



Oral Health Practices among Secondary School Students in Udi Local Government Area, Enugu State

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Abstract

Oral health is a key indicator of overall health of an individual. The purpose of this study was to assess the level of oral health practices among secondary school students in Udi local government area of Enugu State. To achieve this purpose, two objectives with two corresponding research questions and two null hypotheses guided the study. Descriptive cross-sectional survey research design was used for the study. The population for the study comprised of three thousand, six hundred and fifty six junior secondary school students in Udi Local government area. A sample of three hundred and sixty respondents were used for the study. Multi-stage sampling procedure was used to select the sample. A reliability coefficient of 0.80 was obtained and the instrument was adjudged reliable for the study. Frequencies and percentages were used to answer the research questions while chi-square statistic was used to test the null hypotheses at .05 level of significance. The result of the study showed that there was high level of preventive oral health practice (68.9%) among the junior secondary school students. The result also showed there was moderate level of promotive oral health practices (65%). There was significant difference in the preventive oral health practices based on gender. It was therefore recommended among others that since they have good preventive and promotive oral health practices, measures should be taken by both teachers and public health educators to encourage them to sustain these practices and aggressive health education by the teachers on the importance of brushing two times daily. Regular dental check up should be encouraged.

Key words: Oral Health, Practices, Secondary School Students, Udi Local Government

Introduction

Oral health is an integral part of the physical social and mental wellbeing of man. It is essential for man's overall wellness though it is sometimes taken for granted. Good oral health enhances our ability to speak, smile, eat and show our emotions through facial expressions. Nyamurykung (2012) noted that the mouth is the gateway to the body and whatever affects oral health may also affect the general health. Good oral hygiene has been shown to contribute greatly to prevention of oral related disease.

Oral diseases pose a major health burden for many countries and affect people throughout their lifetime causing pain, discomfort, disfigurement and even death. The Global Burden of Disease Study (2017) estimated that oral disease affect close to 3.5 billion people worldwide. World Health Organization-WHO (2020) further stated that in most low and middle income countries, with increasing urbanization and changes in living conditions, the prevalence of oral disease continues to rise. In the United States of America, over 80 percent of student in schools suffer from one form of oral health problem or the other due to poor oral health practice.

Oral health is a standard of health of the oral and related tissues without active disease. Oral health according to WHO (2012) is the state of being free from mouth and facial pain, oral and throat cancer, oral infection and sores, periodontal and gum diseases and disorders that limit an individual's capacity of biting, chewing, smiling, speaking and psychological wellbeing. A new definition of oral health was announced by FDI Dental World Federation (2016) which stated that oral health is multifaceted and includes the ability to speak, smile, smell, taste, touch, chew, swallow and convey a range of emotions through facial expressions with confidence and without pain, discomfort and disease of the craniofacial complex. These definitions show that oral health is important not only to prevent oral disease but also to promote the self-esteem of an individual.

A lot of people suffer from poor oral health without being aware of their condition Singh, Rai and Rawat (2012) stated that oral health of an individual depends on his or her oral health care practices. Oral health care practice is an activity undertaken by people in order to protect, promote, or maintain oral health and prevent dental diseases. These practices include tooth brushing morning and night, brushing properly, brushing of tongue, use of fluoride toothpaste, flossing, use of mouthwash, drinking more water, eating crunchy fruits and vegetables, limiting sugary and acidic foods and seeing the dentist (Kristeen, 2019). Other practices identified by the American Dental Association -ADA, (2019) include use of proper equipment which entails use of a soft-bristled toothbrush that fits the mouth comfortably, keeping the equipment clean by rinsing the toothbrush with water after brushing and storing it in an upright position. The authors also stressed the issue of keeping one's toothbrush separate from

other toothbrushes in the same holder to prevent cross-contamination. Toothbrushes should not be routinely stored in closed containers to avoid growth of bacteria, yeast or mould. According to the authors it is important to replace the toothbrush once every three months or sooner if the bristles flay or become irregular. If these practices are neglected, it could lead to oral diseases or other health problems with severe consequences.

Oral diseases can be life threatening, they are frequently considered separate from other chronic conditions but they are actually inter-related. Some of the diseases that impact our oral health include cavities (tooth decay), gum (periodontal) disease and oral cancer (Centers for Disease Control and Prevention- CDC 2020). The authors also stated that poor oral health is also associated with chronic diseases such as diabetes and heart disease. Murray (2012) observed that oral diseases are likely to cause considerable discomfort, pain and suffering, and these oral diseases were responsible for the loss of several secondary school students in the United Kingdom. Thus, what affected other students elsewhere in the world could also affect secondary school students in Udi local government area. Federal Ministry of Health (FMOH, 2014) developed a health policy aimed at delivering health to all Nigerians including students through three levels of health care system namely primary, secondary and tertiary levels. These three systems of health care provide preventive, promotive, curative and restorative health services. For the purpose of this study, oral health practices of secondary school students will be determined on the levels of preventive and promotive oral health care practices.

