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## Original Research Article

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## Dental hygiene practice among pupils in community schools Orji, Owerri North local government area Imo state

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### Abstract

This study investigated dental hygiene practices among pupils in community school Orji, Owerri North L.G.A., Imo State. During community field posing in the school, pupils in the primary schools were found with bad teeth and dirty mouth. The researcher took up this research topic so as to enable the pupils in Community School Orji, Owerri North L.G.A. to adapt to a better dental hygiene practices. Descriptive survey method was used for the study, structured questionnaire were served as instrument for data collection. However, a sample size of 180 pupils was used to represent the entire population. Result obtained, revealed that majority of the respondent (55.6%) understood dental hygiene as using water to rinse the mouth, the pupils in Community School Orji, Owerri use mainly tooth paste and most pupils in Community School Orji use their tooth brushes as long as it can last, believe that dental hygiene keeps the mouth clean and healthy and also accept that lack of adequate information on dental hygiene influences the respondents. The researcher therefore, recommended that seminars and enlightenment campaigns be organized periodically to educate these pupils on dental hygiene practice.

**Keywords:** Dental hygiene practice, pupils, community schools Orji

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### Introduction

The human mouth is home to millions of microorganism, most of the micro organisms are harmless, under certain conditions, however, some of the microorganism can cause oral infections such as tooth decay or gum disease (Dental Health Foundation, 2013).

Hygiene is a set of practices performed for the preservation of health (the American Heritage English Dictionary, 2000).

Oral health is an important part of general health and can be defined as a state of being free from chronic

mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate periodontal (gum) disease, tooth decay and tooth loss, and other disease and disorders that affects the oral cavity (WHO,2012). Oral health is fundamental to general health and wellbeing, it is the practice of keeping the mouth and the teeth clean in order to prevent dental problems such as dental caries, gingivitis, periodontitis tooth loss, oral mucosal lesions, oropharyngeal cancers, necrotizing ulcerative stomatitis (noma) orodental trauma and bad breath. Oral health is a determinant of general health and quality of life. A combination of measures that include

water fluoridation, brushing, flossing, sealants, good nutrition and regular visit to the dentists can prevent 80 - 90% of dental problem (WHO, 2012).

Oral health problems such as oral pain missing teeth, gum disease and oral infection can affect a person's physical psychological, mental and social wellbeing (CDA, 2012).

Furthermore, oral health is a state of the oral and related tissues and structures that contribute positively to physical, mental and social wellbeing and enjoyment life's possibilities, by allowing the individual to speak, eat and socialize unhindered by pain, discomfort or embarrassment (CAD, 2012) keeping a healthy life is an important part of living a healthy life (CDA, 2012). Dental hygiene is the most vital part of dental care. Good dental hygiene is integral to the health of the mouth. It is essential to the mouth, which can assist in evading excruciating infections secondly, good dental hygiene is essential cosmetically as it contributes to pleasant healthy smile, enhance good breath and whiter teeth.

In a study by international journal of dental hygiene on November, 2012 on self reported poor oral hygiene among adolescent in undeveloped countries, dental hygiene was observed as a neglected aspect of adolescent's health, globally but more so in low income countries.

In the same view, large number of children with dental health problems can have long range adverse health impact children develop the knowledge and skills to maintain oral hygiene and eat properly to prevent oral and dental health problems (Piyada, 2010).

Globally, WHO (2012) asserted that about 30% of people aged 65-75 have no natural teeth and that oral disease poor and advantaged population groups. WHO also stated that worldwide, 60 - 90% of school children and nearly 100% of adult have dental canties. However, information about the oral health awareness and oral hygiene practices of children in contries is scanty, there is need to scale off the awareness in order to reduce its negative effect on the children.

### **Purpose/Objective of the Study**

The main purpose of the study is to determine the dental hygiene practices among pupils in community school Orji, Owerri North Local Government.

The specific objectives include:

To determine pupils perception on dental hygiene practices.

