ORAL HEALTH STATUS OF CHILDREN ATTENDING PRIMARY SCHOOLS IN BANGANGTE- CAMEROON

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Summary :

The oral diseases in general and dental caries in particular is according to the WHO the 4th global scourge behind cancer, heart disease and AIDS.
This study was carried out with the general objective of assessing oral health status of children attending primary schools in Bangangté in the Western Region of Cameroon.

This is a descriptive study carried out in the primary schools of the city of Bangangté. 527 pupils aged between 6 to 18 years were recruited in the study made up of 251 boys and 276 girls; 459 [6-11] years, and 68 aged [12-18] years with an average age of 8.9 (± 2.2). The prevalence of dental caries was 50.3% with a mean DMFT index of 1.5;The prevalence of dental caries among pupils [6-11] years was 51.5% with mean DMFT index of 1.3 for those aged [12-18] years. Periodontal examination showed a prevalence of 61.7% for the presence of tartar, 2.3% gingival bleeding, and 36% healthy gums. We found limited opacities affecting 1.9% of children, hypoplasies (2.3%), doubtful dental fluorosis (4.6%) and very mild fluorosis (1%) of children.

(49.7%) brush once a day and only on waking (49.3%). Only 65.5% of children have already been sensitized on oral hygiene and 88.6% have never consulted a dentist.

High sugar intake, low dental attendance, low awareness of oral hygiene, poor frequency of brushing, inappropriate dental brushing, the prevalence of dental disease in Bangangté is low..

Prevention and measures to arrest caries progression, the use of sealants, dental restorations and extractions are the treatment needs of the children. Preventive measures are highly advised.
Oral health education campaigns on good methods of oral hygiene practice would help curb this scourge.

Keywords: Oral health, tooth decay, school children, Bangangté, Cameroon.

INTRODUCTION

Oral health is not only synonymous with healthy teeth, it is an integral part of general health and is essential to well-being. Being in good oral health means not suffering from chronic oro-facial pain, oral cavity or pharyngeal (throat) cancers, lesions of the oral cavity tissue, congenital abnormalities such as hare's nose and cleft palate, and other diseases or disorders affecting the oral, dental and maxillofacial tissues, known as the maxillofacial complex [1]
Caries and periodontal disease are the most frequent oral diseases as they pose a public health problem around the world. Oral conditions in general and in particular dental caries, according to the WHO constitute the fourth global scourge behind cancer, heart disease and AIDS. [2]
The number of people with dental caries in the world s' amounted to five billion and the WHO predicts that with the changing conditions of life, its incidence is expected to increase in many developing countries. [2] In its World Oral Health Report, published in 2003, WHO expected an increase in the incidence of caries in developing countries as a result of life, growing consumption of sugary foods and drinks and inadequate exposure to fluorides. [2]
Tooth decay remains an oral health problem in most industrialized countries, affecting 60 to 90% of pupilss and the vast majority of adults [1]. It is on this bases that the WHO and the International Dental Federation (FDI) proposed that by 2020 to achieving an average score of the DMFT index less than 1.5 in children 12 years of age and 80% of 6-year-olds to be caries free [3].

In Cameroon, a study conducted on a population of children in a rural community in the northwest showed a prevalence of dental caries 77.4% [4], another study conducted on a population of school children in the district Mfou revealed a prevalence of dental caries 70.8%, with a DMFT index of 1.89 and gingivitis prevalence equal to 58.6% [5].

The current study focuses on determining the state of oral health in the children enrolled in the primary schools of the city of Bangangté.

METHODOLOGY

The study was a descriptive study conducted in Bangangté, through random sampling technique between April to June 2014.

Bangangté is a semi-urban city, the headquarters of the Nde district with 2 oral health care facilities; one owned by the government with a dental therapist and another owned by the Dental Clinic of the Faculty of Dental Surgery of the Université des Montagnes (UdM) with specialists dental services.

