Oral hygiene status of primary school children

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Abstract

Background: The purpose of using tooth cleaning aids like chewing stick, toothbrush with locally made powder or fluoride containing toothpaste, is to attain good oral hygiene compatible with good oral health. Aim: To determine the oral hygiene status of public primary school children in a rural community in South-east Nigeria. Methodology: A cross sectional descriptive study of primary school children was done in a public primary school in Nkanu -West local Government Area of Enugu State. Ethical clearance for this study was sought and obtained, all participants who gave their assent were recruited. Socio-demographic data was obtained using interviewer -administered questionnaire. Oral hygiene status was determined using simplified oral hygiene index (OHI-S). After data collection, oral hygiene education and tooth brushing demonstrations were done. Data were analysed using Statistical Package for Social Sciences (SPSS) Version 20. P values < 0.05 were accepted as being statistically significant. Results: 57(46.3%) males, 66(53.7%) females were seen and examined, giving a male to female ratio of about 1:1.2. The age range of the participants was 8 to 14 years with a mean age of 10.2 ± 1.4 years. The mean OHI-S score was 1.5 ± 0.4. 80 (65.0%) had fair oral hygiene, 41(33.3%) had good oral hygiene while 2(1.7%) had poor oral hygiene status. Majority of the school children brush their teeth once daily, using the horizontal scrub technique. Conclusion: In this study, most of the school children had fair oral hygiene status. Good oral hygiene status was seen more among 9-10 year old children, while fair oral hygiene status was seen more among 10-11 year children. The association between oral hygiene status with age or gender was not statistically significant.

Keywords: Children, Oral hygiene, Public, Primary school.

INTRODUCTION

The purpose of using tooth cleaning aids like chewing stick, toothbrush with locally made powder, herbal toothpaste or fluoride containing toothpaste, is to attain good oral hygiene compatible with good oral health. Oral hygiene maintenance through regular removal of dental plaque, food deposits and debris is relevant in the prevention of dental caries and periodontal disease [1]. Oral hygiene measures have been practiced by different populations globally since many years ago. In rural areas, the brushing habits of some children are highly unsatisfactory [2]. They commonly brush their teeth once daily. Some of the children do not brush their teeth at all for days, some brush their teeth occasionally, some may not have access to a toothpaste or fluoride containing toothpaste, is to attain good oral hygiene compatible with good oral health.

School remains an important setting offering an effective and relevant ways to reach over to children and through them, families and community members [3]. Oral health promotion through schools is recommended by WHO for improving knowledge, attitude, and behaviour related to oral health among school children. School children can act as a mechanism in bringing about desirable changes in the family and they have an important role in primary prevention and health education among family members and their respective community [4]. The use of chewing sticks among school children under proper instruction has been reported to be effective as plastic/nylon toothbrushes for control of plaque and gingival bleeding [4,5]. Previous studies reported that the traditional, unsupervised method of tooth cleaning had no significant effect on plaque control among either children or adults [10-11]. Females are generally more motivated with regard to oral hygiene practices and thus brush their teeth more frequently than males [9,11].

Sukhabogi et al., in 2014 [12] from a study conducted in India reported that 39.1% of school children had good oral hygiene status,38.7% had fair oral hygiene status while 22.2% of the school children has poor oral hygiene status. Good oral hygiene status was seen more among private school children than government school children, while poor oral hygiene status was seen more among government school children. Akinyamoju et al., in 2018 from a study conducted in South-west Nigeria [13] reported that 57.7% of school children are highly unsatisfactory.
children in rural communities had fair oral hygiene status, 34.8% had
good oral hygiene status while 7.5% of the school children had poor oral
hygiene status. There are various studies and reports of oral hygiene
status among children in other parts of the country, Africa and the
World. The aim of this study is to determine the oral hygiene status of
public primary school children in a rural community in South-east
Nigeria and compare findings with published reports from Nigeria and
other countries of the World. It would also contribute to the existing
data on oral hygiene status of children in Nigeria and the West African
sub-region.