To identify method used in dental hygiene.

To determine the practice of dental hygiene among pupils in Community School Oiji, Owerri North L.G.A.

To identify available dental services.

To identify factors that affects their practice of dental hygiene.

### **Design of the study**

The study design used by the researcher is the descriptive survey and it is aimed at determining the dental practices among pupils in Community School Orji, Owerri North Local Government Area, Imo State.

### **Setting of the Study**

The setting of this study is at Community School Orji, Owerri North L.G.A., Imo State Owerri is the capital of Imo State, Imo State is in south east in Nigeria.

### **Target Population**

The target population of this study is restricted to all pupils in Community School Orji, Owerri North L.G.A., Imo State, Nigeria whose total population is about 341.

### **Sampling Technique**

In order to have a concise study, the researcher use stratified sampling technique in which all the pupils in Community School Orji were arranged in strata of their respective classes as thus:

Table I: Showing the frequency or number of pupils and percentages of each class in Community School Orji.

| Class         | Frequency | Percentage (%) |
|---------------|-----------|----------------|
| Primary one   | 40        | 11.7%          |
| Primary two   | 52        | 15.2%          |
| Primary three | 45        | 13.2%          |
| Primary four  | 60        | 17.6%          |
| Primary five  | 62        | 18.2%          |
| Primary six   | 82        | 24.0%          |
| Total         | 341       | 100            |

**Sample Size**

According to Israel (2013) calculating the sample size for this study can be done with the use of Yamane’s formula for calculating sample size which is

$$n = \frac{N}{1 + N(d)^2}$$

where n = the sample size.

N = The population size and  $(d)^2$  = the level of precision (assumed to be 0.05)<sup>2</sup>

$$\frac{N}{1 + N(d)^2} = \frac{341}{1 + 341(0.05)^2}$$

$$\frac{341}{1 + 341 \times 0.0025}$$

$$\frac{341}{1 + 341 \times 0.0025} = \frac{341}{1.8575} = 183.57 \approx 180 \text{ pupils}$$

The researcher used this formula because the total population under study is too large and there is limited resources and time for the research.

The sample size of this study is 180 pupils which constitute about 50% of the population of pupils selected for study. The formula and method used to derive the values for the sample size can be seen in Appendix I.

Table 2: Showing population of pupils sampled out from primary four, primary five and primary six.

| Class        | Frequency |
|--------------|-----------|
| Primary four | 41        |
| Primary five | 68        |
| Primary six  | 71        |
| Total        | 180       |

**Instrument for Data Collection**

The instrument use by the researcher was the questionnaire which was constructed by the researcher and so as to ascertain dental hygiene practices among pupils in Community School Orji, Owerri North L.G.A., Imo State, there were total of 19 test items

with both closed and open ended question and 180 questionnaire were printed and self administered. The subject were allowed to give their own opinion about the subject under study in open - ended question as the case may be. The responses provided were exhaustive of all the possible responses and at the same time mutually exclusive validity.

Health Science Centre (2012) defines validity as the degree to which the instrument measures what it is supposed to measure. If an instrument is not reliable over time, it cannot be valid, as results can vary depending upon when it is administered. However, for this study, face and content validity of the instrument was done by a supervisor reading through the questionnaire and corrections deemed necessary, and the same were affected before the final copy was produced.

### Reliability of the Instrument

Reliability determines how consistently a measurement of skill or knowledge yields similar results under varying conditions. If a measure has a high reliability, it yield consistent results Health Science Centre, (2012). In order to ascertain reliability of the instrument used for this study, a pilot study with the administration of fifteen (15) pupils schooling at Orji Town Primary School Oiji, Owerri randomly picked from each class (primary four to primary six). The respondents filled and returned their questionnaire with responses duly completed, on analysis, the researcher found out that their responses remained consistent and the reliability coefficient is calculated as 0.8 thus showing high reliability of the measuring

## Results

### Biodata Analysis

Table 3: Showing the age bracket of pupils in Community School Oiji, Owerri North L.G.A., Imo State.

