



Research Article

Personal Hygiene Practices Among Secondary School Students in Esan Central Local Government Area, Irrua, Edo State, Nigeria

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Abstract

Hygiene refers to the practices associated with ensuring good health and cleanliness. Personal hygiene therefore may be described as the principle of maintaining cleanliness and grooming of the external body. It is the general looking after oneself and leads to promotion and continuance of health. Components of personal hygiene includes food hygiene, menstrual hygiene, hair care, feet care, hands and skin care, But this study was on the last three components. The study was carried out to determine the standard of personal hygiene among students of secondary schools in Esan Central Local Government Area (L. G. A) in Irrua, Edo State. *Method:* The study was carried out in selected private and public secondary schools in Esan Central L. G. A in 2011. A total of 270 students were sampled using self-administered questionnaires. Data collected was then analyzed using the statistical package for scientific solution (SPSS) version. *Result:* The findings showed good knowledge of personal hygiene source of information being mainly school. Practice of hand washing, oral hygiene was first learned at school which ought to be at home but was found to be inadequate in majority of the respondents. Factors such as health education were found to affect brushing and hand washing positively. *Conclusion:* There is need for continued hygiene education to improve and sustain good hygiene practices among students.

Keywords

Irrua, Hand Washing, Personal Hygiene, Oral Hygiene

1. Introduction

The term “hygiene” is derived from “hygieia”, the Greek goddess of health, cleanliness and sanitation. Hygiene refers to practices associated with ensuring good health and cleanliness. Such practices vary widely and what is considered acceptable in one culture maybe unacceptable in another. the term hygiene appears in phrases such as personal hygiene, dental hy-

giene, domestic hygiene and occupational hygiene, and is frequently used in connection with public health. [1]. The scientific term hygiene refers to maintenance of health and healthy living. It is also a science that deals with promotion of health and it is also known as hygienics.

Personal hygiene therefore maybe described as the principles of maintaining cleanliness and grooming of the external

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body. It is the general looking oneself. Personal hygiene as it implies is personal. Everybody has habits and standards that they have been taught or have learnt from others. It is essentially the promotion and continuance of good health components of personal hygiene include food hygiene, oral hygiene, hair and skin care, hands, nails and feet care and menstrual hygiene. Others are wound care cleaning of personal utensils and preventing infections. Personal utensils are household materials and objects which must not be share between individuals. They include toothbrush, bathing towels, combs, razor, hair and nail clippers, sandals, clothes e.t.c. Sharing of such personal utensils can cause cross infections. Cleaning and washing of such regularly is equally important in preventing self-infection [3]. Washing of hands with soap and water before preparing meals and before eating and proper covering of food materials will go a long way in accomplishing this.

Oral hygiene is an integral part of personal hygiene of a civilized man; its importance is the same in primary, secondary and tertiary prevention of teeth diseases. [2]. Regular brushing of the teeth especially after consumption of sugary substances is necessary to maintain good oral health. Tooth decay, gum disease and halitosis (bad breath) are few of the consequences of poor oral hygiene. Keeping hair clean, shiny and strong means healthy hair that is in good condition. Some hair and scalp conditions such as dandruff and head lice although may not be avoidable in all cases can be minimized as can the risk of developing infections as a consequence of maintaining good hair hygiene. Other condition that may arise from poor health hygiene includes brittle hair, hair loss, greasy hair and tinea capitis. Hair must be regularly with plenty of water and shampoo or cut low.

Hand washing is one of the main important principles in the prevention of infection. In countries where food is prepared and eaten with bare hands, extra attention has to be paid to cleanliness of the hands. Hand hygiene is the primary measure to reduce infections. [3]. Hands should be washed before and after changing of wound coverings and plaster, entering a hospital, attending to food, attending to newborn infants especially at feed times and when changing nappy and umbilical cord care, after visiting toilet, when hands are visibly dirty and after handling animals. Hand can be washed with soap and running water or by using an alcohol-based hand rub (minimum 60%). [6]. An effective hand washing needs nothing more than warm water, soap and clean dry towel. This should be enough to remove household germs and restore the hands back to being clean. Nails are made up of layers of protein called keratin and can be indicative of our general health. The purpose of nails is to protect the ends of our fingers and toes from trauma and to help pick things up. Nail hygiene is essential to prevent the development and spread of infection. The prevalence of intestinal parasitic infection was significantly high among children having dirty untrimmed nails.

