

Dental care seeking behaviour of children in a rural Nigerian community

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Abstract

Background: There is sparse information about oral health seeking behaviour of children in rural areas of developing countries. The aim of the study was to determine the dental care seeking behaviour of children attending the first rural based community oral health centre in Nigeria.

Methods: A retrospective review of records of patients aged 16 years or younger treated at the Primary Oral Health Care Centre in Ibarapa, Nigeria over six years was conducted. Data on sociodemographic characteristics of the patients, pattern of presentation and their oral hygiene practices were collected and processed using SPSS.

Results: A total of 239 paediatric patients were seen during the period with a mean age of 9.7 ± 4.4 years and 132 (55.2%) were males. The majority, 225 (94.1%), were presenting for the first time. All the children sought dental care for one problem or the other and the most common reasons for seeking care were: tooth ache in 105 (43.9%), trauma in 30 (12.6%) and perceived unclean mouth in 20 (8.4%) patients. Older children were more likely to seek dental care because of pain ($p < 0.001$), while younger children sought care principally on account of trauma ($p < 0.001$) and the under 5 years were seen more often for gum ache ($p = 0.006$). The majority, 175 (73.2%), used toothbrush and 182 (76.2%) cleaned their teeth once daily.

Conclusion: None of the children presented for routine check-up, rather, consultation was as a result of dental problems with toothache being the most common reason.

Keywords: Children, dental care services, dental pain, primary oral care, rural community

Résumé

Contexte: Il y a peu d'informations à propos du comportement de recherche de santé orale des enfants dans les zones rurales des pays en voie de

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développement. Le but de l'étude était de déterminer le comportement de recherche de soins dentaires des enfants fréquentant le premier centre communautaire de santé bucco-dentaire en milieu rural au Nigeria.

Méthodes: Une revue rétrospective des dossiers de patients âgés de 16 ans ou moins traités au centre de santé bucco-dentaire primaires à Ibarapa, au Nigeria sur une période de six ans a été menée. Les données sur les caractéristiques sociodémographiques des patients, le mode de présentation et leurs pratiques d'hygiène buccale ont été recueillies et traitées en utilisant SPSS.

Résultats: Un total de 239 patients pédiatriques ont été vus au cours de la période, avec un âge moyen de $9,7 \pm 4,4$ ans et 132 (55,2%) étaient des garçons. La majorité, 225 (94,1%), présentait pour la première fois. Tous les enfants cherchaient des soins dentaires pour un problème ou l'autre et les raisons les plus communes pour la recherche de soins étaient les suivantes: maux de dents dans 105 (43,9%), les traumatismes dans 30 (12,6%) et perçue bouche malpropre dans 20 (8,4%) patients. Les enfants plus âgés étaient plus susceptibles d'obtenir des soins dentaires en raison de la douleur ($p < 0,001$), tandis que les enfants plus jeunes ont cherché des soins principalement à cause d'un traumatisme ($p < 0,001$) et les moins de 5 ans ont été vus plus souvent pour la douleur des gencives ($p = 0,006$). La majorité, 175 (73,2%), utilisait des brosses à dents et 182 (76,2%) nettoyaient leurs dents une fois par jour.

Conclusion: Aucun des enfants ne présentait pour la routine check-up, plutôt, la consultation était à la suite des problèmes dentaires avec le mal de dent étant la raison la plus courante.

Mots-clés: Enfants, services de soins dentaires, douleurs dentaires, soins bucco-dentaires

Introduction

Nigerians in general, face a problem of limited access to oral health care services, which is worse in the suburban and rural areas of the country [1]. To further compound the problem, children in the suburban areas are known to have poor oral hygiene and high number of unrestored carious teeth [2,3]. Poor utilization of dental services is often associated with factors such as financial constraints and limited awareness, among

others [4,5]. Although people seek dental services mainly for therapeutic purposes, preventive services are highly favoured and an early age of not later than one year recommended for the first dental care visit for preventive purposes [6]. In our part of the world however, visit to the dentist is often initiated in response to toothache and other such complaints with the resultant effect that extractions are invariably the treatment option [4,5,7-9]. This oral health care seeking behaviour has been reported among children in urban regions of Nigeria, with the aforementioned studies conducted in tertiary oral health centres [7-9].

