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Pattern of Presentation, Reason for Presentation and Treatment of Paediatric Dental Patients at the University of Calabar Teaching Hospital: A Three-Year Review

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Abstract

Background: Dental attendance is regarded as one of the essential pointers to oral health education and awareness. Dental visit of children is often dependent on factors related to the parents/caregivers' health seeking behaviour. Routine dental attendance has been shown to be associated with better oral health care. Objective: To assess the pattern of presentation, reason for presentation and treatment of paediatric dental patients at a tertiary institution in Nigeria.

Methodology: It was a retrospective study which involved data retrieval from the patient's record books from July 2018 to June 2021. Data on age, gender, presenting complaint, impression/diagnosis and treatment were collected from the dental records and analysed using IBM SPSS statistics version 22.

Result: Out of 6645 records, complete data of 329(5%) children were used for the study. Children within the age range of 6-12 years old were in the majority, 203(61.7%). Female children attended more 179 (54.4%) compared to the males 150 (45.6%). Pain was the major reason for dental attendance (41%) and the commonest diagnosis made was sequelae of dental caries 93 (23.4%). The treatment offered most was tooth extraction 124 (37.7%), while the least was apexogenesis 2 (0.6%). The relationship between age and sequelae of dental caries was statistically significant.

Conclusion: Children within the mixed dentition stage attended the clinic more because of complications of dental caries. Pain was the major complaint, and the majority of the children lost their teeth because they presented late.

Keywords: Paediatric Patient; Dental Attendance; Treatment.

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Quick Response Code:

Introduction

Oral health is a key indicator of overall health, well-being and quality of life and its links with general health are systemic and reciprocal.[1] Dental attendance has been reported as one of the essential pointers to oral health evaluation and awareness.[2] Regular dental visit is an important oral health behaviour that helps maintain good oral health, aids early detection and intervention, and subsequently reduces the cost of dental treatment and the burden of oral diseases in the population.[3-6] Routine dental attendance has been shown to be associated with better oral health care.[6] Therefore, children should be introduced to regular dental visit in their early years so that they will imbibe good dental habit of regular dental visit.

There are diverse reasons why people, including children seek dental care. These reasons include but not limited to dental pain, bad breath (halitosis), tooth mobility, cavity in the tooth, soft tissue defects, routine check-up, oro-facial swellings, oro-facial trauma and poor aesthetics [2,7-10] Studies have shown that in developing countries, more people visit the dentist for curative/symptomatic care rather than for preventive care compared to developed countries.[10,11]Similarly,in our environment, very few people visit the dentist for routine preventive care,[10,11,12] notwithstanding the fact that preventive dental visits aid in early detection and treatment of oral diseases.[13]

Children are dependent on adults for their oral health care, their dental visit is dependent on factors related to the parents/caregivers' health seeking behavior. In Nigeria, dental attendance is poor[14,15] and factors such as socioeconomic status,[16]poor attitude,[17] family structure,[18,19] age,[20] gender,[20,21] culture[22] and ethnicity[23] have been found to be responsible.

Several studies have assessed the pattern of dental attendance among patients in Nigeria.[8,12,21,24,25] However, no such study has been conducted among paediatric dental patients in this study location. Prior to 2018, there was no Paediatric dentist in the institution where the study was conducted. However, in 2018, in line with international standards, the institution employed a Paediatric Dentist who started providing dental care for children who are 16 years old and below at the University of Calabar Teaching Hospital in Cross River State, Nigeria. From observation, few children attended dental clinic and presented late when oral diseases are complicated. It was hypothesized that majority of parents and caregivers take their children to the dentist only when they have serious dental problems. It is therefore necessary to scientifically evaluate the pattern of Paediatric dental attendance in the hospital to provide a baseline data as well as a template to facilitate planning oral health programmes in the state.

Methodology

Study Area

This study was conducted at the department of Child Dental Health, University of Calabar Teaching Hospital, Cross River State, Nigeria. This study received ethical approval from the Health Research Ethics Committee, University of Calabar (UCTH/HREC/33/079)

Study design and study populations

This was aretrospective study which involved data retrieval from the patient's record books from July 2018 to June 2021 using a proforma. Dental attendance was considered as a visit to the Paediatric dental unit to utilize preventive and/or curative services with procedures documented in patient's case notes as well as the patient's record books. The independent variables were age (16yrs and below), gender, impression/diagnosis and treatment done while the dependent variable was reasons and pattern of attendance between July 2018 and June 2021.