| Age          | Frequency (f) | Percentage (%) |
|--------------|---------------|----------------|
| 9-10         | 31            | 17.2           |
| 11 - 12      | 43            | 23.9           |
| 13 and above | 106           | 58.9           |
| Total        | 180           | 100            |

Result from table 3 show that 31 (17.2%) respondents are between ages 9- 10 years; 43(23.9%) respondents are between 11-12 years and 106 (58.9%) are above

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instrument. The researcher collected back the entire questionnaire, giving 100% return rate. A total of 41 questionnaires were shared to primary four pupils, 68 to primary five pupils and 71 to primary six pupils giving a sum total of 180 pupils which is the sample size for the study.

### Ethical Consideration

In the course of this study, the research took into consideration all the ethic of research. The following are the ethical consideration taken care of, by the researcher. Before the researcher administered, the questionnaire to the pupils in any school, permission letter from the department of nursing science was sent to the principal of each school for approval. The researcher also ensured that the pupils were not coerced to participate rather they opted to participate voluntarily. The anonymity of the pupils was ensured and none of their names were ever mentioned during the course of this work. An informed consent was obtained from the pupils before the questionnaire was given to them to fill. The researcher addressed and explained reasons for the conduct of the study and assured them of anonymity and confidentiality of their responses.

13years and above which has the highest frequency and percentage.

Table 4: Showing the gender of the respondent

| Gender | Frequency (f) | Percentage (%) |
|--------|---------------|----------------|
| Male   | 82            | 45.6           |
| Female | 98            | 54.4           |
| Total  | 180           | 100            |

Table 5: Showing the frequency and percentages of pupils in each of the class under study.

| Classes   | Frequency (f) | Percentage (%) |
|-----------|---------------|----------------|
| Primary 4 | 41            | 22.8           |
| Primary 5 | 68            | 37.8           |
| Primary 6 | 71            | 39.4           |
| Total     | 180           | 100            |

Result from table 5 show that 41 (22.8%) respondent are in primary 4, 68(37.8%) respondent are in primary 5, and 71(39.4%) respondent are in primary 6.

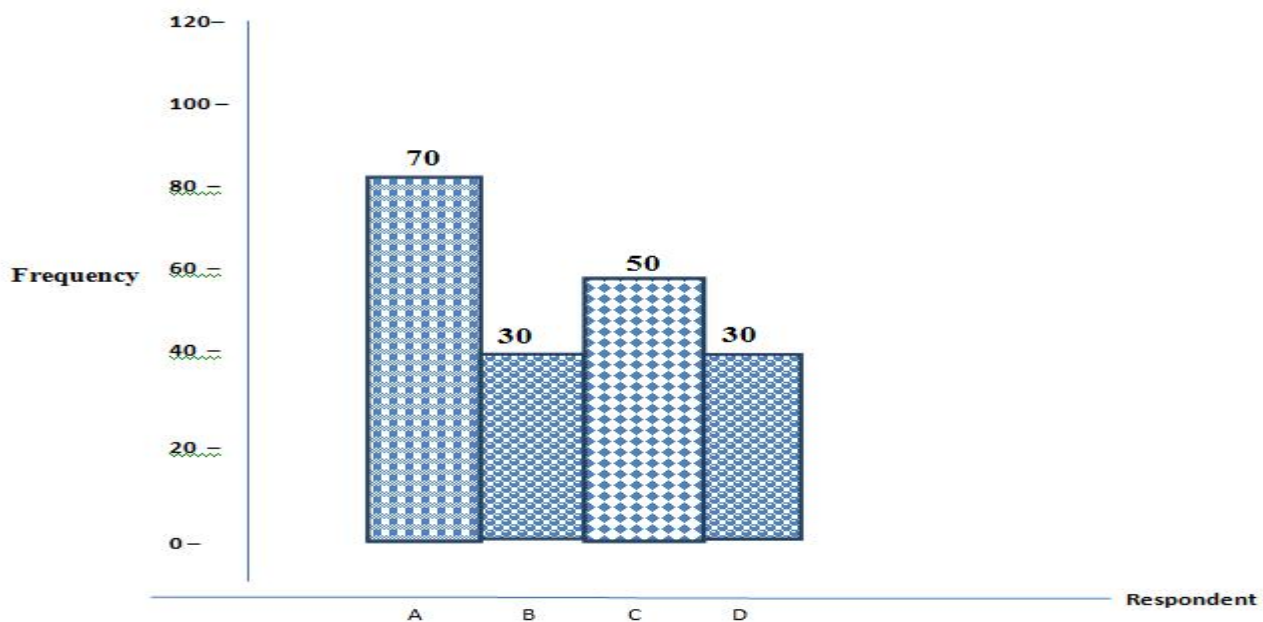
Table 6: Showing what respondent feel about dental hygiene practice.

