

# Pattern of Presentation of Oral Health Conditions among Children at the University of Port Harcourt Teaching Hospital (UPTH), Port Harcourt, Nigeria

## Condições de Saúde Bucal entre as Crianças Atendidas no Hospital Universitário da Universidade de Port Harcourt (UPTH), Port Harcourt, Nigéria

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### RESUMO

**Objetivo:** Avaliar as condições de saúde bucal de crianças atendidas na Clínica Odontológica Infantil.

**Método:** Um estudo retrospectivo de 30 meses foi conduzido em 462 crianças - 222 (48,3%) do sexo masculino e 238 (51,7%) do sexo feminino, com até 16 anos de idade atendidas no Centro de Odontologia da Universidade de Port Harcourt Teaching Hospital, Port Harcourt, na Nigéria.

**Resultados:** A idade média dos pacientes foi de 8,5+3,8 anos. Dezenove (4,1%) crianças foram atendidas para exame odontológico de rotina, não existindo consultas odontológicas antes de um ano de idade. Duzentos e quinze crianças (46,2%) possuíam lesões de cárie dentária, enquanto 91 (19,7%) apresentavam gengivite crônica. Apenas 42 crianças (9,1%) foram atendidas devido a traumatismos dentários. Quarenta e seis crianças (10,0%) foram encaminhadas para tratamento ortodôntico. Houve uma predileção do sexo feminino para a cárie dentária (58,1%), enquanto os meninos apresentaram maior frequência de doença periodontal.

**Conclusão:** Há uma deficiência nos cuidados dentários que é refletido pela proporção de crianças que compareceram ao ambulatório para visitas de rotina e pela gravidade de algumas das condições dentárias apresentadas sugerindo uma procura tardia pelos serviços de saúde. A consulta odontológica precoce deve ser incentivada, pois proporciona uma base sobre a qual a educação preventiva em saúde e cuidados de saúde bucal podem ser implementados.

### ABSTRACT

**Objective:** To evaluate the spectrum of oral health conditions that presented at the Child Dental Health Clinic.

**Methods:** A 30-month retrospective study of oral health conditions of 462 children, 222 (48.3%) males and 238 (51.7%) females, aged 16 years and below seen at the Dental Centre, University of Port Harcourt Teaching Hospital, Port Harcourt, Nigeria.

**Results:** The average age of the patients was 8.5 + 3.8 (SD) years. Nineteen (4.1%) children attended for routine dental check-up and there were no routine visits before the age of one year. Two hundred and fifteen (46.2%) of the children were diagnosed with dental caries, while 91 (19.7%) of the children had chronic gingivitis. Only 42 (9.1%) children attended due to traumatic injuries to the dentition. Forty six (10%) were referred for orthodontic management. There was a female predilection for dental caries (58.1%) while the males were found to have more periodontal diseases.

**Conclusion:** There is a poor dental awareness as reflected by the proportion of children that attended the clinic for routine visits and the severity of some of the dental conditions suggesting late presentations. An early age dental visit should be encouraged since it provides a foundation upon which a lifetime of preventive education and oral health care can be developed.

### DESCRITORES

Saúde bucal; Criança; Educação em saúde.

### KEYWORDS

Oral health; Child; Health education.

## INTRODUCTION

Institution of preventive, interceptive and corrective dental measures early in life improves the oral health condition and promotes the general well being of a child patient<sup>1</sup>. Such preemptive efforts prevent discomfort that may result from complicated oral health diseases, reduce cost expendable on complex dental treatment; both in terms of time and money<sup>1-5</sup> and forestalls school absenteeism associated with oral health morbidity<sup>6</sup>.

Hence, professional dental organizations such as American Academy of Pediatric Dentistry (AAPD), Canadian Dental Association (CDA) and American Dental Association (ADA) advocate early paediatric first dental visit and periodic subsequent visits<sup>1,7</sup>. They proposed that children should have their first dental visit within 6 months post eruption of the first primary tooth. Subsequent visits may be scheduled at 6 - month intervals depending on each child's needs and risk exposures.