Data collection

Age was grouped as 0-5 years, 6-12 years and 13 -16 years based on primary dentition, mixed dentition and permanent dentition stages of occlusion; the gender as male or female while impression or diagnosis was considered as well as the corresponding treatment done. Patients with complete information were included in the study, while those with incomplete information were excluded. The diagnoses of patients were

categorized into the following: dental caries, sequelae of dental caries (reversible pulpitis, irreversible pulpitis, apical periodontitis, dentoalveloar abscess, cystic lesions), traumatic dental injuries, tooth discolouration, eruption and exfoliation disorders (retained primary teeth, painful mobile exfoliating teeth, ectopic eruption, eruption cysts), dental anomalies, routine checkup and others. Treatments done were categorized into glass ionomer cement restoration, composite restoration, scaling and polishing, tooth extractions, pulpotomies, pulpectomies, pulp capping, root canal treatments, apexification, apexogenesis, minor surgeries, and orthodontic referrals. All data retrieved were entered into Microsoft excel spreadsheet and then exported to IBM, Statistical Package for Social Sciences (SPSS) version 22 for analysis. The independent variables were age, gender, impression/diagnosis, and treatment done while the dependent variable was reasons and pattern of attendance.

Data analysis

Exploratory analysis was conducted to ensure data consistency. Descriptive analysis was done to determine the proportion of patients who attended the dental clinic in relation to age and gender. Descriptive statistics were expressed as percentages. Data was presented in tables and charts.

Results

A total of 6,645 patients visited the dental clinic during the period under review, out of which 430 patients were children, 16 years old and below. This gave a prevalence of 6.5% of paediatric dental attendance within the study period. However, 101 records were incomplete and only 329(5%) records with complete data were used for the study (include the percent of complete data).

Children within the age range of 6-12 years old were in the majority, 203(61.7%). Female children attended more 179 (54.4%) compared to the males 150 (45.6%) giving a Female: Male ratio of 1.19:1. (Table I).

Pain was the major reason for dental attendance (41%), while bad breath was the least reason (2%). About 3% of parents brought their children because of their fear or concern that their children may lose their teeth if not brought to the dentist (Figure 1). The commonest diagnosis made was sequelae of dental caries 93 (23.4%) while the least common was periodontal diseases 10 (3%), (Table II). The commonest treatment was tooth extraction 124 (37.7%) while the least was apexogenesis 2 (0.6%) (Table III). A greater proportion of participants within the 13-16 age group had more complications of dental caries compared to the other age groups and this relationship is statistically significant (P=0.02) state p value here) (Table IV).

Table 1: Demographic Characteristics Of The Study Population

AGE GROUP(Years)	FREQUENCY	PERCENTAGE
0-5	75	22.8
6-12	203	61.7
13-16	51	15.5
GENDER		
Male	150	45.6
Female	179	54.4
Total	**329**	**100.0**

Table 2: Patients' Diagnosis

DIAGNOSIS	FREQUENCY	PERCENTAGE
Dental Caries	60	15.1
Sequelae of Dental caries	93	23.4
Traumatic dental injuries	40	10.1
Periodontal diseases	10	2.5
Routine Checkups	13	3.3
Tooth Discolouration	14	3.5
Dental Anomalies	19	4.8
Eruption/Exfoliation disorders	67	16.9
Chronic marginal gingivitis	53	13.4
Orthodontic referrals	12	3.0
Other Oral conditions	16	4.0
TOTAL	397	100

Total number of diagnoses made is 397 because some children had more than one oral condition