There is sparse information about oral health seeking behaviour of children living in severely underserved communities such as rural areas of a developing country like Nigeria. Furthermore, very few primary oral health care centres exist in Nigeria, and only a handful of them are located in rural areas, with poor documentation about dental service utilization by children residing in these areas. Knowledge of how children seek care in rural primary oral health care centres will help in accurate planning and promotion of oral health services to children in similar demographic settings and reduction of inequality in access to oral health care based on age or rural and urban dichotomy. Therefore, the aim of this study was to assess the dental care seeking behaviour of the paediatric age group in a typical rural community in Southwest Nigeria.

Materials and methods

This study was retrospective in design, which involved a review of clinic records of patients aged 0 to 16 years attending the Primary Oral Health Care Centre, (POHC) Igboora, Nigeria from the year 2008 to 2013. Ethical approval for the conduct of the study was obtained from the University of Ibadan and University College Hospital, Ibadan joint Institutional Review Board and the study was carried out in accordance with the principles of the Helsinki declaration on ethical guidance of research involving human subjects.

Study location

Igboora is a rural community, the administrative headquarters of Ibarapa Central Local Government Area of Oyo State, Southwest Nigeria. The POHC, Igboora is the only dental clinic in the town providing oral health care services to inhabitants of Igboora and her environs with a population of about 332,295 and a landmass of 1,600 square kilometres [10,11]. The POHC was established by the senior author (GAO) in Igboora to meet the dental needs of the underserved area as

the first rural based community oral health centre in Nigeria. The clinic personnel include dentists, a dental surgery assistant, a therapist and a community oral health assistant. Trained, qualified dentists take the history from patients at the POHC and they make documentations into the case files of patients, which were used for this study.

Data collection

The reasons for presenting to the dentist, previous dental visits and self-oral care constituted the dental care seeking behaviour of children presenting at the dental clinic for this study. Data was collected with a case record form/medical record abstraction form. The record abstraction form was developed strictly following the research question and objectives, after which it was validated prior to data collection by using it to abstract data from clinic records of the POHC, Idikan and was found easy to use; repeat abstraction from the same clinic record with the case record form yielded the same information as was obtained initially. The face and content validity was established by a dentist not conversant with the objectives and research question of the study and who reported that the form was appropriate and actually measured what it set out to assess. The age as at the last birthday, gender, presenting complaint and frequency of tooth cleaning during the study period were retrieved from the clinic records by a trained dentist. Choice of dental clinic was not assessed as a dental care seeking behaviour since the POHC is the only dental clinic in this community. The presenting complaint was the actual reason why the patient came or was brought to the dental clinic. The study period was dichotomized into 2008 to 2010 being the early years and 2011 to 2013 as the later years. The data obtained were entered into a computer using SPSS version 21 software (Armonk, NY: IBM Corp.) and analyzed descriptively and analytically. Means and standard deviations were used to summarise numeric data and frequencies were generated for categorical variables. Test of association between categorical variables were conducted using chi-square test and continuous variables were compared using student t-test. The level of statistical significance was set at $p < 0.05$.

Results

A total of 2,777 patients were seen at the POHC during the study period of which, 239 (8.6%) were aged 16 years or younger and 132 (55.2%) of them were males.

The number of paediatric patients seen annually increased gradually from 29 in 2008 to 50 in 2013, $p < 0.001$ (Table 1). The mean age of the study participants was 9.7 years (standard deviation = 4.4 years) and the modal age was 13 years. A total of 45 (18.8%) patients were aged 5 years or younger, 79 (33.1%) were aged 6 to 10 years and 115 (48.1%) were between 11 and 16 years of age (table 2). Only 8 (3.3%) patients presented at the clinic by the age of one year.

