

## ORIGINAL ARTICLE

## Compendium of Oral Pathologies in Children Presenting to A Tertiary Hospital in Nigeria

Chisom A NRI-EZEDI<sup>1</sup>  
Ogochukwu C OFIAELI<sup>1</sup>  
Ezinne I NWANELI<sup>1</sup>  
June U UGOCHUKWU<sup>2</sup>  
Thomas O ULASI<sup>1</sup>  
Amobi L ILIKA<sup>3</sup>

<sup>1</sup>Department of Paediatrics  
Faculty of Medicine

<sup>2</sup>Dental Clinic,

<sup>3</sup>Department of Community  
Medicine & Primary Health  
Care  
Faculty of Medicine

Nnamdi Azikiwe University  
Teaching Hospital Nnewi  
Anambra State, NIGERIA

**Author for Correspondence**

Dr Chisom A NRI-EZEDI  
Department of Paediatrics  
Faculty of Medicine  
Nnamdi Azikiwe University  
Teaching Hospital Nnewi  
Anambra State, NIGERIA

Phone: +234 803 506 8197

Email:

chisomnrizedi@gmail.com

Received: October 10<sup>th</sup>, 2019

Accepted: November 19<sup>th</sup>, 2019

## DISCLOSURE

The authors declare no  
conflict of interest, and  
received no financial  
support for the study

**ABSTRACT**

**Background:** Oral diseases are one of the most common non-communicable diseases. They are also the most neglected particularly in children.

**Objective:** To determine the pattern and trend of oral diseases among children who presented in the dental clinic of a Nigerian Tertiary hospital over 58 months.

**Methodology:** A retrospective study that assessed for oral diseases among children using the dental health records.

**Results:** 1104 cases presented at the dental clinic, comprising 546 males and 558 females with a ratio of 1:1.02. The mean age of the subjects was 10.6 years  $\pm$  4.2 with an age range of 1 month to 17 years. Close to ninety-eight percent of cases reviewed were symptomatic. Across all age groups, dental caries and its sequelae was observed in 62.2% of cases and this was independent of age group and year of presentation ( $p < 0.0001$ ).

**Conclusion:** An increasing trend of oral diseases was observed annually with the leading diagnosis been dental caries and its sequelae.

**Keywords:** Oral health, Child, Nigeria, Dental Caries

## INTRODUCTION

Oral health is an integral part of general health. Globally, oral diseases are among the most common non-communicable diseases affecting at least 3.85 billion persons.<sup>1,2</sup> They are also the most ignored.<sup>3</sup>

In Nigeria, previous reports have consistently demonstrated the presence of oral diseases in over a third of its paediatric population.<sup>2,3,4</sup> This surge is generally linked to a broad lack of awareness and poor oral health seeking behaviour among the populace.<sup>4</sup> Anecdotal evidence suggest other factors such as increase in cost of health care with poor national coverage of the health insurance scheme; non-functional school oral health programmes; increase in consumption of relatively affordable sugary meals; lack of affordable fluoridated toothpastes and drinking water; and a general lack of interest among health workers in matters concerning oral health.<sup>4,5</sup> Furthermore, there is a relative scarcity of skilled dental practitioners and properly equipped facilities around the country particularly in the rural setups which overall, renders dental care to be largely inaccessible to the average child.<sup>4</sup>

Failure to address these oral health concerns in children in a timely and efficient manner can impede growth, development and neurocognitive function as oral diseases can impair the ability to chew feeds with resultant failure to thrive, chronic pain, sleep deprivation, absent school days and poor academic performance.

Determining the burden of these oral diseases in children remains a vital step towards mitigating its impact on morbidity and mortality.

## METHODOLOGY

A retrospective study was conducted among children who presented at the dental clinic of Nnamdi Azikiwe University Teaching Hospital (NAUTH) Nnewi Anambra state, South-East Nigeria. The dental clinic in NAUTH was established in 2012 to cater for all oral pathologies in both adults and children. The data for this study were retrieved from the dental health records beginning from February 2012 to December 2016, a total of 58 months.

Variables that were retrieved include date of presentation, age, sex and diagnoses. The diagnoses were made by skilled dental specialists following clinical assessments and appropriate investigations.

Analysis of data was done using Statistical Package for the Social Sciences (SPSS) software version 21 and significance set at  $p < 0.05$ .