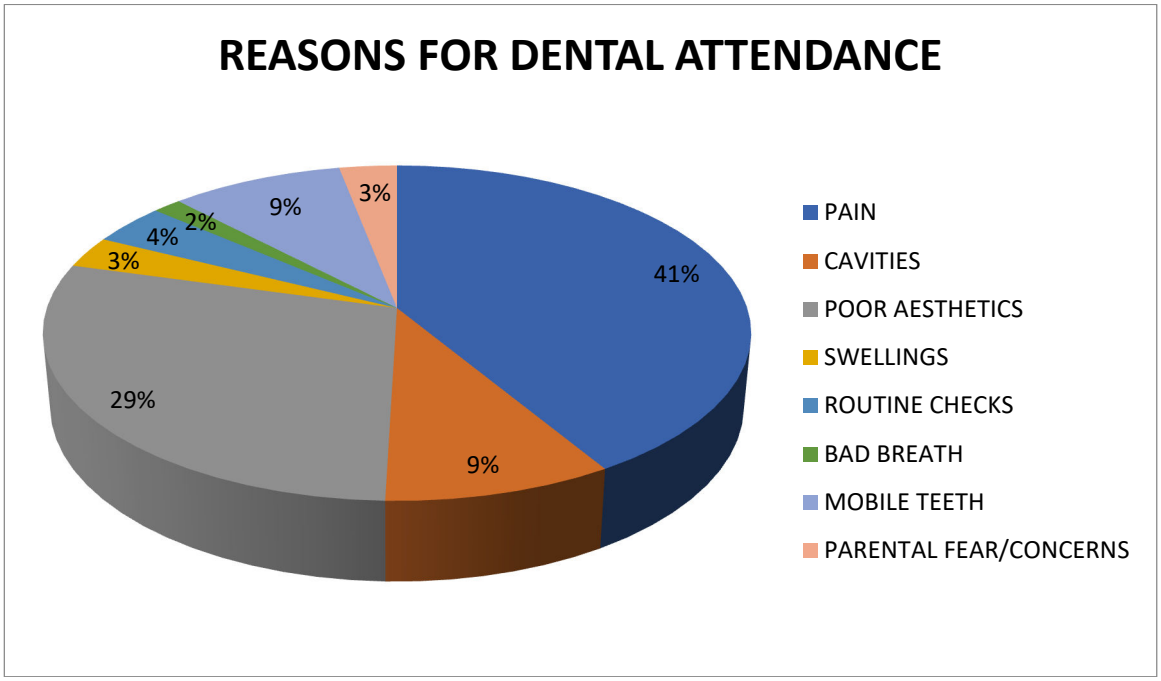

Figure 1: Reasons for Dental Attendance Among the Study Group

Table 3: Types of Treatment Received By The Patients

Treatment done	Frequency	Percentage (%)
Glass Ionomer Restoration	46	11.6
Composite Restoration	58	14.6
Temporary dressing	10	2.5
Prophylaxis	62	15.6
Tooth Extractions	73	18.4
Pulpotomies	30	7.6
Pulpectomy	13	3.3
Pulp Capping	15	3.8
Root Canal Treatments (RCTs)	4	1.0
Apexification	11	2.8
Apexogenesis	2	0.5
Fluoride therapy	43	10.8
Minor Surgeries	10	2.5
Appliances	4	1.0
Other Treatments (counseling, debridement, observations and follow up)	16	4.0
TOTAL	**397**	**100**

Table 4: Association Between Age, Gender, and Commonly Diagnosed Oral Conditions

	Age				Gender		
Diagnosed Oral conditions	**0-5**	**6-12**	**13-16**	**P value**	**Male**	**Female**	**P value**
Dental caries	18 (24)	31 (15.3)	11 (21.6)	0.15	24 (16)	36 (20.1)	0.25
Sequelae of Dental caries	16 (21.3)	55 (27.1)	22 (43.1)	**0.02**	49 (32.7)	44 (24.6)	0.07
Traumatic dental injuries	8 (10.7)	27 (13.3)	5 (9.8)	0,71	21 (14)	19 (10.6)	0.22
Dental anomalies	8 (10.7)	8 (3.9)	3 (5.9)	0.10	9 (6)	10 (5.6)	0.52
Eruption/Exfoliation disorders	9 (12)	54 (26,6)	4 (7.8)	0.53	28 (18)	39 (21.8)	0.29
Routine visit	0 (0.00)	9 (4.4)	4 (7.8)	0,73	3 (2)	10 (5.6)	0.82

p < 0.05

Discussion

This study assessed the pattern of presentation, the reason for presentation and the treatment done for patients who attended the Paediatric dental outpatient clinic in UCTH over a period of 3 years. There were more female than male patients in this study. This is similar to the report of a prospective study conducted in a Paediatric dental outpatient clinic in Benin, Nigeria, among children of similar age group where 61.1% of the study population were females.[24]

It is probable that the females expressed more pain than the males hence, their higher attendance. Finley et al,[25] noted that the reason why female children feel pain more than the males could be because of the cultural influence on pain perception and expression which prevents male children from expressing and

reporting pain to their parents compared to the female children. Similar notion in Nigeria makes the male folk perceive themselves as stronger and less emotional, making any show of pain to connote weakness.

Pain was the most common reason for attending clinic in this study. Similar studies[8,9,21,24,26] recorded pain as the chief complaint among their study populations. This may be an indication of inadequate oral health behavior amongst the parents/caregivers whose duties were to take care of the health of their children/ward. The studies above reported a habit of late presentation among their participants. Parents/caregivers bring their children/wards mostly for curative rather than preventive treatments.