They are displayed in public at all times so can be representative of our overall health, wellbeing and personal hygiene methods. Nails must be clean and cut low at all times.

Nails biting are a bad hygiene concept. The feet is a common route of many parasitic and helminthic infections. Proper care of the feet is therefore absolutely necessary in the prevention of these infections especially in the rural and swampy areas. Majority of guinea worm infestations emerges from the lower limbs and the incidence of complications and disability is higher in those with lesions around the ankles and feet. Feet must therefore be kept in airy place to dry sweat. Damp and dirty foot is a breeding place for foot infections like tinea pedis (athletes' feet).

Learning about menstrual hygiene is a vital aspect of health education for adolescent girls. [7]. This is menstruation and menarche is a sensitive topic which no one wants to talk about, not even mothers. Taking care of one's self is very important to avoid infection to vagina and cervix, prevent body odor which could emanate from irregular bathing and changing of sanitary towels and finally makes the girls very comfortable for those days. It is essential to maintain strict hand washing practices before and after changing sanitary towels and finally makes the girls very comfortable for those days. It is essential to maintain strict hand washing practices before and after changing sanitary products. Any bacteria on the hands and fingers prior to fitting a sanitary product can be transferred to the cervical canal and cause infection. Likewise, any bacteria on the fingers following changing of a product can be transferred to other items. The importance of personal hygiene cannot be over emphasized as poor personal hygiene-related diseases are serious public health problem in developing countries. Failure to keep up a standard of hygiene can have many implications. Not only is there an increased risk of getting an infection but has many social and psychosocial effects such as social embarrassment, low self-esteem confidence and may reduce chances of promotion or appointment in some establishments. This study will however be limited to oral hygiene, skin care, hand, nail and feet care, in order to narrow the scope.

2. AIM

To assess the level of personal hygiene practices among students of secondary schools in Esan Central Local Government area of Edo-state in order to contribute to the information already gathered on the subject matter with the view to help in solving the menace and indeed improving their health standard.

3. Literature Review

The word hygiene was derived from the name of an ancient goddess of healthful living called Hygeia. Hygiene in the earliest sense was not connected to cleanliness and personal grooming. Indeed, popular attitudes in Western Europe and US held that frequent bathing was dangerous to health. It upsets the physical system, robbed the body of precious natural oils and lead to debilitating illness.

However, In the 19th century, the repeated onslaught to diseases such as cholera began to alter people's understanding of personal hygiene. Since orthodox medicine seemed powerless in response to these pandemics, a variety of alternative medicine gained popularity. Many of these alternatives emphasized diseases prevention through healthy living which included diet and clothing reform, daily cold-water bathing, exercise regulation of bowel movement and abstinence from coffee, tea, alcohol and sex. [11, 12]. Elaborate codes of hygiene can be found in several hindu texts such as manusmriti and the vishnu, prana, bathing is one of the five Nitya karmas (daily duties) in Hinduism not performing which leads to sin according to some scriptures. [1].

Hygiene is a very important aspect of health. A Lebanese proverb says that hygiene is 2/3rd of health. Another quote on hygiene says; bath twice a day to be really clean, once a day to passably clean and once a week to avoid being a menace. [6]. Maintaining personal hygiene is vital in the development and control of the spread of infection. Common infections that can be developed and spread in the domestic setting includes e.coli, salmonella, fungal infections and every day cough and cold bugs. Food handler's poor personal hygiene is an important contributor to food borne illness outbreaks. It was found that annually from 1993 to 1997, poor personal hygiene of food handlers was a contributing factor from 27% to 38% of food borne illness outbreaks and also that in 89% of outbreaks caused food contaminated by food handlers, pathogens were transferred to by workers' hands. [12].

Oral hygiene is defined as the personal maintenance of cleanliness and hygiene of teeth and oral structures, including prosthetic replacement and orthodontic apparatus by cleaning of teeth, gingival massage through hydrotherapy and also through other procedures as recommended by a doctor or by a hygienist to maintain dental and oral health. [4]. Oral hygiene is a concern of every individual and consists of first of all home care of dentition and of oral cavity. Methods of oral hygiene practiced by the population include toothbrush/paste and chewing stick, Oral hygiene is an integral part of the personal hygiene of a civilized man and its important is the same in primary, secondary, tertiary preventing of teeth diseases of parodontium.[4]. Concern the method of oral hygiene there is a striking shift from the use of chewing stick to the use of tooth brush and paste with advancing age. This trend is completely in keeping with the observations which link the choice and use of toothbrush/paste with increasing self-esteem. The toothbrush/paste shows a slide advantage over chewing stick. [14]. Consequences poor oral hygiene is such that are not easily cured or removed unless the denture (s) is removed.