|       | Items  | Frequency (f) | Percentage (%) |
|-------|--|---------------|----------------|
| A     | It keep the mouth clean and healthy              | 70            | 38.9           |
| B     | It prevent hunger                                | 30            | 16.7           |
| C     | It helps in prevention of gum disease            | 50            | 27.8           |
| D     | It prevent bad breath and bad taste in the mouth | 30            | 16.7           |
| Total |  | 180           | 100            |

From the above 70(38.9%) of the respondent says that they feel that dental hygiene practice keeps the mouth clean and healthy, 30(16.7%) of respondent feels that dental hygiene practice prevent hunger. 50(27.8%) of

respondent feel that dental hygiene practice helps in prevention of gum disease and 30(16.7%) of respondent feels that dental hygiene practice prevent and breath and bad taste in the mouth.

Fig. 1:Histogram showing what the respondent feel about dental hygiene practice.



| Option | Items                  | Frequency (f) | Percentage (%) |
|--------|------------------------|---------------|----------------|
| A      | It should be encourage | 158           | 87.8           |
| B      | Should be stopped      | 22            | 12.2           |
| Total  |                        | 180           | 100            |

From the above 158 (87.8%) of the respondent says that dental hygiene practice should be encourage.

22(12.1%) of respondent says that dental hygiene practice should be stopped.

Table 8: Showing what respondent use for mouth

| Option | Items                 | Frequency (1) | Percentage (%) |
|--------|-----------------------|---------------|----------------|
| A      | Tooth paste and brush | 130           | 72.2           |
| B      | Dental floss          | 20            | 11.1           |
| C      | Others                | 30            | 16.7           |
| Total  |                       | 180           | 100            |

130 (72.2%) say they use tooth paste and brush for mouth cleaning; 20(11.1%) say they use dental floss

for mouth cleaning, and 30(16.7%) say they use other substance like salt, charcoal etc.

Table 9: Showing how the respondents use the tooth brush.

| Option | Items                | Frequency (f) | Percentage (%) |
|--------|----------------------|---------------|----------------|
| A      | Up and down movement | 23            | 12.8           |
| B      | From side to side    | 68            | 37.8           |
| C      | Any how              | 17            | 9.4            |
| Total  |                      | 180           | 100            |

From the table above, 23(12.8%) of the respondent use up and down movement while brushing; 72(40.0%) of the respondents brush from side to side; 68(37.8%)

brush their teeth any how while 17(9.4%) opted others without specifying while method.

Table 10: Showing how often the respondent changes their tooth brush

| Option | Items           | Frequency (f) | Percentage (%) |
|--------|-----------------|---------------|----------------|
| A      | Twice a year    | 63            | 35.0           |
| B      | Once in a month | 4             | 2.2            |
| C      | Others          | 113           | 62.8           |
| Total  |                 | 180           | 100            |

63(35.0%) of respondents says they change their tooth brush twice a year, 4(2.2%) says they change their tooth brush once in a mouth; and 113 (62.8%) says

they use their brushes as long as it can last or till it get misplaced.