This will enable the impartation of good paediatric oral hygiene practices, encourage healthy dietary habit, facilitate proper monitoring of the developing dentition and occlusion, prevent dentofacial accidental injuries and identify oral habits that may be detrimental to occlusal development and general health of the oral tissues. In fact, some authorities believe that preventive dental care for a child should commence within four months of intrauterine life and incorporated into the maternal antenatal care protocols by way of oral health education<sup>8,9</sup>.

While infants and toddlers exposed to early preventive dental care are known to have healthier oral cavities compared to those without any prior dental care, it does not appear that such preemptive practice have been widely adopted all over the world. Several recent studies still reported dental caries and pain as the commonest reasons for paediatric dental visits<sup>10-13</sup>, while only few children attended for routine dental check up<sup>10,11,14</sup>.

The Dental Centre was upgraded to a Teaching Hospital status about three years ago following the start of a new dental school in the University of Port Harcourt and the subsequent employment of Specialists in different fields of Dentistry. The dental centre has installation of a number of modern hi-tech equipment. Therefore, the Department of Child Dental Health of the University of Port Harcourt Teaching Hospital is a relatively new centre for Paediatric Dental Care in the South -South region of Nigeria. The Department is at the moment faced with the tasks of assessing the paediatric oral health needs of her consumer communities and formulating appropriate

preventive and therapeutic health plans suited to those needs.

Hence, this study is carried out to assess the pattern of oral health needs of paediatric patients presented at the Child Dental Health Clinic. This will be helpful in formulating appropriate treatment plan and will form a data base where further research can be carried out.

## METHODOLOGY

A 30 - month (March 2008 - August 2010) retrospective review of clinical records of dental patients aged 16 years and below was conducted at the Child Dental Health Clinic at the Dental centre of the University of Port Harcourt Teaching Hospital.

Information was retrieved from the case notes at the dental records. Data collected were the age of the patient as at their last birthday in years, sex of patients and the diagnosis made. The diagnoses were broadly divided into dental caries and its sequel (reversible/irreversible pulpitis, apical periodontitis and dentoalveolar abscess), periodontal problems (acute/chronic, generalized/localized), traumatic dental injuries, eruption anomalies, malocclusion and other aesthetic/morphological concerns, and others (aphthous ulcers, osteomyelitis, pyogenic granuloma, cleft palate and recurrent dentigerous cyst). The diagnoses of the oral conditions were made following the history, oral examination, radiographic and other relevant investigations.

Descriptive statistics such as mean age, sex frequency distribution were used in analyzing the data using the Statistical Package for Social Sciences (SPSS) version 17.0, Chicago, Illinois, USA.

## RESULTS

There were 462 children and adolescents; 222 (48.3%) males and 238 (51.7%) females studied while the gender of two of the children was not very clear from the records. The age ranged from 0.02 years (8 days) to 16 years and the mean age was 8.5 + 3.8 (SD) years. The distribution of oral conditions of the patients is shown in Table 1.

Nineteen (4.1%) of the patients came primarily for routine dental visits. There was no record of routine dental visits before or by their first birthday.

Dental caries and the sequelae were found in 215 (46.2%) of the patients with 364 carious cavities. One hundred and nineteen (55.34%) of these had the sequelae of dental caries (reversible and irreversible pulpitis,

apical periodontitis, and dento alveolar abscesses). One hundred and twenty five (58.4%) of the patients with

dental caries and the sequelae were females as shown in Table 2.

**Table 1. Distribution of oral conditions among the patients.**

Variable	Gender					
	Males		Females		Total	
	n	%	n	%	n	%
Dental Caries & the Sequelae	90	19.5	125	27.1	215	46.2
Periodontal Diseases	60	13.0	44	9.5	104	22.5
Traumatic Injuries	24	5.2	18	3.9	42	9.1
Eruption Anomalies	36	7.8	41	8.9	77	16.7
Orthodontic Referrals	26	5.7	20	4.3	46	10.0
Tooth Discolouration	5	1.1	2	0.4	7	1.5
Others	2	0.4	10	2.2	12	2.6

\*some patients had more than one condition.