Dental carries was scored as DMFT (decayed, missing and filled teeth) in accordance with the W. H. O recommendation and related to oral hygiene and various behavioral and social variables such as sex and the use of dental services. Bad breath or halitosis is very common complaint and can affect all people of all ages. [4]. It can be a socially embarrassing disorder

through many sufferers is unaware if it until someone mentions it. Studies have shown that adolescent on the average have good oral hygiene knowledge with fair attitude and practice, Females however have better oral hygiene knowledge than males. [5, 10]. Dental caries and good oral hygiene are found in one study to be related to socio economic status where more caries are found in under privileged children. [4]. This increases the need for proper oral hygiene practice using available materials like chewing sticks among this group of children. [13].

A significant prevalent of periodontal disease has been established in Nigeria by several authors. [5]. This prevalence varies from one region to another, also from different socio-economic and age groups. In this study involving 300 secondary school students aged between 12-18yrs in Enugu, East of Nigeria attempt was made at identifying their periodontal treatment needs with the intention of knowing the measures necessary to ensure a good periodontal health then and in the future. Account is taken of the fact that there are two major methods of oral hygiene practiced by the population - tooth brush and tooth paste, and chewing sticks. More than half of the population 56.3% needed education on oral hygiene measures (maturation). Just one third (31.4%) needed scaling and polishing. Only 2 children out of 330 needed complete treatment. Two third students aged between 12-15yrs and almost ½ of those aged between 16-18yrs needed maturation. 20% of the students aged between 12-13yrs did not have need for any treatment whereas all the students aged between 16-18yrs except 4, needed periodontal treatment. This it was concluded that the need for treatment of periodontal disease increased with age. [14].

Tooth brushing behavior, cognitions and habit strength are very important aspects for good hygiene. Study was done to determine the oral hygiene status of students in selected secondary school in Osogbo. Two private and two public schools were selected for the study through simple random sampling from Osogbo local government area. Self-administered structured questionnaires were used to collect data on age, sex, educational level, knowledge on oral hygiene and oral hygiene habits of the students. Dental examination was carried out using dental probes and mouth mirrors, based on the use of simplified oral hygiene index (OHI-S). A total of 332 secondary school students were examined in the selected schools. Majority of the respondents (86.6%) were in the 0.00-1.00 range of OHI-S connoting good oral hygiene while 1.2% had scores in the 4.01-6.00 range connoting poor oral hygiene. It was concluded that the high level of oral hygiene observed in this study was due probably to the dental education that is usually given to these students by the visiting dental nurses that make regular visits to Boce schools. This needs to be sustained by maintaining the regular dental nurses' visits. [8].

Also in another study, it was found that to optimize health benefits, promotion of hand hygiene should be accompanied by hygiene education and should also involve promotion of other aspects of hygiene. [3]. School children are much more

amenable to behavior change than adults. They are able to learn at an early age, adapt their behavior and therefore lower their risk to diarrheal and other water and sanitation related diseases. The school environment is highly influential on children behavior. Schools should therefore have proper sanitation facilities and education stimulating low risk behavior. [9].