Children between the ages of six to twelve years attended clinic more than other age groups in this study. This finding is similar to that reported by Azodo and Ogordiin a study carried out in a tertiary hospital in Benin, Nigeria, where more than 50% of the children that visited the clinic were also within the age group of 6-12years.[24] This age group comprises children in the mixed dentition stage which is a phase in which both tooth eruption and exfoliation occur. Individuals in this age group tend to consume more cariogenic substances. Therefore, children within this age group may likely present with tooth pain, gingival discomfort and bleeding due to exfoliation, eruption or dental caries. In addition, children of younger age groups presented with fewer complaints. This may be because they have fewer standing teeth and fewer years of teeth exposure to cariogenic substances. This could probably mean that the prevalence of early childhood caries among this population is low.

In our study, the assessment of oral conditions based on diagnosis showed that dental caries and its sequelae were the most common presentation and these have been shown to be the main reason for seeking treatment in other studies.[10,27,28,29] This may be connected with the increase in the prevalence of dental caries in our society, especially among children of high socio-economic status with poor oral hygiene who consume high quantity of sugary substances. [24,26]

In this study, there were more symptomatic visits than were routine checkups. This may be an indication of poor oral health education and awareness, inadequate oral health literacy, ignorance or inadequate oral health behavior among the parents/ caregivers. Similarly, in a study carried out in Port Harcourt, Nigeria, only about 4.1% of the children attended Paediatric outpatient clinic for routine check -up while the majority came with symptoms.[8]A Ghanaian study also reported that routine dental visits (7.8%) was lower compared to those children that attended clinic for symptomatic reasons.[30]

Our study showed that 14.9% of the attendees presented with traumatic dental injuries whereas studies in Port Harcourt (9.1%)[8]and in Enugu (10.5%)[9]reported fewer cases of traumatic injuries.[6,9]Our study population consists of children who are often involved in one form of play or sporting activity or the other during their normal growth and active development, therefore, traumatic dental injuries are expected among them.

Tooth extraction (29.4%) was the commonest treatment offered in this study just like in another Nigerian study (37.8%).[24] This trend demonstrated late presentation of patients to the clinic and the poor attitude or awareness of parents and children to dental care. It also further supports the poor patients' attendance for preventive therapies reported in this study. There were very few restorative and endodontic treatments performed among the study population and this is probably due to lack of finances, willingness to pay and even poor oral health awareness on the need to seek preventive therapy rather than curative treatment among the parents and caregivers. This study showed that parents opted for extraction more often than pulp therapies probably because it is cheaper while some other parents opted for extraction due to poor oral health knowledge. Some parents/caregivers are not aware that retaining primary teeth in the mouth for as long as possible helps to guide the permanent successor during eruption as well as maintain a balanced occlusion. Another Ghanaian study by Amoah et al[30] reported that tooth extractions were the most preferred treatment, and this was attributed to the unique challenges of endodontic therapy in children as well as the higher cost involved. In addition, Janani et al[31], opined that Dentistry was perceived by most people to be a

useful service only when necessary but that Dentistry has not been considered a crucial part of their overall health.[31]

Scaling and Polishing (15.6%) was the second highest treatment after tooth extraction (18.4%) in contrast to another Nigerian study where about 8.3% of their study population was offered this as treatment. Majority of the participants in this study had poor oral hygiene and the protocol of management involved doing professional dental cleaning before definitive treatment.

This study showed an association between age and sequelae of dental caries. The children within the 13-16 - year age groups presented with significantly more sequelae of dental caries compared with the other age groups. This shows that most of the carious lesion seen in this age group were complications of dental caries which means that they were not treated at the right time. In contrast, a study in the United State of America found that the prevalence of dental caries in children was the highest in the 6-11 years age group.

In relation to gender, there was no significant association between the different oral conditions and gender. Males had more traumatic dental injuries and females had more carious lesions. This study was not able to assess the accuracy of the diagnosis made, the standard of treatment offered and the socioeconomic status of the children because of the retrospective nature of the study. It is therefore recommended that a prospective study should be conducted so as to address these limitations. Oral health awareness in this region should also be improved so as to improve the oral health knowledge and literacy of parents and caregivers.

Conclusion

Symptomatic visit was in the majority in this study. Dental caries and its sequelae, though preventable, remains the most common diagnosis among participants in this population. Majority of the participants presented late and chose tooth extractions compared to pulp therapies. We therefore recommend more oral health education for the parents/ caregivers in this population as well as government funded treatment for children in this region.

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Conflicting Interest

The authors declare no conflict of interest.

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