Preventive oral health practices according to Saul (2014) involves all the necessary and vital actions aimed at preventing oral diseases, these actions include brushing and flossing of the teeth, use of fluoridated toothpaste, proper diet, regular dental maintenance and continuity care appointments. Promotive oral health practices according to WHO (2003) include, building healthy policy, creating supportive environment strengthening community actions, developing personal skills, reorienting. Promotive oral health is based on six different areas which includes nutrition (reduction in frequency of sugar intake), oral hygiene (regular dental plaque removal), smoking cessation (smoking explains 50% of periodontal disease prevalence), preventing dental trauma; changing environment (conducive for oral health) and empowering people to take care of their health behavior. (de vasconcelos, Marcenes, Oliveira, Sheiham & Bonecker, 2009). Oral health promotion aims to change oral health habits of people to be conducive to oral health. The “people” in this study includes secondary school students.

Secondary school students are students who are still in their adolescent stage of 10-19 years of age. Secondary school student are divided into two (2) different groups, junior secondary and senior secondary. It has been observed that majority of these secondary school students who are still in the stage of physical, emotional and social maturity tend to have problems with their personal hygiene, including oral hygiene. These students normally engage in unhealthy oral practices such as brushing just once a day, using wrong technique while brushing (horizontal movement instead of up and down motion), eating food containing much sugar and snacks such as biscuits, candies, chewing gums, sweets, drinking carbonated soft drinks and alcohol. Amongst the socio-demographic factors that affect oral health practices is gender. In this study the issue of gender was examined. More often than not, females have been shown to have higher level of general hygiene consciousness (including oral hygiene) and practice than men. Understanding the effect of gender on oral health will facilitate the development of successful attitude, behavior and practice modification towards sustainable oral health.

The location of the study is Udi local government area. It is one of the seventeen (17) LGAs of Enugu-State. It is bounded on the North by Igbo Etiti, on the South by Enugu North, on the East by Enugu East and on the West by Ezeagu local government area all in Enugu State. There are twenty-nine secondary schools in Udi local government area out of which fifteen schools will be used for the study. Secondary school students are well known to engage in eating sweetened foods, snacks and others. These could lead to oral problems such as dental caries, mouth odour, tooth loss and tooth decay.

Purpose of the Study

This study determined the oral health practices of secondary school students in Udi local government area of Enugu State. Specifically the study examined:

1. Preventive oral health practices of secondary school students in Udi LGA, Enugu state.
2. Promotive oral health practices of secondary school students in Udi LGA, Enugu state.

Research Questions

The following research questions guided the study:

1. What are the preventive oral health practices of secondary school students in Udi LGA, Enugu state?
2. What are the promotive oral health practices of secondary school students in Udi LGA, Enugu state?

Research Hypotheses

The following null hypotheses were formulated for the study and were tested at .05 level of significance.

1. There is no significant difference in the preventive oral health practices of male and female secondary school students in Udi LGA, Enugu state.
2. There is no significant difference in the promotive oral health practices of male and female secondary school students in Udi LGA, Enugu state.

Methods

Research Design: The study adopted a descriptive cross-sectional survey research design. A cross-sectional survey is one that produces a snapshot of a population at a particular point in time, cross-section of the subjects of varying ages and other socio-demographic factors are sampled and studied at the same time and data are obtained at one time from groups or at different stages of development. (Cohen, Manion, & Morrison, 2011).

Area of the Study: The study was conducted in Udi local government area of Enugu State. The researcher observed that the secondary school students in the area engaged in eating too much of sweetened foods, snacks, soft drinks amongst others which will likely predispose them to oral health problems. Thus the researcher deemed the area appropriate for the study.

Population for the Study: The population for the study consisted of all junior (JSS 1 & 11) secondary school students in the 29 government secondary schools in Udi LGA. The Post-Primary School Management Board Records and Statistics (PPSMB, 2018/2019) section, shows that there are 1,816 junior secondary one students and 1,840 junior secondary two students government which gave a total of 3,656 students. The junior secondary three students were not included in the study because they had finished their examinations and left the school at the time data was collected.

Sample and Sampling Techniques: A sample size of 360 junior secondary school students were selected and used based on Taro Yamane formula for a finite population. The multi-stage sampling technique was used for the study. The first stage involved using balloting without replacement to select fifteen schools out of the twenty nine schools. The second stage involved the random selection of one class each of JSSI and JSS2 from each of the fifteen schools making it a total of thirty classes. The third stage involved using proportionate sampling procedure to select twelve students (girls and boys) from each of the classes giving a grand total of three hundred and sixty students. Females-192 and males-168.