Hand washing/hygiene is one of the most important hygiene principles in the prevention of infection. By employing good hand washing technique, many diseases can be avoided such as food poisoning, wound infection and maintains the general health of hand and nails. Students have shown that the important proper hand washing cannot be over emphasized. [3, 4]. Hand hygiene is a key Component of good hygiene practices in the home and community and can produce significant benefits in terms of reducing mundane of infectors, most particularly gastrointestinal infections but also respiratory tract and skin infections. [3]. Hand hygiene is the primary measure to reduce infections. Though an example action, the lack of compliance among health care providers is problematic throughout the world. [3]. In a study to assess hand hygiene practices in out-patient dermatology clinics in Israel, the figures of 13 dermatologist physicians were sampled for bacterial cultures and their hand hygiene practices were monitored by two observers. In addition, 51 dermatologists attending a professional conference completed a questionnaire on hand hygiene practices. It was found that all the physicians' hands were found to be contaminated. *Staphylococcus aureus* was isolated in 9 cases (69.2%), a methicillin resistant *aureus* in 1(7.7%). Monitoring revealed 555 opportunities for hand washing; the average compliance was 31.4%. In the questionnaire, the main reasons given for poor hand hygiene were excessive work schedule (58%), lack of awareness (35.3%), reaction to disinfectants (17.7%) and lack of readily available facilities (15.7%). [15]. Poor hand hygiene and nail trimming practices are two factors responsible for increased intestinal load in school children. Although data indicating the role of hands and other surfaces in the transmission of *Corynebacterium* have been available for some time, it is only in the last years that there has been only real awareness that hands and surfaces may also be a transmission route for FLU-viruses. Evidence that measures such as hand hygiene can reduce spread of respiratory tract infections comes from the SARS outbreaks in Hong Kong, which coincided with the latter part of influenza season, when it was observed that, as extensive personal and community public health measures took place, influenza case members fell significantly, more so than usual for the time of year. Birth attendant and maternal hand washing with soap and water were associated with significantly lower rates of neonatal mortality.

Also, the beneficial effects of hand hygiene promotion on the risk of cross transmission are also present in schools, day care centers and the community setting. Hand hygiene promotion, improves child health as it reduces upper respiratory tract infection (URTI), diarrhoea and impetigo among children in developing world. [3].

Promoting hand washing with soap is particularly cost effective; the intervention is both very affordable and can generate excellent result-up to a 43% reduction in diarrhoea morbidity and a 48% percent reduction in life-threatening cases diarrhoea. [10]. There are many Conditions that can affect the way in which personal hygiene is maintained. There can be physical, psychological, socio-economic or as a result of a period in hospital. Poor personal hygiene can result in a risk of Infection and illnesses and also cause many social issues to arise as a result of it and appearance. Certain disabilities can prevent the person from maintaining an acceptable level of hygiene that is appropriate for them, If the Disabilities have developed over time, the sufferer may feel a great deal of frustration that their needs are not being met. Post - operative patients may find that their physical abilities are restricted, either temporarily or permanently. Plaster casts, surgical incisions etc can all provide some degree of limitation. Any mental health problem can affect person's ability and motivation for caring for their hygiene needs. Depression, anxiety, schizophrenia and others are all known to have the potential to affect a person's ability to come for oneself. Loss of memory, motivation, social isolation and a lack of self-worth are all contributory factors [10].

A recent health study on impoverished women in the densely populated area of Amman, Zarqa and Irbid revealed infrequent personal hygiene, poor exercise and dietary habits, restlessness and other health compromising behaviors. It placed socio-economic condition as major stress factors affecting popular concepts on health practices among the 267 women sampled. According to the study, 61.8% of the sample complained of financial problems, 49.4% complained of hearing responsibilities assigned to them, and 24.8% said they were tense because their income - providers were unemployed. Other stress factors included many social obligations, lack of adequate living space, serious health problems and continuous marital disagreements, educational problems. The children as well as having a family member with chronic disease or disability. [6]. Unfortunately, even in today's modern society, there are still individuals who find hot water, soap and towels difficult to gain access to this lack of resources can be result in individuals becoming unkempt and socially hygiene are found in one study to be related to socio-economic status where more caries are found in under privileged children, [13]. Poor education and a lack of knowledge are other reasons why people have different ideas on hygiene needs. It is important for young children to understand and be taught how to maintain their own hygiene at as early an age as possible. Health education is an important communication channel, but there are very few local articles found on this subject in rural areas. Sufficient quantity and of water is another factor that impinges on good personal hygiene practices. Efforts to improve water supply often focus on water quality. However, while availability of clean, uncontaminated drinking water is critical in preventing diarrhoeas, dysenteries and typhoid (Feco-oral diseases), increasing water quantity and convenience reduce the

water related disease burden the most.

Most water - related diseases, including skin and eye infection and diarrhoea, is transmitted person- to - person because of a lack of water for personal hygiene. The more water available and the more convenient it is to collect; the more people will use for hand- washing and other hygiene practices. There are many circumstances that affect the ability to maintain hygiene practices. [11]. Observing these factors can provide a very useful resource in helping with these needs and helping people overcome their illnesses.