**Table 2. Distribution of dental caries and the sequelae according to gender.**

Gender	Dental Caries		Reversible Pulpitis		Irreversible Pulpitis		Apical Periodontitis		Dentoalveolar Abscess		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
	Male	36	16.7	9	4.2	16	7.4	11	5.1	18	8.4	90
Female	60	27.9	16	7.4	13	6.1	19	8.8	17	7.9	125	58.1
Total	96	49.7	25	11.6	29	13.5	30	14.0	35	16.3	215	100.0

Periodontal problems such as chronic marginal gingivitis (general and localized) acute gingivitis (general and localized) and periodontal abscess were found in 104 (22.5%) of these patients. Sixty (57.7%) of these patients were males as shown in Table 3.

Forty two (9.1%) children presented with traumatic injuries; 26 (61.9%) of them sustained dental fractures and 16 (38.1%) with trauma to supporting tooth structures. As shown in Table 4.

**Table 3. Distribution of periodontal diseases according to gender.**

Gender	Chronic Marginal Gingivitis		Localized Chronic Marginal Gingivitis		Acute Gingivitis		Eruption Gingivitis		Periodontal Abscess		Acute Herpetic Gingivostomatitis		Total	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
	Male	49	47.1	5	4.8	1	1.0	2	1.9	3	2.9	0	0.0	60
Female	40	38.5	0	0.0	1	1.0	1	1.0	1	1.0	1	1.0	44	42.3
Total	89	85.6	5	4.8	2	1.9	3	2.9	4	3.9	1	1.0	104	100.0

**Table 4. Traumatic injuries to dental and supporting tissue.**

Gender	Dental		Supporting Tissues		Total	
	n	%	n	%	n	%
	Male	16	38.1	8	19.1	24
Female	10	23.8	8	19.1	18	42.86
Total	26	61.9	16	38.1	42	100.0

Forty six (10.0%) of these patients were referred for orthodontic management. Twenty six (5.6%) of them were males and 20 (4.3%) were females. Six (13%) of these patients had oral habits, 7 (15.2%) of the patients had crossbites. 72.7% had Class I molar relationship, 15.9% had Class II division I (11.4%) and 4.5% had Class II division 2. Class III accounted for 2.3% while 9.1 % had asymmetric molar relationships. Dentoalveolar discrepancy was found in 19 (41.3%) of these patients, 9 (19.6%) had spacing while 10 (27.7%) had crowding.

There were 46 (10%) children presenting with retained primary dentition predominantly the central incisors. Four of the children with prolonged retention of primary retained teeth had displaced erupting succedaneous teeth. Seventeen of them had more than one primary tooth retained. Detail is shown in Table 5. There were two (0.4%) children with supernumerary teeth (mesiodens and supplemental tooth). There was one (0.2%) baby with a natal tooth.

**Table 5. Distribution of eruption anomalies according to gender.**

Gender	Retained		Displaced and Erupted		Unerupted/delayed		Eruption Cysts		Impacted		Total	
	Primary Teeth		Permanent Teeth		permanent Teeth		n	%	n	%	n	%
	n	%	n	%	n	%						
Male	21	27.3	8*	10.4	2	2.6	4	5.2	1	1.3	36	46.8
Female	25	32.5	10*	13.0	3	3.9	1	1.3	2	2.6	41	53.3
Total	46	59.7	18*	23.4	5	6.5	5	6.5	3	3.9	77	100.0

\*1 male and 3 females had retained primary and displaced erupting permanent teeth.

There were 7 (1.5%) children with tooth discolouration, 4 (57.1%) extrinsic tooth discolourations and 3 (42.9%) intrinsic tooth discolourations which include Turners tooth and chronologic enamel hypoplasia.

There were 12 (2.6%) other conditions which included apthous ulcers, osteomyelitis, pyogenic granuloma, cleft palate and recurrent dentigerous cyst.