Table 11: Showing what the pupils understood by dental hygiene

| Option | Items  | Frequency (f) | Percentage (%) |
|--------|--|---------------|----------------|
| A      | Using water to rinse the mouth daily             | 100           | 55.6           |
| B      | Cleaning the mouth before eating                 | 12            | 6.7            |
| C      | A process of keeping the mouth clean and healthy | 68            | 37.8           |
| Total  |  | 180           | 100            |

From the above table, 100(55.6%) of the respondent understood dental hygiene as a way of using water to rinse the mouth daily 12(6.7%) of respondents

understood dental hygiene as a way of cleaning the mouth before eating, and 68(37.8%) of respondent a process of keeping the mouth clean and healthy.

Table 12: Showing what is true about dental hygiene

| Option | Items   | Frequency (f) | Percentage (%) |
|--------|---|---------------|----------------|
| A      | Prevent gum disease                           | 29            | 16.1           |
| B      | Causes hunger                                 | 90            | 50.0           |
| C      | Prevent bad breath and bad taste in the mouth | 61            | 33.9           |
| Total  |   | 180           | 100            |

From the table 29(16.1%) of respondents accept that dental hygiene prevent gum disease 90(50.0%) of the respondent says dental hygiene causes hunger

61(33.9%) says it prevent bad breath and bad taste in the mouth.

Table 13: Showing what causes tooth decay

| Option | Items                         | Frequency (f) | Percentage (%) |
|--------|-------------------------------|---------------|----------------|
| A      | Bacteria present in the mouth | 65            | 36.1           |
| B      | Poor dental cleaning          | 100           | 55.6           |
| C      | Frequent eating               | 15            | 8.3            |
| Total  |                               | 180           | 100            |

From the above 65(36.1%) of respondent says that tooth decay is caused by bacteria present in the mouth 100(55.6%) of respondent believed that tooth decay is

caused by poor dental hygiene and 15(8.3%) of respondent support the idea of frequent eating cause tooth decay.

Table 14: Showing how often pupils clean their teeth decay.

| Option | Items        | Frequency (f) | Percentage (%) |
|--------|--------------|---------------|----------------|
| A      | Once daily   | 160           | 88.9           |
| B      | Twice daily  | 16            | 8.9            |
| C      | Thrice daily | 4             | 2.2            |
| Total  |              | 180           | 100            |

From the table above, 160(88.9) of respondent clean their teeth once daily. 16(8.9%) of the respondent clean their teeth twice daily while 4(2.2) clean their teeth thrice a day.

What are the student’s opinions about the hygiene practices?