4. Materials and Methods

This descriptive cross-sectional study is to be carried out in Esan Central Local Government Area (LGA), Edo state, Nigeria between May to September, 2011. The LGA is divided into 12 political wards and has about 55 primary schools, 15 secondary schools, 1 tertiary Institution annex, health centers and hospitals including the Irrua specialist Hospital.

5. Study Population

The study population consists of male and female students of secondary schools in Esan Central LGA from JSS1-3 and SSS1-3. Information obtained from the LGA secretariat reveals 10 public secondary schools with a total of 4000 students and 5 private schools with a total of 750 students. These 15 schools constitute the institutional population of 4750 students.

6. Ethical Conserations

Consent was taken from the office of the supervisor of the education unit of the local government. At each of the selected schools, consent was sought for from the school principal and also from the class teacher of each of the classes to be sampled. The purpose of the research will be explained to the students as best as possible and their consent obtained and also be made to understand that information gotten will be treated with the strictest confidentiality. Consent was e taken from the chairman ethical committee of Irrua specialist teaching hospital.

7. Sample Size Determination

Sample size was determined using a prevalence of 78%. [10].

The sample size was calculated using the formulae. [10].

$$n = z^2 pq / d^2$$

Where;

n=required sample size

p=prevalence (0.78)

and

z=standard normal deviation or z-score (1.96)

$$q = 1 - p \quad (1 - 0.78 = 0.22)$$

$$d = \text{level of accuracy} \quad (0.05)$$

Applying the formula

$$n = (1.96)^2 \times 0.78 \times 0.22 / 0.05^2$$

$$n = n + (1 + n/N)$$

$$n = 0.6592 / 0.0025 = 263.69$$

Also;

$$n = n * (1 + n/N)$$

n = sample size for population less than 10,000

n = sample size

N = study population (4750)

$$n = 263.69 / (1 + 263.69/4750) = 263.69 / 1.055$$

$$n = 250 \text{ students}$$

The sample size was thus rounded up to 270 students because of the risk of possible attrition. It therefore means that out of the total population size of 4750 secondary students, at least 270 students should be included in the study.

8. Sampling Technique

The multistage sampling method was used for the purpose of this study. Out of the 5 private and 10 public schools in the LGA, stratified sampling method was used in which the number of selected schools was according to the population of each of the two groups of schools. The ratio of private to public school was 1: 2 and so two public schools were selected for every one private school that was selected. One-sixth of the total 15 secondary schools in the LGA were used to give sample population of 3 schools using the ratio 1: 2 proportion, 1 private and 2 public schools were chosen for the study. After the number of each of the private and public schools to be sampled had been determined, a simple random sampling (balloting) was used to determine the exact schools to be sampled in each of the two groups of schools. The two groups of schools were arranged in numerical order differently and a number was chosen randomly and thus used as starting point of the 3 schools selected. Since the population has been naturally selected into homogenous groups or stratum based on the current class of study into JSS1-3 and SSS1-3 with each class representing a stratum, a simple random sampling was used to know the class to start with. In each of the class, a simple random sampling which is an equal probability sampling method was used to select 15 students.

9. Method of Collection

Data was collected via the use of a structured and self-administered open and close ended questionnaire from each stratum of the population designed in simple English language. Collection lasted for a school week (Monday-Friday) from the hours of 8.00am to 2.00pm. Distribution of questionnaires was done by the researcher who also supervised the completion and collection of questionnaires. 6 questionnaires were distributed for pre-testing to 6 students randomly selected from

the school to be sampled to check their understanding of the questionnaires. The questions are grouped into 6 sections namely section A will obtain information on Biodata, section B on the knowledge of personal hygiene practice, section C on oral hygiene practices, section D on hands/feet hygiene practices, section E on health education on the practice of personal hygiene while section F interviewed the students on bathing and body care. Data collected will be analyzed using the statistical package for scientific solution (SPSS 16).

10. Results

Table 1. Age and sex distribution of respondents.

Age	Gender		Total
	Male	Female	
9-13	42	74	116
14-18	41	64	105
19-23	20	29	49
Total	100	167	270

The mean age is 14.66 years old. The modal age is 10years

Table 2. Showing class distribution of respondents.