Reasons for seeking dental care and age grouping
The patients aged 11 to 16 years were more likely to consult the dentist because of pain ($p < 0.001$) compared to those in the younger age groups who did so because of trauma ($p < 0.001$). Children aged 0 to 5 years were also more likely to consult the dentist because of gum ache when compared to other age groups, $p = 0.006$ (table 3). There were no significant relationships between the other reasons for seeking dental care and age grouping ($p > 0.05$). There were no significant

Table 1: Number of patients seen each year

Year	Male N (%)	Female N (%)	Total N (%)	t-statistic	p-value
2008	20 (8.4)	9 (3.7)	29 (12.1)	27.842	<0.001*
2009	20 (8.4)	14 (5.8)	34 (14.2)		
2010	18 (7.5)	21 (8.8)	39 (16.3)		
2011	24 (10.4)	17 (6.8)	41 (17.2)		
2012	22 (9.2)	24 (10.0)	46 (19.2)		
2013	28 (11.7)	22 (9.2)	50 (20.9)		
Total	132 (55.2)	107 (44.8)	239 (100.0)		

* - Statistically significant

Table 2: Bio data of paediatric patients presenting at the POHC

Age group (years)	Male N (%)	Female N (%)	Total N (%)	p value
0 - 5	18 (7.5)	27 (11.3)	45 (18.8)	0.074
6 - 10	46 (19.2)	33 (13.8)	79 (33.1)	
11 - 16	68 (28.5)	47 (19.7)	115 (48.1)	
Total	132 (55.2)	107 (44.8)	239 (100.0)	

Dental visits

A total of 225 (94.1%) patients were presenting for the first time to the dentist, with 9 (3.8%), 3 (1.3%) and 2 (0.8%) presenting for the second, third and fourth time respectively. The most common presenting complaint was tooth ache in 105 (43.9%) patients followed by trauma in 30 (12.6%) and perceived unclean mouth in 20 (8.4%) patients. Other complaints included; swelling in the oral cavity and or face 19 (7.9%), retained baby teeth 13 (5.4%), discoloured teeth 12 (5.0%), gum ache 11 (4.6%), scattered teeth 10 (4.2%), mouth odour 4 (1.7%), tooth decay 4 (1.7%), bleeding gum 4 (1.7%), "mobile teeth" 3 (1.3%), fractured teeth 2 (0.8%), fleshy oral growth 1 (0.4%) and facial asymmetry - deviation of the mouth of the patient to one side without associated swelling 1 (0.4%).

associations between gender and dental care seeking behaviour ($p > 0.05$).

Reasons for seeking dental care and early or late period of the study

Available records indicated that more cases of trauma were seen in the first three years (2008 to 2010) than the latter three years (2011 to 2013), $p = 0.005$ (Table 4). There were no significant relationships between the other reasons for seeking dental care and year of study ($p > 0.05$).

Oral hygiene methods

The oral hygiene aids used by the patients included; toothbrush 175 (73.2%), chewing stick 17 (7.1%), cotton

Table 3: Association between reasons for seeking dental care and age group of patients

Age group (years)	Pain as reason for presentation N (%)	Pain not reason for presentation N (%)	Total N (%)	χ^2	p-value
0–5	9 (20.0)	36 (80.0)	45 (100.0)	38.220	<0.001*
6–10	22 (27.8)	57 (72.2)	79 (100.0)		
11–16	74 (64.3)	41 (35.7)	115 (100.0)		
Total	105 (43.9)	134 (56.1)	239 (100.0)		
Age group (years)	Trauma as reason N (%)	Trauma not reason N (%)	Total N (%)	χ^2	p-value
0–5	12 (26.7)	33 (73.3)	45 (100.0)	16.316	<0.001*
6–10	13 (16.5)	66 (83.5)	79 (100.0)		
11–16	5 (4.3)	110 (95.7)	115 (100.0)		
Total	30 (12.6)	209 (87.4)	239 (100.0)		
Age group (years)	Gum ache as reason N (%)	Gum ache not reason N (%)	Total N (%)	χ^2	p-value
0–5	6 (13.3)	39 (86.7)	45 (100.0)	10.077	0.006*
6–10	3 (3.8)	76 (96.2)	79 (100.0)		
11–16	2 (1.7)	113 (98.3)	115 (100.0)		
Total	11 (4.6)	228 (95.4)	239 (100.0)		

* - Statistically significant

Table 4: Association between reasons for seeking dental care and early/late period of the study