Four schools were selected from the map of Bangangté based on their location and included in this study were all children aged 6 years and above who provided informed consent which were read, approved, and endorsed by parents or guardians for the pupils to participate in the study.

Structured questionnaires and clinical examinations were used to collect data.

The questionnaire was used to collect data from the pupils like socio-demographic data (names, age, sex ...) , nutrition etc. The questionnaires were filled by 2 investigators.

Clinical examinations were carried out in a mobile dental clinic using bright light using disposable dental examination kits. Dental caries was detected as a cavity, a dark spot or an alteration in the enamel or a detectable softening of the floor or walls [15].

Collection of data periodontal status.

A CPI periodontal probe equipped with a 0.5mm spherical tip. In subjects less than 20 years of age. The mouth was divided into sextant and the following teeth 16, 11, 26, 36, 31, 46 were selected for examination.

This examination was done by light probing of the gingival sulcus while exerting a slight non-traumatic pressure of the tissues. The presence of tartar was marked by a roughness and gingival bleeding was observed for cases of periodontal disease.

Opacity and hypoplasia of the email :

The labial surfaces were visually inspected for structural defects other than dental fluorosis. Any food deposits on the tooth surface were removed and examined wet.

Data collection of dental fluorosis status

. Clinical examination is done by examining the teeth of the two arches to determine the presence or not of fluorotic lesions. If these are detected, the score for the person examined is based on the two most affected teeth. If these two teeth do not show the same degree of affection, the score chosen is that of the least affected tooth. Dental fluorosis was classified according to DEAN's classification with scores ranging from 0 to 5.

Data analysis was carried out with Epi-info version 3.1.6 and presented in the form of tables and charts using Microsoft excel 2010.

Ethical clearance was obtained from the Institutional review board of Universite des Mountagnes(UdM). This study was approved by the Regional Delegate for Basic Education in the West and the school administrators.

RESULTS

Sociodemographic characteristics

A total 527 children between the ages of 6 and 18 in four primary schools in the city of Bangangté were recruited. The average age of 8.9 (±2.20) years. The study population consisted of 251 (47.6%) boys and 276 (52.4%.) girls.

Oral hygiene

Table I. Frequency and practice of tooth brushing.

Frequency of brushing per day	*N(%)*

Once	*262 (49.7)*
Twice	*209 (39,7)*
Trice	*17 (3.2)*
More than 3 times	*2 (0.4)*
Never	*37 (7)*
Brushing time	
Never	*37 (7)*
In the morning before breakfast	*260 (49.3)*
After breakfast	*7 (1,3)*
Upon waking and after each meal	*38 (7.2)*
Upon waking and before bedtime	*181 (34.3)*
Before bedtime only	*3 (0.6)*
Hardware from Brushing	
Toothbrush + toothpaste	*354 (67.2)*
Toothbrush without toothpaste	*124 (23.5)*
Chewing stick + toothpaste	*1 (0.2)*
Chewing stick without toothpaste	*1 (0.2)*
Others	*8 (1.5)*

Half 262(49.7%), of the pupils brush their teeth once a day and more than a third 209(39.7%); 206(49.3%) brush I the morning before breakfast. The use of a toothbrush and toothpaste was more widespread 354(67.2%) (Table I).

Table -VII Oral hygiene practices

Oral Hygiene Practice	N (%)
Have been sensitized on good oral hygiene	340 (64.5)
Initiation to brushing teeth	446 (84.6)
Have already consulted a dentist	60 (11.4)
Attitude for Dental Pain	
Report to parents without follow-up	399 (75.7)
Consult a Dentist	34 (6.5)
Take analgesics	68 (12.9)
Taking native products	26 (4.9)

Awareness of oral hygiene is not very high 340(64.5%). The majority of children have already been introduced to brushing 446(84.6%). Visit to the dentist is very rare 60(11.4%). In case of dental pain the majority of the children inform the parents but nothing is done 399(75.7%)(Table II).