Instrument for Data Collection: The instrument for data collection was researcher-designed questionnaire on Oral Health Practices (OHPQ). The questionnaire consisted of three sections, A, B and C. Section A contained one item on the demographic data of the respondents. Section B contained eleven items on preventive oral health practices while section C contained six items on promoting oral health practices. The face validity of the instrument was established through the judgment of three experts in the Department of Human Kinetics and Health Education, University of Nigeria, Nsukka. The reliability of the instrument was established by administering 20 copies of the instrument to 20 junior secondary school students at Community Secondary School Iwollo-Oghe in Ezeagu LGA of Enugu State, this is because they have the same characteristics with the population of the study. This method was utilized by dividing the items into two equivalent parts and correlating the scores in one part with the scores in the other part. The test items on each section were split into two (odd numbers and even numbers), the relationship of the halves was compared using Spearman Rank-order Correlation. A reliability coefficient of .80 was obtained for the instrument which was adjudged reliable for the study. This is in line with the guidelines of Miller (2013) that if a reliability coefficient index of .70 and above is obtained, the instrument will be considered reliable. Hence the OHPQ was considered appropriate for the study on oral health practices.

Data Collection Technique: 360 copies of the instrument were administered to the junior secondary school selected with the help of the class prefects. The administered questionnaires were filled and collected on the spot which gave a 100% return rate.

Data Analysis Technique: Data generated were analysed using frequency counts, percentages and Chi-square statistic. The Yes or No response scale emphasized by Enyi and Nworgu (2006) was used to analyze the responses for oral health practices among secondary school students, "Yes" was assigned to a practice that has taken place while "No" was assigned to an action that the individual did not adopt. Responses from 0-49.9 percent were considered as low responses while responses from 50-100 percent were considered as high responses. The research questions were answered using frequencies and percentages while the null hypothesis was tested using Chi-square statistic at .05 level of significance. If the chi-square is below .05 it is rejected and if it is above .05 it is accepted.



Results

Table 1: Percentage Responses on Students' Preventive Oral Health Practices (n=360)

S/N	Items	Yes		No		Dec
		f	%	f	%	
1	Brushing of mouth at least once a day.	160	44.4	200	55.6	Low
2	Use of toothbrush and toothpaste when brushing.	348	96.7	12	3.3	High
3	Brushing teeth using up and down technique.	300	83.3	60	16.7	High
4	Cleaning the spaces between your teeth.	284	78.9	76	21.1	High
5	Use of chewing sticks to clean the teeth.	116	32.2	244	67.8	Low
6	Regular use of mouthwash.	132	36.7	228	63.3	Low
7	Cleaning our tongue while brushing.	308	85.6	52	14.4	High
8	Using grass stick to clean the tongue.	48	13.3	312	86.7	Low
9	Rinsing mouth with water after each meal.	240	66.7	120	33.3	High
10	Brushing your teeth using soft toothbrush.	284	78.9	76	21.1	High
11	Use of sharp object like pin to remove sticky remnants of food from your teeth.	92	25.6	268	74.4	Low
Average (%)		68.9		31.1		High

Results in table 1 showed that more than half of the students (55.6%) did not brush their teeth at least twice daily. Majority of the students (96.7%) used tooth brush, toothpaste and clean water when brushing their teeth. The table also showed that 83.3% of the students brushed their teeth using the up and down technique. One-third of the students used mouthwash regularly while the remaining (63.2%) two thirds did not use mouthwash regularly. The table further showed that (66.7%) of the students rinsed their mouth with water after each meal. Majority of the students (78.9%) made use of soft tooth brush.

Table 2: Percentage Responses on Students' Promotive Oral Health Practices (n=360)

S/N	Items	Yes		No		Dec
		F	%	f	%	
12	Regular visit to the dentist for a dental check-up.	96	26.7	264	73.3	Low
13	Use of dental floss to clean your teeth.	80	22.2	280	77.8	Low
14	Spending at least 5 minutes when brushing your teeth.	224	62.2	136	37.8	High
15	Intake of sugary foods/snacks and soft drinks.	244	67.8	116	32.2	High
16	Using of teeth to crack hard objects.	128	35.6	232	64.4	Low
17	Use of your school health teachers to carry out oral inspection always.	128	35.6	232	64.4	Low
Average (%)		52.2		47.8		High

Results in table 2 showed that majority of the students (73.3%) did not visit the dentist for dental check-up (22.2%) of them used dental floss to clean their teeth. The table also showed that 62.2% of the students spent at least 5 minutes while brushing. The table further revealed that (67.8%) of the students were involved in taking sugary foods and snacks while (64.4%) did to have their teeth inspected by the school health teacher.

