2, 3, 4 and 5 yielded a mean score of 2.81, 2.86, 3.02, 2.62 and 2.89.

Research Question 2: How would flossing be a dental hygienic practice among public secondary school students?

Table 2. Mean rating on flossing as a dental hygienic practices among public secondary school students

| S/N | Items | SA | A | D | SD | Total | Mean | Decision |
|-----|--|-----|-----|-----|-----|-------|------|----------|
| 6 | Flossing remove debris left behind after brushing of teeth. | 253 | 465 | 140 | 142 | 1000 | 2.83 | Accepted |
| 7. | Regular flossing of teeth helps to prevent sticky films on the teeth which can lead to cavities and gum disease. | 371 | 265 | 240 | 124 | 1000 | 2.88 | Accepted |
| 8 | Flossing of teeth reduces toothache pains. | 263 | 374 | 239 | 124 | 1000 | 2.78 | Accepted |
| 9 | Flossing helps to promote healthy gum and whiten the teeth. | 262 | 352 | 247 | 139 | 1000 | 2.74 | Accepted |
| 10 | Few students floss regularly due to lack of awareness about its importance. | 246 | 298 | 232 | 224 | 1000 | 2.57 | Accepted |

N=1000

Grand mean= 13.8

Average mean= 2.76

The result in table 2 revealed if flossing teeth can be dental hygienic practice among public secondary school students. Regular flossing of teeth help to prevent sticky film on the teeth which can lead to cavities and gum disease (2.88). Regular flossing of teeth reduces toothache pains (2.78). Also, flossing helps to promote healthy gum and whiten the teeth (2.74). In all, items 6, 7, 8, 9, and 10 with mean scores of 2.83, 2.88, 2.78, 2.74 and 2.57.

Discussion of Findings

Research question 1 sought to find out if regular brushing of teeth at least two minutes twice daily a dental hygienic practice among public secondary school students. The study found that maintaining oral hygiene is vital for overall health. Brushing twice daily with fluoride toothpaste is a fundamental practice. This finding aligns with the consensus that preventive measures are pivotal for oral health maintenance in diverse contexts (Afolabi, Durojaiye and Desai, 2021). Many students brush their teeth daily inconsistent techniques and frequency prevail, highlighting the need for educational intervention to improve brushing habits. The result showed that irregular brushing habits among Nigerians have been identified as a significant

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factor in plaque build-up, ultimately contributing to the development of cavities and gum diseases. In a related study, improper toothbrush use, particularly harsh brushing techniques, has been highlighted as a common practice that can harm gums and enamel, underscoring the need for comprehensive oral hygienic education (Onyejaka, Olofinniyi and Fashiku, 2019). Regular distribution of toothbrushes within schools, coupled with education on proper replacement every three months, promoting effective oral hygienic practice (Onyejaka, Arnett, Seyfferand Paulson, 2022)

Research question 2 dealt with flossing as a dental hygienic practice among public secondary school students. In contrast, few students incorporate regular flossing into their routine, often due to a lack of awareness about its importance in preventing dental issues (Nwankwo, Umeru and James 2020). Regular flossing is essential to prevent decays by removing food particles between teeth (Ogunbodede, MCBurnett, Connor and Hynd 2020). The lack of knowledge about gum care contributes to potential gum disease, indicating a gap in oral health education (Oginni, Zappala, Yombi, Taylorand Francis, 2022).

Recommendations

Based on the findings of the study, the following recommendations are made:

- a) Ensure that students have access to essential oral health resources, such as toothbrushes and toothpaste. Additionally, incorporate regular demonstrations on proper toothbrush use and emphasize the importance of replacing toothbrushes every three months.
- b) Foster collaboration between schools and local health authorities to establish a coordinated approach to oral health promotion. This could involve joint initiatives, resource-sharing, and the development of community-wide oral health programs.
- c) Integrate oral health topics into broader health education programs. Emphasize the interconnectedness of oral health with overall well-being, encouraging students to adopt a holistic approach to their health.

4. CONCLUSION

The study on dental hygiene practices among public secondary school students in the Awka Education Zone revealed that while students generally understand the importance of regular brushing and flossing, practical application, particularly with flossing, remains inconsistent. Most students recognize that brushing twice daily contributes to oral health, preventing cavities, and improving freshness and appearance, showing a commendable awareness of effective brushing techniques. However, flossing, though valued for its role in preventing gum disease and debris buildup, lacks regular practice among students, largely due to limited awareness. To foster better dental hygiene, educational programs in schools could emphasize the benefits and techniques of both brushing and flossing, aiming to establish these as daily practices among students.

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