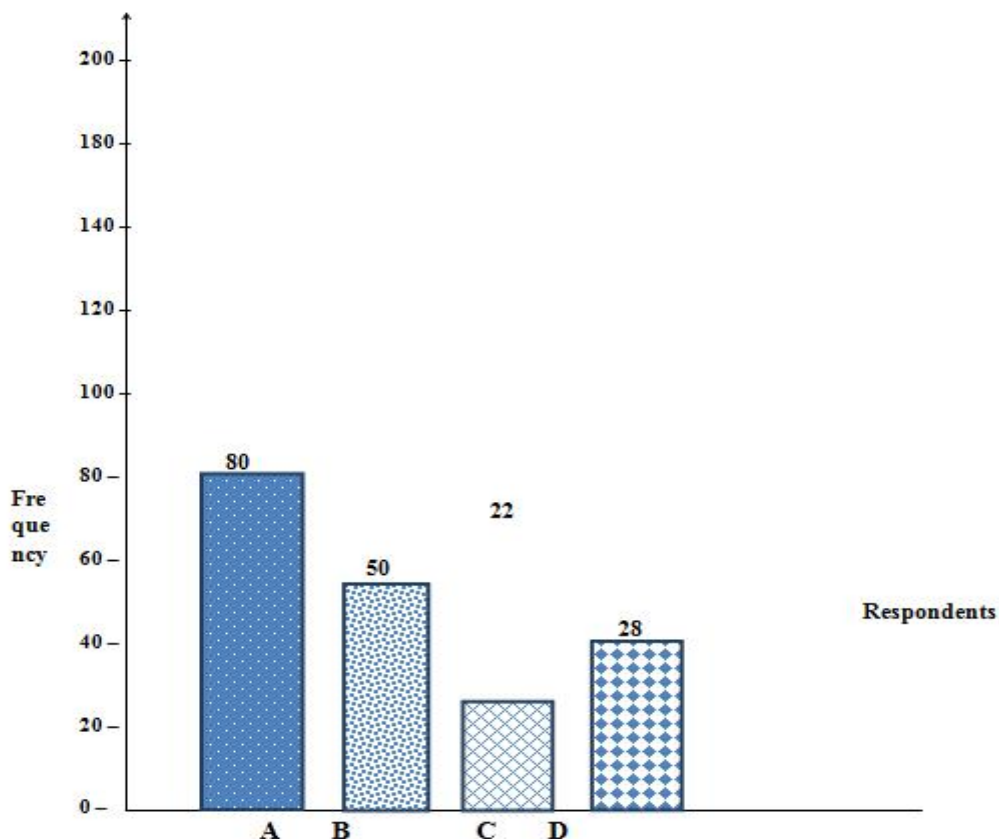
Table 15: Showing the following factors that affect/influence pupils dental hygiene practice?

| Option | Items  | Frequency (f) | Percentage (%) |
|--------|--|---------------|----------------|
| A      | Lack of adequate information   | 80            | 44.4           |
| B      | Lack of equipment used for dental hygiene  | 50            | 27.8           |
| C      | Lack of good water   | 22            | 12.2           |
| D      | Forgetfulness and time schedules for activities during the hour of dental cleaning | 28            | 15.6           |
| Total  |  | 180           | 100            |

From the above table 80(44.4%) of respondent believed that lack of adequate information on dental hygiene affect/influence the practice of dental hygiene. 90(50.0%) of the pupil states that lack of material used for dental hygiene affect dental hygiene practice.

22(12.2%) of respondent believed that lack of good water influenced dental hygiene practice, 28(15.6%) respondent believed that forgetfulness and time schedule for activities during the hour of dental cleaning affect dental hygiene practice.

Fig. 2: Bar Chart showing factors influencing the respondents dental hygiene





Finding from table 6 showed that majority of the respondents feel that dental hygiene keeps the mouth clean and healthy. The finding also accept Smile Concept (2012) which says that oral and dental hygiene refer to the practice of keeping the mouth healthy and clean by the following regular correct brushing and flossing routine.

Furthermore, the respondent think that dental hygiene cause hunger and disagreed that oral hygiene helps to prevent tooth decay and gum diseases.

Findings from table 9 showed that pupils in Community School Orji, Owerri use tooth paste and brush for mouth cleaning and this finding concurs with LIZ (2012) which states that tooth paste is a preparation used on a tooth brush to clean the teeth. Finding from table showed that most pupils in Community School Orji, Owerri use their tooth brushes as long as it can last, their tooth brushes as long as it can last they are also guilty of brushing their teeth side to side in a disorganized manner and usually brush their teeth daily.

Finding showed that the pupils of Community School Orji, Owerri believe that lack of adequate information on dental hygiene influences the respondent dental hygiene.

### Conclusion

This project work investigated the dental hygiene practices among pupils in Community School Orji, Owerri North L.G.A., Imo State, Nigeria. Good dental hygiene is integral to the health of the mouth enhances

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pleasant healthy smile, breath and whitens the teeth. However, deduction from the study showed that the pupils brush per month, and do not obey the principle of “one brush per month”. Only few of the children had visited a dentist and that was mainly because of toothaches or extractors. These pupils should be taught to brush their teeth at least twice a day and discard used tooth brush after a month and also visit the dentist regularly.

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