## RESULT

A total of 1104 cases under the age of 18 years were seen at the dental clinic during the study period. This includes 546 males and 558 females, giving a male: female ratio of 1:1.02. The mean age of the subjects was 10.6 years  $\pm$  4.2 with an age range of 1 month to 17 years.

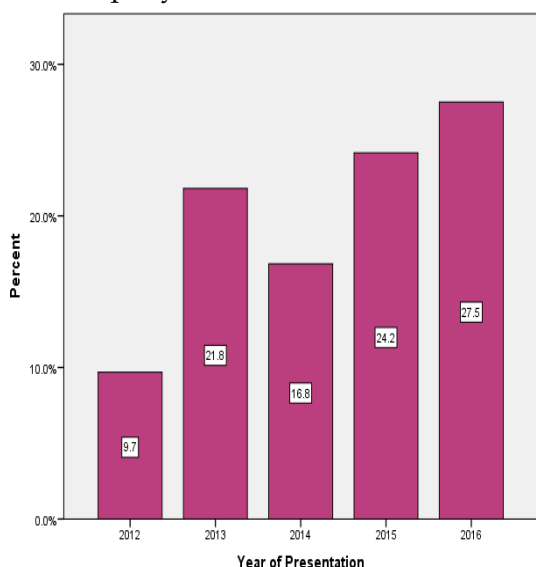
**Table 1.** Age and sex distribution of subjects

Age (Years)	Males N (%)	Females N (%)	Total N (%)
Under 5s	51 (4.6)	30 (2.7)	81 (7.3)
5-9	211(19.1)	172 (15.6)	383 (34.8)
10-14	177 (16.1)	198 (17.9)	375 (33.9))
>15	107 (9.7)	158 (14.3)	265 (24.0)
<b>Total</b>	<b>546 (49.5)</b>	<b>558 (50.5)</b>	<b>1104 (100.0)</b>

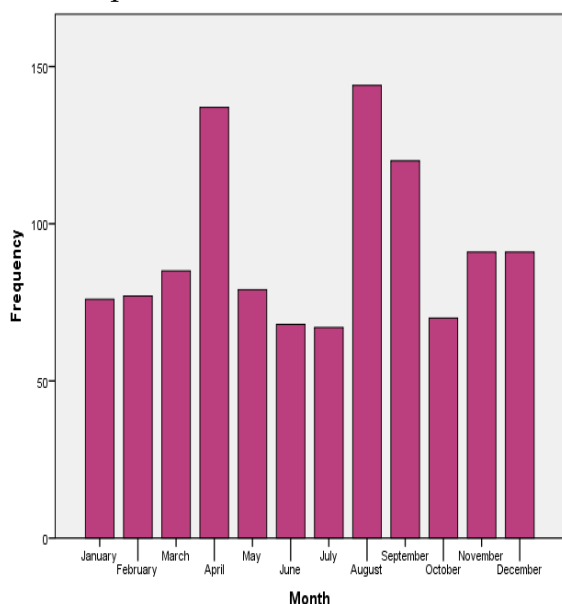
**Trend in Presentation of Cases**

A steady rise in the presentation of cases was observed annually except for the year 2014. Almost a third of all patients presented in the year 2016 (27.5%) as seen in Figure 1; with majority presenting in the months of April, August and September (Figure 2).

**Figure 1.** Trend in presentation of oral diseases per year



**Figure 2.** Trend in presentation of oral diseases per month



**Table 2.** Distribution of oral disease among subjects

Oral Disease Category	Freq	%
<b>Caries and its Sequelae</b>		
Periodontitis	444	40.2
Caries	124	11.2
Pulpitis	97	8.8
Others	22	2
<b>Total</b>	<b>687</b>	<b>62.2</b>
<b>Orthodontics</b>		
Retained Teeth	135	12.2
Malposition	4	0.4
Others	19	1.7
<b>Total</b>	<b>158</b>	<b>14.3</b>
<b>Minor Oral Surgery</b>		
Abscess	72	6.5
Impacted Tooth	19	1.7
Exo	10	0.9
Cyst	6	0.6
Others	34	3.1
<b>Total</b>	<b>141</b>	<b>12.8</b>
<b>Periodontal Disease</b>		
Pericoronitis	22	2
Scaling/Polishing	21	1.9
Mobile Tooth	12	1.1
Others	9	0.8
<b>Total</b>	<b>64</b>	<b>5.8</b>
<b>Major Oral Surgery</b>		
Trauma	36	3.3
Others	18	1.6
<b>Total</b>	<b>54</b>	<b>4.9</b>

**Pattern of Oral Diseases in Children**

During the duration of the study, almost all patient visits made to the dental clinic were symptomatic (97.8%).