	Frequency	Percent
JSS1	45	16.7
JSS2	45	16.7
JSS3	45	16.7
SS1	45	16.7
SS2	45	16.7
SS3	45	16.7
Total	270	100

Table 3. Showing frequency distribution for gender.

	Frequency	Percent
Female	167	61.9
Male	103	38.1
Total	270	100

Majority of participants were females

Table 4. Showing whether or not the respondents bite their finger nails.

	Frequency	Percent
No	105	38.9
Yes	165	61.1
Total	270	100

Majority of the respondents do bite their finger nails. The lesser percentage that do not bite their finger nails could be as a result of pre-formed habits that are difficult to let go.

Table 5. Showing nail keeping habits among respondents.

	Frequency	Percent
Long	100	37.0
Short	170	63.0
Total	270	100

Table 6. Showing how often the respondents think they should wash their hands.

	Frequency	Percent
Always	183	67.8
Sometimes	87	32.2
Total	270	100

Higher percentage of the respondents thinks they should wash their hands always, all the time and after each activity. The lesser number think they should wash at a fixed number of times per day.

Table 7. Showing handwashing practices among the respondents.

Handwashing practices	Yes (%)	No (%)	Total (%)
After playing in the field	199 (73.7)	71 (26.3)	270 (100)
After using the toilet	225 (83.3)	45 (16.7)	270 (100)
After school	159 (58.9)	111 (41.1)	270 (100)
Before preparing food/drink	202 (74.8)	68 (25.2)	270 (100)
Before eating	228 (84.4)	42 (15.6)	270 (100)

Handwashing practices	Yes (%)	No (%)	Total (%)
After handing feaces/urine	291 (81.1)	51 (18.9)	270 (100)

Greatest number of the respondents washes their hands before eating, closely followed by after using the toilet while the least wash their hands after school.

Table 8. Tooth brushing practice among respondent.

	Frequency	Percent
Anytime	18	6.7
Once daily	169	62.6
Twice daily	72	26.7
Thrice daily	11	4.1
Total	270	100

Highest percentage of respondents brush once daily and the least percentage brush thrice

Table 9. Showing how often the respondents take their bath daily.

Number of bath per day	Frequency	Percent
Once	61	22.6
Twice	179	66.3
Thrice	30	11.1
Total	270	100

Twice daily bathing is the routine for majority of the respondents. Fewer students bath once and twice daily.

Table 10. Showing the influence of health education on personal hygiene.

	Yes (%)	No (%)	Total (%)
Taught physical & health education as a subject	262 (97)	8 (3)	270 (100)
Physical & health education is an important subject	259 (95.9)	11 (4.1)	270 (100)
Physical & health education has influenced their knowledge & practice of	251 (93)	19 (7)	270 (100)

	Yes (%)	No (%)	Total (%)
personal hygiene			

Table 11. Showing respondents idea of personal hygiene.

	Frequency	Percent
Clean look	104	38.5
Disease prevention	96	35.6
Self-respect	50	18.5
No response	13	4.8
Others	7	2.6
Total	270	100

Majority of the respondents' idea of personal hygiene was to have a clean look, followed by those who felt personal hygiene was for disease prevention while others said it makes them more comfortable and prevent body odor.

Table 12. Showing respondents first knowledge of personal hygiene.

	Frequent	Percent
Church	6	2.2
Friends	4	1.5
Home	99	36.7
Media	34	12.6
School	116	42.9
Others	11	4.1
Total	270	100

Majority of respondents had their first knowledge about personal hygiene from school.

11. Conclusion

Practice of personal hygiene by the students whether good or bad are chance occurrences or mere habits formed over time which was not linked to their knowledge of personal hygiene and health education. The teaching and practice of personal hygiene is a duty for everyone at every point in time. We therefore recommend that there is need for continued hygiene education to improve and sustain good hygiene practices among secondary school students.

Abbreviations

LGA	Local Government Area
SPSS	Statistical Package for Scientific Solution
OHI-S	Simplified Oral Hygiene Index
DMFT	Decayed, Missing and Filled Teeth
WHO	World Health Organisation

Author Contributions

Inegbenosun Iluobe: Conceptualization, Data Analysis, Methodology, Resources, Writing – original draft

Enahoro Folashade: Writing – review & editing

Abah Steve: Writing – review & editing

Conflicts of Interest

The authors declare no conflicts of interest.

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