Dental pathologies:

Dental caries

Table -III Prevalence of caries by age groups and schools.

Age group (years)	*Frequency*	*Number of children with tooth decay*	*Prevalence of caries (%)*
[6-11]	*459*	*231*	*50.3*
[11-18]	*68*	*35*	*51.5*

The prevalence of dental caries was 50.3% among the *[6-11] age groups* 51.5% in the [*11-18]* age group (Table III).

Table –IV. DMFT index by age group and school.

Age group (years)	*Frequency*	*Average DMFT/dmft*
[6-11]	*459*	*1.5*
[11-18]	*68*	*1.3*

The DMFT index of the *6-11 age group was 1.5 and 1.3 for the 11-18 age groups (Table IV).*

Periodontal status, enamel defect and dental fluorosis.

Two thirds of the pupils 321(61.7%) had subgingival calculus,more than a third 189(36%) had normal gums, 12(2.3%) had bleeding gums.

State of fluorosis, opacities and enamel hypoplasia

Limited opacities were experienced 10(1.9%) of the pupils and enamel hypoplasia in 12(2.3%).

Dental fluorosis

According to dean index, Dental fluorosis 5(1%) was very slight and doubtful 22(4.6%).

Nutrition

Table V. Nature of cariogenic food and drink consumed.

Age	*Cariogenic foods N(%)*	*Cariogenic beverages N(%)*
[6-11 [	*375 (82)*	*35 (7.6)*

[11-18 [	*58 (85.3)*	*10 (2.1)*

A majority of the pupils 375(82%) 6-11 years old and 11-18 years old 58(85.3%) consumed cariogenic foods. Cariogenic beverages consumption was very low (Table V).

Among the cariogenic foods consumed were candies 197(37.9%), sweet biscuits 130(24.8%) and 123(23.5%).

Table VI. Treatment needs.

Treatment Needs for age groups	*Prevention*	*Dental Sealant*	*Simple restorations*	*Tooth Extraction*
[6-11] years	*53 (22.9)*	*37 (16)*	*127 (55)*	*50 (21.7)*
[12-18] years	*15(42.9)*	*4 (11.4)*	*18 (47.4)*	*5 (14.3)*

Half of the pupils 127 (55%) needed dental fillings amongst children aged 6 to 11 years and 18 (47.4%) in children 11 to 18 years (Table VI).

DISCUSSION

Sociodemography

This study showed a predominance of females than males. This reflects the proportion of students in the primary schools in Cameroon where the females are predominant. A similar study reported in Cameroon by Azodo and Agbor (2015) who stated that females are predominant in primary schools(4,6).

Dental Health

The current study showed that the prevalence of dental caries is still very low in Bangangte a typical semi-urban area. Mulu and colleagues (2014) also reported a low caries prevalence rate in Ethopia [6].

Though the DMFT index in this study was low because it the index was affected by the high prevalence of dental caries. The fillings in these children are non-existent because they do not consult or very little the dentist in case of decay and even when it causes pain.

Studies conducted in Cameroon by Majoli (2003) found a caries prevalence of 70.8% for the and a DMFT index of 1.89 [5]. A study carried out in Congo Brazzaville by Okoko (2013) reported a prevalence the school decay of around 53.4%, with a DMF index of 2.06 [7]. Songo (2012) in a study of children attending hospital units in Kinshasa, reported a caries prevalence of 79.1% with an average DMFT index of 3.23 in children 5 years and DMFT 1.80 for children 12 years [8].

`Diet can also be attributed as one of the major causes of caries as most of the children were found to consume cariogenic foods and drinks especially in a small town like Bangangte that is undergoing a demographic transition from a semi-urban to an urban city. In a study conducted by Enwonwu (2004), it appears that the consumption of sugary foods tend to increase in urban populations in developing countries. [25]

The use of pain killers and indigenous products for pain management has been attributed to tooth loss and local or general infectious which are common complications affecting children's health.