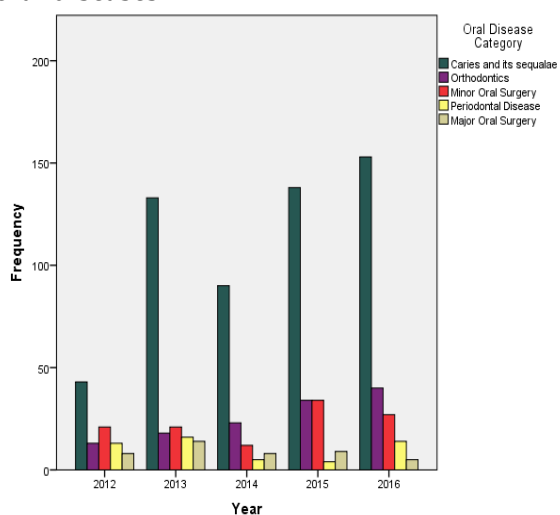
Dental Caries and its sequelae predominated in all the years of

presentation and across all age groups. ( $p < 0.0001$ ) respectively (Table 2, Figure 3 and Figure 4)

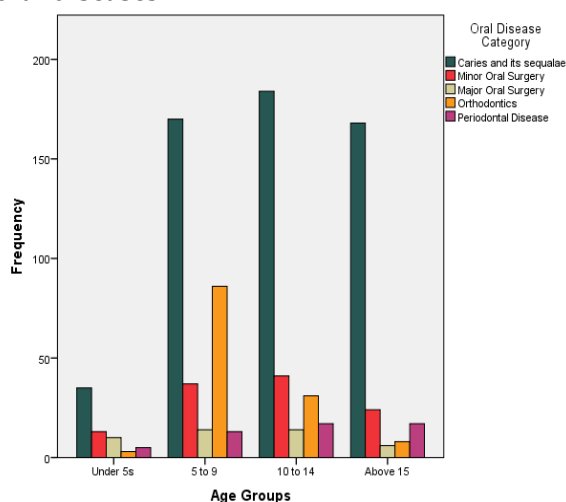
With increasing age, there was an increased odd of developing caries and its sequelae and this was independent of gender ( $p = 0.001$ ).

Although females were more afflicted in the caries group, this was not statistically significant. ( $p = 0.789$ ).

**Figure 3.** Annual distribution of categorized oral diseases



**Figure 4.** Age distribution of categorized oral diseases



DISCUSSION

This study was carried out to determine the pattern and trend of oral diseases in children that presented at the dental clinic of a Nigerian Tertiary Hospital since its creation in February 2012 to December 2016.

In this retrospective study, there were slightly more females than males who presented in the dental clinic which was consistent with findings from other similar studies done in Port-Harcourt and Enugu.<sup>6,7</sup> This can be attributed to females having a lower pain threshold than males thus leading to more visits.<sup>8</sup>

The mean age of the children who presented at the dental clinic was 10.6 years with the majority in the age group of 5-9 years. This was in agreement with the study conducted in a tertiary hospital in Port-Harcourt in which children aged 5 to 8 years were the most prevalent group that presented during the study period.<sup>7</sup> However the mean age was found to be on an average 2 years younger than this present study, which may be attributed to a better awareness and high social class amongst the residence in that locality.

Almost all cases who presented at the hospital were found to be symptomatic which is similar to that observed in other local studies.<sup>6,7,9,10</sup> This is in contrast to the global standard which advocates for regular oral check-up and care in a well-child, a practice which is yet to be adopted in Nigeria notwithstanding the existence of an oral health policy with a target to promote oral health awareness in 70% of its populace by 2015.<sup>3,11</sup>

A steady annual rise in the hospital prevalence of oral diseases was demonstrated except for the year 2014 which

could be explained by the protracted industrial action among health workers which had taken place during the time specified. More than a third of the cases presented in the months known as school holiday seasons (April and August), which was similar to previous reports from other local findings. This depicts a “scholastic” pattern in the presentation of oral diseases in children.<sup>6,7,10</sup> However, considering that pain is one of the most distressing symptoms in most oral diseases, a decrease in case presentations observed during school periods may be ascribed to the non-pharmacogenic role proffered during engagement in school activities towards pain control.<sup>12,13</sup>