Table 3: Summary of Chi-square Analysis of Preventive oral Health Practices Based on Gender

Variables	N	Yes	No	χ^2	Df	p-value	Decision
Gender	360	O(E)	O(E)	7.169	1	.007	Rejected
Male	168	104(115.7)	30(52.3)				
Female	192	144(132.3)	48(59.7)				

Table 3 showed that there is significant difference in preventive oral health practice based on gender ($\chi^2 = 7.169$, $df = 1$, $P.value = .007$) since $P.value$ is less than .05 level of significance. This implies that both males and females differed in their preventive oral health practices.

Table 4: Summary of chi-square analysis of Promotive Oral Health Practices Based on Gender

Variables	N	Yes	No	χ^2	Df	p-value	Decision
Gender	360	O(E)	O(E)	.814	1	.367	Not Rejected
Male	168	92(87.7)	76(80.3)				
Female	192	96(100.3)	96(91.7)				

Table 4 showed there is no significant difference in promotive oral health practice based on gender ($\chi^2 = .814$, $df = 1$ P. value = .367) since p value is greater than .05 level of significance. This implies that males and females did not differ in their promotive oral health practices.

Discussions

Findings showed that more than half of the students (55.6%) did not brush their teeth twice a day, they brushed only once a day. This was surprising because one would have expected that these students should be able to practice what they are being taught in health education classes about the benefits of brushing twice daily. The study is in contrast with the one carried out by Sajida et al., (2017) which stated that 55.9% of the participants brushed their teeth twice a day while only 36.7% brushed only once a day. The implication is that more needs to be done in the area of health education so that these students will understand the benefits of brushing two times in a day and practice it religiously. The table also revealed that majority of the students (96.7%) used toothbrush, toothpaste and clean when brushing their teeth. This is expected and thus not surprising. Similar findings were also noted by Paul et al., (2014). The table further revealed that only 36.7% of the participants used mouth wash as an oral hygiene aid and this is also in agreement with the study carried out by Paul et. al. (2014) where only 8.9% of the subjects used mouthwash. The finding was not surprising because most of these children are still under the custody of their parents who might not be able to afford to buy mouthwash for them to use in addition to the regular tooth paste. The use of mouthwash and Dental floss were considerably low (36.7% and 22.2% respectively). This was also noted by Fatima et al.,(2018). The study also showed that 32.2% used indigenous means (chewing stick) as an aid to toothbrush and this is similar to the study carried out by Priyaranjan, Barman & Kumar (2020).

Findings revealed that 73.3% of the participants did not visit the dentist for a regular check-up. This was not surprising because research has proved that oral health care has always been a neglected area. Fatima et al., (2018) also stated that 78.5% of their participants did not also visit the dentist regularly but only when needed. Bashiru & Anthony (2014) also found out that 71.6% of their subjects had never visited the dentist. The poor utilization of dental services may be due to lack of perception of the need for dental care, poor access to oral health services and generally poor attitude towards oral health care. Therefore it may be necessary to increase awareness on oral health for school children in Enugu State. Dental check-up has not been a practice and most people only attend dental clinic when they experience pain. A greater percentage of the students (67.8%) were involved in eating sugary foods (snacks). The result of study is in consonance with that with the one conducted by Akinyamoju, Taiwo & Ambeke (2018) which stated that majority (61.9%) consumed carbonated drinks and snacks at least once a week. The frequency of these snacking behavior may be important to address as part of interventions designed to promote health and to prevent oral diseases in our teenagers.

Majority of the student used the right technique (up and down). This is divergent to result obtained by Saadu, Musa, Kamaideen, & Buhari, (2012) in Ilorin where horizontal method was predominant. This could be a result of knowledge that might have been acquired through medical or during health education classes. Findings equally showed there was a significant difference in the preventive oral health practice based on gender. The result was not surprising and is consistent with the study of Folayan et al., (2014) where more females than males practice the recommended preventive oral self-care. This is probably because females are by nature more meticulous about general hygiene and cleanliness than their male counterparts.

Conclusion

Based on the findings and discussions of the study it can be concluded that majority of the students had a fair preventive oral health practice by brushing their teeth at least once a day, many used soft tooth brush with tooth paste and clean water to brush their teeth. However it was observed that dental checkup was not a practice among the school children.



Recommendations

On the basis of these research findings, the following recommendation was made:

1. Aggressive health education should be enforced by the teachers on the importance of brushing two times daily.
2. Regular dental checkup should be encouraged by teachers.
Male students should be encouraged to be more hygiene conscious.

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