

ORAL HEALTH PROFILE OF PRIMARY AND POST -PRIMARY SCHOOL CHILDREN AT A HEALTH FACILITY IN USELU, BENIN-CITY

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ABSTRACT

Objective: To investigate the oral health profile of otherwise healthy primary and post -primary school children in Uselu, Benin-city.

Methodology: All consecutive primary and post-primary school children accompanying siblings and/or friends to access dental care at Mount Gilead hospital, Uselu between June 1, 2008 and May 31, 2009 and for who consents were obtained from parents or guardians on their behalf were recruited. Age, sex, and the gingival index were noted for these children. The Gingival Index was used to assess the severity and prevalence of gingivitis by examining the qualitative changes (that is, severity of the lesion) of the gingival soft tissue and scored on a four point scale 0-3, as follows:

0= No inflammation.

1= Mild inflammation

2= Moderate inflammation

3 = Severe inflammation

Results: A total of 340 children were assessed, with a male to female ratio of 3:2 (That is 204 males and 136 females). Three (0.9%) had no gingivitis, 35(10.29%) had mild gingivitis, 110 (32.35%) had moderate

gingivitis and 192 (56.47%) had severe gingivitis.

Conclusion: The oral health profile of these children is poor and unacceptable. In line with the millennium development goals, appropriate agencies should liaise with the right professionals to achieve the desired goals.

Recommendations: Massive oral health campaign.

INTRODUCTION

Oral health is an essential component of health throughout life. Poor oral health and untreated oral diseases and conditions can have a significant impact on quality of life. They can affect the most basic human needs, including the ability to eat and drink, swallow, maintain proper nutrition, smile, and communicate¹. The two commonest oral diseases are dental caries and periodontal diseases.

Periodontal diseases affect the dental supporting structures, primarily the gingiva and alveolar bone. Gingivitis and periodontitis are the two main disease groups. The prevalence of gingivitis and chronic periodontitis is affected by age and oral hygiene.

Gingivitis, a reversible dental plaque-induced inflammation of the gingiva, is characterized by erythema, edema, and fibrous enlargement of the gingiva without resorption of the underlying alveolar bone^{2,3}. Other signs are tender gums, extreme bad breath and gums that bleed easily. Gingivitis has been classified by clinical appearance, etiology and duration. The most common type of gingivitis is a chronic form induced by plaque. It is a common occurrence in children as young as five years of age².

Gingivitis is not a direct significant threat to the health of a healthy individual, but it can contribute to illness and cause local and systemic complications. Areas of chronic gingivitis may predispose the individual to the development of odontogenic abscesses by allowing a route of bacterial invasion into the periodontal space from the gingival pocket. The most common complication of chronic gingivitis is progression to periodontal disease and tooth loss⁴.

Gingivitis in children provides an appropriate model illustrating how the condition creates an environment in the gingival sulcus which in the long run potentiates the development of periodontitis; e.g., by favoring the establishment of a more pathogenic flora, such as spirochetes⁵. The usual course is acute, relapsing, intermittent, and chronic. After an initial cleaning and scaling in its early stages, gingivitis usually is reversible with good dental hygiene. Gingivitis generally responds well to appropriate treatment. Good oral hygiene, including brushing and flossing, treats and prevents chronic gingivitis⁶.

Therefore, efforts to develop effective products which have the potential to control gingivitis should be supported as an important goal and periodontal oral health benefit⁵. The WHO Global Strategy for the prevention and control

of noncommunicable diseases is a new approach to managing the prevention and control of oral diseases⁷. Continuing surveillance of levels and patterns of risk factors is of fundamental importance to planning and evaluating community preventive activities and oral health promotion⁷.

Oral health in children is a necessary prerequisite to overall health and well-being and should be part of comprehensive primary care. Most oral diseases in children are preventable. Oral diseases can cause pain, interference with eating, poor self-image, over-use of emergency rooms, and loss of valuable time from school and work.

Various indices exist for the assessment of oral health and these include those that measures gingival status, periodontal status and caries activity. Studies that assessed oral health in Nigerian children mostly used the simplified oral hygiene index of Greene and Vermillion and the Community Periodontal Index of Treatment Needs and DMFT⁸⁻¹⁰ but few used gingival index by Loe and Silness¹¹.

The objective of this study was to investigate the oral health profile of otherwise healthy primary and post - primary school children in a health facility located in Uselu, Benin City.

MATERIALS AND METHODS

This study was designed as a descriptive cross-sectional survey. All consecutive primary and post-primary school children accompanying siblings and/or friends to access dental care at Mount Gilead hospital, Uselu between June 1, 2008 and May 31, 2009 and for who consents were obtained from parents or guardians on their behalf were recruited. Data collected include sex, age and gingival index. The Gingival Index of Loe and Silness,

1963 was used to assess the severity and prevalence of gingivitis by examining the qualitative changes (that is, severity of the lesion) of the gingival soft tissue and scored on a four point scale 0-3, as follows:

0 = No inflammation i.e. Normal gingiva

1 = Mild inflammation i.e. Slight

change in colour, slight oedema with no bleeding on probing.

2 = Moderate inflammation i.e. Redness, oedema and glazing, with bleeding on probing.

3 = Severe inflammation i.e. Marked redness and oedema, with ulceration and a tendency to spontaneous bleed.