An analysis shows that three independent variables are correlated with the development of new carious lesions .In the current, this prevalence is somewhat higher in children aged 11 to 18, an age where the children are a little more independent and cannot control intake of refined carbohydrates if not well informed. This is because they are in possession of pocket money to go to school and can buy snacks.

Periodontal status.

Previous studies conducted in Cameroon by Attin (1999) show that 37.7% of children bleeding on probing and 49.9% have tartar on the teeth [4], China Zhang S (2014) found a prevalence 71% for gingival bleeding and 58% for the presence of calculus in Blang primary school children of the city of Yunnan [10,11].

In the current study, 93% of pupils say they brush their teeth and 84.6% have been educated on dental brushing. From the above results, it can be deduced that the oral health practices of these children is below standard. It is also advisable for parents to supervise them to brushed their teeth properly.

Dental fluorosis, opacities and hypoplasia of the email .

Dental hard tissues defects such as fluorosis ,opacities and hypoplasia were very low among school children in the current study. These results of our current study can be explained by the fact that the drinking water comes mainly from the tap, well water and rainfall. Because the topography of Bangangte is mainly a highland, most of the fluoride in the soil is being leached.
This is contrary to another carried out in northern Namibia by Floor (2010) showed a prevalence of dental fluorosis from 65.8% in pupils with a community fluorosis index of 1.41, [13] among refugee children in West of the Sahara, Almerich-Silla (2008) found a prevalence of 15.6% for moderate fluorosis, 7.8% for severe fluorosis in children 6-7 years and in children 11-13 years it was 36.9% for moderate fluorosis and 27.4% for severe fluorosis [14].

Oral hygiene practices

Morethan three quarters of the children in the current study brush their teeth daiy. This is similar to the study of Songo who reported that the use of toothbrush and toothpaste at a rate of 96.5% among children attending hospital units in the city of Kinshasa. [10]

Also he majority of children in the current study brush their teeth once a day mainly before meals and 7% do not brush their teeth for several reasons but it is certainly not due to ignorance and lack of finances to purchase toothbrushes and toothpaste This is similar to a study carried out in Cameroon by Majoli (2003) where 74.8% of children brushed their teeth once a day and 81.9% before meals [5].In children of Kinshasa, the majority of children also brushed once or twice per

day, or 73.5% once a day and 19.4% twice daily[10] . The right brushing technique, the moment and the frequency are required for the improvement of good oral health care.

Also in the current study, it was found out that children use other materials like chewing sticks, charcoal and wood ashes for their oral health care. Irrespective of the high sensitization rate,these practices are still carried out. It is recommended to investigate the reasons for adequate measures to be taken.

The oral health seeking behavior of children plays and important role in improving the oral health status of individuals. The fact that most children have never consulted a dentist coupled with the facts that parents have a low income and the high cost of dental care could be the reasons for low level of oral health education due to lack of information.

Treatment needs

In this population, with a relatively high prevalence of caries, treatment needs have been manifold and diverse. Half of the pupils 127 (55%) needed dental fillings amongst children aged 6 to 11 years and 18 (47.4%) in children 11 to 18 years.It was also noticed that the children will need preventive measures like dental sealants and good brushing attitude to be emphasized. Songo BF (2012) assessed the need for care of 52.3% of children requiring at least one filling with an average of 1.3 fillings per child in temporary teeth and 77.2% of children requiring at least one filling With an average of 2.3 fillings per child, and found that 83% of children require at least one extraction with an average of 2.26 extractions per child in permanent teeth and 51.8% with an average of 1.6% d In permanent teeth in children attending hospital training in Kinshasa [10].

CONCLUSION

Irrespective of high sugar intake, low dental attendance, low awareness of oral hygiene, poor frequency of brushing, inappropriate dental brushing, the prevalence of dental disease in bangangte is low..

Prevention and measures to arrest caries progression, the use of sealants, dental restorations and extractions are the treatment needs of the children. Preventive measures are highly advised.

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