Dental caries and its sequelae were predominantly the leading disease entity observed yearly and across age groups. Similar observations were noted globally and in local studies conducted in Southern region of Nigeria.<sup>2,6,7,9,10</sup> Majority of the subjects with caries in this study were females, and this finding compares favourably with the works done by Folaranmi *et al.*<sup>8</sup> In contrast, in a study conducted among primary school children, males were significantly found to have an increased odds of developing caries.<sup>9</sup> With increasing age, the odds of developing caries doubled in older adolescents. A similar finding was reported in a global report.<sup>2</sup> This trend may be secondary to the slight gain in financial freedom and independence observed in this age group which can influence improper oral health choices. In contrast to this finding, Adeniyi and co-workers illustrated a decreased odds of developing dental caries with increasing age among school children in Lagos.<sup>14</sup>

## CONCLUSION

An annual increase in the burden of oral pathologies was observed among children who presented at the dental clinic of a tertiary hospital located in South-East Nigeria, with dental caries and its sequelae as the most prevalent oral pathology. This rise can be attributed to an increased awareness among the local residents of the oral health services offered by the tertiary centre. Furthermore, this study illustrates the need to strengthen and implement the nation’s existing but redundant oral health policy as a means of promoting a unified strategic template aimed at reducing the morbidity and mortality associated with oral diseases in children.

## REFERENCES

1. Oral health [Internet]. [cited 2019 Oct 8]. Available from: <https://www.who.int/news-room/fact-sheets/detail/oral-health>
2. GBD 2016 Disease and Injury Incidence and Prevalence Collaborators T, Abajobir AA, Abate KH, Abbafati C, Abbas KM, Abd-Allah F, *et al.* Global, regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016. *Lancet* (London, England). 2017; 390:1211-59.
3. WHO Prevention is better than treatment. WHO. 2015;
4. Akpata ES. Oral health in Nigeria. *Int Dent J* 2004; 54:361-366.
5. Folayan MO, Chukwumah NM, Onyejaka N, Adeniyi AA, Olatosi OO. Appraisal of the national response to the caries epidemic in children in Nigeria. *BMC Oral Health* 2014; 14:76.
6. Eigbobo J, Etim S. Trends in dental treatment of children at the University of Port Harcourt Teaching Hospital, Port Harcourt, Nigeria. *Sahel Med J* 2016; 19:220.

7. Folaranmi N, Akaji E, Onyejaka N. Pattern of presentation of oral health conditions by children at University of Nigeria Teaching Hospital, Enugu: a retrospective study. *Niger J Clin Pract* 2014; 17:47-50.
8. Vierhausl M, Lohaus A, Schmitz A-K. Sex, gender, coping, and self-efficacy: Mediation of sex differences in pain perception in children and adolescents. *Eur J Pain* 2011; 15:621.e1-621.e8.
9. Denloye OO, Bankole OO, Onyiaso CO. Dental health service utilization by children seen at the University College Hospital-an update. *Odontostomatol Trop* 2004; 27:29-32.
10. Osuji O. Utilization of dental services by children at the university college hospital, Ibadan, Nigeria. *Odontostomatol Trop* 1990; 13:97-99.
11. National Oral Health Policy 2012.pdf - Google Drive [Internet]. [cited 2019 Oct 8]. Available from: <https://drive.google.com/file/d/0B1DAmtM1BcbMdDRuVGpEbUFjczQ/view>
12. Srouji R, Ratnapalan S, Schneeweiss S. Pain in Children: Assessment and Nonpharmacological Management. *Int J Pediatr* 2010; 2010.
13. Goes PSA, Watt R, Hardy RG, Sheiham A. The prevalence and severity of dental pain in 14-15 year old Brazilian schoolchildren. *Community Dent Health* 2007; 24:217-24.
14. Adeniyi AA, Agbaje O, Onigbinde O, Ashiwaju O, Ogunbanjo O, Orebanjo O, et al. Prevalence and pattern of dental caries among a sample of nigerian public primary school children. *Oral Health Prev Dent* 2012; 10:267-274.