RESULTS

Table I: AGE AND GENDER DISTRIBUTION

Age (Years)	Male (%)	Female (%)	Total (%)
5-9	103 (30.3)	80 (23.5)	183 (53.8)
10-14	80 (23.5)	42 (12.4)	122 (35.9)
15-19	21 (6.2)	14 (4.1)	35 (10.3)
Total	204 (60.0)	136 (40.0)	340 (100.0)

A total of 53.8% of the children examined fall into the 5-9 year age group of which 30.3% are males and 23.5% female, 35.9% are in the 10-14

year age group: 23.5% males and 12.4% female while 10.3% in the 15-19 year age group and is made up of 6.2% males, 4.1% female (**Tab. I**).

Table II: PREVALENCE OF GINGIVITIS

Score	Severity	Total (%)
0	No Inflammation	03 (0.8)
1	Mild inflammation	35 (10.3)
2	Moderate inflammation	110 (32.4)
3	Severe inflammation	192 (56.5)

The prevalence of gingivitis is 99.2%. The grading showed that 10.3% had signs of mild gingivitis, 32.4%

moderate gingivitis and 56.5% severe gingivitis (**Tab. II**).

Table III: SEVERITY OF GINGIVITIS/GENDER DISTRIBUTION

Severity	Male (%)	Female (%)
No gingivitis	02 (66.7)	01 (33.3)
Mild gingivitis	20 (57.1)	15 (42.9)
Moderate gingivitis	60 (54.6)	50 (45.4)
Severe gingivitis	122 (63.5)	70 (36.5)
Total	204 (60.0)	136 (40.0)

More males had mild and moderate and severe gingivitis. Overall mean score is 2.41, while mean score for

males is 2.48 and females 2.39 (**Tab. III**).

Table IV: SEVERITY OF GINGIVITIS/AGE DISTRIBUTION

Severity	5-9yrs (%)	10-14yrs (%)	15-19yrs (%)
No gingivitis	3 (100)	0 (0)	0 (0)
Mild gingivitis	20 (57.1)	10 (28.6)	5 (14.3)
Moderate gingivitis	22 (20.0)	68 (61.8)	20 (18.2)
Severe gingivitis	138 (71.9)	44 (22.9)	10 (5.2)
Total	183 (53.8)	122 (35.9)	35 (10.3)

A total of 71.9% of those that have severe gingivitis were in 5-9 year age group, 61.8% of those that have moderate gingivitis were in 10-14 year

age group. Children in 15-19 year age group have more likelihood of having moderate gingivitis (**Tab. IV**).

DISCUSSION

The frequency of gingivitis is high in all age groups. Clinically detectable inflammatory changes begin in childhood and increase with age. In this study, the prevalence of gingivitis is 99.2% which is comparable to the 99% recorded among Norwegian children aged 11–13 years old¹³ but higher than 54.4% documented two decades ago among Nigerian school children in Lagos¹¹ and 56.4% recorded among 6-14 year old schoolchild in Kaunas City of Lithuania⁴. This is in confirmation of the fact that gingivitis is the commonest oral diseases in children and adolescents¹⁴.

One third (32.4%) had moderate gingivitis and more than half (56.5%) severe gingivitis. This, if untreated could lead to chronic periodontitis and eventual tooth loss.

Severe gingivitis was more obvious in younger age group (5-9 years) while older age group had moderate gingivitis. It may be due to improved toothbrushing as age increases and also that gingival reactivity to irritants is affected by age¹⁵.

The dental health of Libyan children aged 7-16 years showed overall, gingival inflammation was categorised

as mild with mean gingival index as 0.05¹⁶. The study analyses oral hygiene and gingival status in a group of 12-yr-old children from the Region of Brussels showed that the mean gingivitis was 1.32 (+/- 0.03), respectively¹⁷. The mean GI in this study is 2.41. GI for male was 2.48 and female was 2.39. When compared with mean GI Score of 0.4 earlier recorded in Nigeria, It showed increasing trend in all forms of oral disease in Nigeria.

It is concluded that during certain periods the risk of developing gingivitis is relatively low, while in others the gingival tissues are more susceptible and react to bacterial irritation with inflammation¹⁸. Factors that may be responsible for these changes include differences in bacterial plaque composition, in immune defence systems and in morphology of the gingival tissues, and also factors related to tooth eruption and puberty¹⁸.

In most age groups, females demonstrate a lower frequency of gingivitis than do males even though they have periods of increased susceptibility. This may be due to better oral hygiene in females rather than physiologic differences¹⁹. In this study this similar gender difference

was appreciably noticed. This is consistent with gender variations in GI scores that was documented in a study where males were reported to have significantly higher gingival scores than females²⁰. Boys had more gingivitis than girls in a Libyan based study¹⁶.

CONCLUSION

The oral health profile of these children is poor and unacceptable. There is also reasonable age and gender variation in the severity of gingivitis documented. This suggests negative impact on education and schooling. In line with the millennium development goals, which aimed at achieving universal primary education, appropriate agencies should liaise with the right professionals to achieve the desired goals.

RECOMMENDATION

Massive oral health campaign targeted at these group of children, in the form of comprehensive educational, preventive, and therapeutic oral hygiene programmes planned from early school years.

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