MATERIAL AND METHODS

A cross sectional descriptive study of primary school children was done
in a public primary school in Nkanu -West local Government Area of
Enugu State. The area is largely rural and its inhabitants are primarily
farmers, small-scale business people and traders. Ethical clearance for
this study was sought and obtained. Informed consent was obtained
from the parents of the school children, approval was obtained from the
head of the school and head of the parents-teachers association of the
school. All participants who gave their assent were recruited for the
study. Socio-demographic data was obtained using interviewer -
administered questionnaire, oral hygiene examination was done by a
single examiner and the students were examined while seated in an
upright position using natural daylight. Oral hygiene status was
determined using simplified oral hygiene index (OHI-S) and the index
teeth were present in all the participants. Scoring was done using the
OHI-S scoring method where oral hygiene is assessed as good (0.1 - 1.2),
fair (1.3 - 3.0) and poor (3.1 - 6.0). After data collection, oral hygiene
education and tooth brushing demonstrations were done. Data were
analysed using Statistical Package for Social Sciences (SPSS) Version 20.
P values < 0.05 were accepted as being statistically significant.
Frequency distribution, mean scores and standard deviation were
calculated. Chi-square test was used to determine the association of oral
hygiene status, age and gender. Mean comparison of index scores was
carried out using independent-t test when two groups are compared
and ANOVA when more than two groups were compared.

RESULTS

57(46.3%) males, 66(53.7%) females were seen and examined, giving a
male to female ratio of about 1:1.2. The age range of the participants
was 8 to 14 years with a mean age of 10.2 ± 1.4 years as shown in table
1. The total mean simplified oral hygiene index (OHI-S) score was 1.5 ±
0.4, total mean debris index (DI) score was 1.1 ± 0.1, total mean calculus
index (CI) score was 0.4 ± 0.3. The mean simplified oral hygiene index
(OHI-S) score, mean debris index score and mean calculus index score
were all higher in males than females as shown in table 2. 80(65.0%) had
fair oral hygiene, 41(33.3%) had good oral hygiene while 2(1.7%) had
poor oral hygiene status (figure 1). Good oral hygiene status was seen
more in females than males while fair oral hygiene status was seen more
in males than females as shown in figure 2. Good oral hygiene status was
seen more among children in primary five class and fair oral hygiene
status was seen more among children in primary six class as shown in
figure 3. Majority of the school children brush their teeth once daily,
using the horizontal scrub technique.

Table 1: Socio-Demographic Characteristics of Participants

| Variable                         | Frequency | Percent |
|----------------------------------|-----------|---------|
| Gender                           |           |         |
| Male                             | 57        | 46.3    |
| Female                           | 66        | 53.7    |
| Age group                        |           |         |
| 8-9                              | 43        | 34.9    |
| 10-11                            | 59        | 48.0    |
| 12-14                            | 21        | 17.1    |
| Level of primary education       |           |         |
| Primary 4                        | 45        | 36.6    |
| Primary 5                        | 41        | 33.3    |
| Primary 6                        | 37        | 30.1    |
| Total                            | 123       | 100     |

Table 2: Mean Score of Participants According to Gender

| Variable            | Male           | Female          | t-value | p-value |
|---------------------|----------------|-----------------|---------|---------|
| Debris index        | 1.07 ± 0.1     | 1.04 ± 0.1      | 1.56    | 0.12    |
| Calculus index      | 0.52 ± 0.4     | 0.37 ± 0.3      | 2.74    | 0.007   |
| Simplified oral hygiene index | 1.60 ± 0.5 | 1.41 ± 0.3     | 2.57    | 0.011   |

Table 3: Mean Score of Participants According to Level of Primary Education

| Variable            | Primary 4 | Primary 5 | Primary 6 | p-value |
|---------------------|-----------|-----------|-----------|---------|
| Debris index        | 1.06 ± 0.1| 1.08 ± 0.1| 1.03 ± 0.1| 0.26    |
| Calculus index      | 0.44 ± 0.3| 0.39 ± 0.3| 0.50 ± 0.3| 0.33    |
| Simplified oral hygiene index | 1.50 ± 0.4 | 1.50 ± 0.5 | 1.53 ± 0.3 | 0.81   |

Figure 1: Oral hygiene status of the participants
Oral hygiene should be educated and practiced at an early age as it is one of the determinants of the health state later in one’s life [4]. Hygienic oral health practices are necessary from a young age to ensure positive long term dental health and good oral hygiene.

CONCLUSION

In this study, most of the school children had fair oral hygiene status. Good oral hygiene status was seen more among 9-10 year old children, while fair oral hygiene status was seen more among 10-11 year children. The association between oral hygiene status with age or gender was not statistically significant.

Financial support and sponsorship: None

Conflicts of interest: There are no conflicts of interest

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