## DISCUSSION

Oral health is integral to general health since oral conditions can interfere with eating and adequate nutritional intake, speech, self esteem and daily activities<sup>15,16</sup>. Making sure that children receive the oral health care services they need is therefore crucial to ensure that they have good general health and a positive quality of life and can live up to their academic potential<sup>2,16-18</sup>. Health and success in schools are interrelated; Schools cannot achieve their primary mission of education if students are not healthy and fit physically, mentally, and socially<sup>19</sup>.

Dental attendance is an important aspect of promoting oral health. Although American Academy of Pediatric Dentistry (AAPD)<sup>1,2,6,9</sup> recommends that the first visit and examination should be at the time of eruption of the first tooth and not later than 12 months of age, in this study the children only visited when they had symptoms and those who came for routine visits were older than 1 year. Only a few patients (4.1%) came for routine dental checks. This could be a reflection of low awareness of oral health in this environment which is similar to that reported in, Kenya (3.6%)<sup>10</sup> and India (1.26% and 5.12% in a retrospective and prospective study respectively)<sup>11</sup> and Saudi Arabia (8.6%)<sup>14</sup>.

The average age of the children that attended the clinic was 8.5 years which was comparable to the 9 years of the Kenyans<sup>10</sup>. In this study there was a slightly more demand for dental services by the females 51.7% which is comparable to the 51.89% in Kenyans<sup>10</sup> and 50.57% in Nigerians<sup>13</sup>.

The two most common oral diseases in Nigerians have been reported to be dental caries and periodontal diseases<sup>20</sup>, and this was displayed in this study. Dental

caries has been reported to be the commonest chronic childhood disease being five times more common than asthma<sup>16</sup>. Dental caries was found to be the commonest reason for presenting at the clinic. This was also reported by Osuji<sup>13</sup> where 59% of the children that attended the hospital for dental conditions had dental caries. However, it was lower than the incidence of caries in the 73.8% reported in the Kenyans<sup>10</sup> and higher than the 27.64% of that reported in a Japanese population<sup>21</sup>. In this study females were found to have a higher incidence of dental caries than males though not statistically significant. This pattern was also reported in a study done on prevalence of nursing bottle caries in an Indian population<sup>22</sup>. This may be attributed to the dietary habits of the females and pattern of tooth eruption<sup>23</sup>. It has been reported that females tend to acquire their teeth at an earlier age than males. In an epidemiological study in Uganda<sup>24</sup>, 40% of the children had dental caries and female had a significantly higher caries than the males.

Of the 22.5% of the children with periodontal diseases; 19.7% of these were gingivitis which was lower than that reported in the Kenyans<sup>10</sup> where the incidence of gingivitis was reported to be 34.4%. Traumatic dental injuries were found in 9.1% of these children which was lower than the 17%<sup>13</sup> and 13.66%<sup>21</sup>. However, our present figure is higher than the 6.4% reported by previous author<sup>10</sup>. The orthodontic referrals as a result of malocclusion were few (10%), comparable to the 10% malocclusion cases observed previously<sup>13</sup> and less than the 25.4%<sup>10</sup> and 15.12%<sup>21</sup> reported in other studies.

## CONCLUSIONS

- 1) There is a poor awareness of oral health as reflected by the proportion of children that attended the clinic for routine visits;
- 2) The cases seen covered the common oral health conditions but late presentations were obvious as reflected in the severity of most of the cases.

## RECOMMENDATIONS

A) Oral Health Care is a critical component of health care; it should be included in the design of Community programmes;

B) Oral health education programmes should be targeted towards specific groups such as school children, nursing and expectant mothers, school teachers and parents especially mothers. This can be achieved through the following:

i. School visits by dental health workers;

ii. Organized Oral Health Education at ante and post natal clinics for the parents especially the mothers; and

iii. Using Parents Teachers Association (PTA) fora in schools to enlighten the parents' and the teachers.

C) Epidemiological studies on oral health conditions in the environment (such as school children) to know whether the presentation by the demand population is a reflection of the general populace.

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