Period	Pain as reason for presentation N (%)	Pain not reason for presentation N (%)	Total N (%)	χ^2	p-value
2008–2010	42 (41.2)	60 (58.8)	102 (100.0)	0.549	0.459
2011–2013	63 (46.0)	74 (54.0)	137 (100.0)		
Total	105 (43.9)	134 (56.1)	239 (100.0)		
Period	Trauma as reason for presentation N (%)	Trauma not reason for presentation N (%)	Total N (%)	χ^2	p-value
2008–2010	20 (19.6)	82 (80.4)	102 (100.0)	8.070	0.005*
2011–2013	10 (7.3)	127 (92.7)	137 (100.0)		
Total	30 (12.6)	209 (87.4)	239 (100.0)		
Period	Gum ache as reason for presentation N (%)	Gum ache not reason for presentation N (%)	Total N (%)	χ^2	p-value
2008–2010	5 (4.9)	97 (95.1)	102 (100.0)	0.036	0.849
2011–2013	6 (4.4)	131 (95.6)	137 (100.0)		
Total	11 (4.6)	228 (95.4)	239 (100.0)		

* - Statistically significant

wool 4 (1.7%), foam 2 (0.8%) or nothing 41 (17.2%) as at the time of presentation. The majority, 182 (76.2%), cleaned their teeth once daily, 15 (6.3%) did

so twice daily while 42 (17.6%) did not clean their teeth regularly.

Discussion

The present study assessed the dental care seeking behaviour of children in a POHC in a rural community. The paediatric patient constituted less than 10% of the total number of patients seen at the POHC. Encouraging was the significantly increasing number of children presenting at the POHC over the years of the study. This may represent progressive integration and acceptance of this type of treatment into the cultural values of this community. In addition, it might be due to an increase in the level of awareness among the residents of the community since oral health education programme has been a consistent feature of the POHC over the years. The results from this study showed that the proportion of boys presenting at the POHC was higher than that of girls, although this was not statistically significant; previous studies [7-9,12] have reported that more girls than boys presented at clinics for oral health care.

The recommended age for the first visit of a child to the dentist according to the American Academy of Pediatric Dentistry [6] is at the time of eruption of first tooth or at most 12 months of age.

The findings of this study showed that very few of the children presented by age one year and the mean age of the children presenting for treatment in this community was approximately 10 years. These coupled with the fact that the majority of the children were presenting for the first time ever to a dental clinic is a source of concern as children in this environment are quite far from meeting the recommended time for the first dental visit. Children, being dependants, require the efforts of their parents to meet the requisite recommendation. This shows that children as well as their parents in this part of the world require oral health motivation and enlightenment in order to utilize dental services adequately and appropriately. It is highly probable that parents who do not appreciate the importance of preventive dental care will be less likely to take their children to the dentist for such.

The children consulted the dentist mainly because of dental problems as similarly reported by others [7-9,13,14]. This is a reflection of the pattern of utilization of dental services in most parts of the developing world, which is problem driven. The most common reason for seeking dental care by the children was toothache, which is in agreement with other studies [7-9,13-18]. Pain is a symptom that has significant impact on quality of life, which drives the affected to seek and demand for relief. Impact on daily activities by oral diseases has been found to be associated with

utilization of dental services [19,20]. In this rural Nigeria community, none of the children presenting at the POHC did so for routine dental check-up, which contrasts with findings by other authors [7-9,13,14,16,21] where children visited the dentist for routine check-up. Pain found in this study as the prevalent factor for seeking dental care may be a pointer to the low level of awareness as regards preventive dental care in the community. In developed countries however, this is not the case, as a higher proportion of children visit the dentist for routine check-up and familiarization with the dentist [14,21].

Trauma was the next most common reason for seeking dental care by the children in the present study. Trauma is usually associated with morbidities, which can significantly impact on daily activities of affected persons. Gum ache was another common reason for seeking dental care; the gum is a component of the periodontium, the tooth supporting structure; aching of this periodontal structure, could be due to tooth exfoliation associated with trauma from mastication. In addition the ache could be from gingivitis resulting from accumulation of plaque and calculus, a symptom of periodontal disease, which has been documented as the most common oral condition presented with by children to a dental centre [7-9].

In this study, the association of age groups with reasons for presentation showed that older children and adolescents consulted the dentists mainly because of pain, which was the driving force to seek oral health care in this group of patients compared to the younger age group who sought dental care for other reasons. This study also revealed that younger children (0-5 years and 6-10 years) sought dental care mainly because of trauma, which is a reflection of activities in this age group compared to those in older age group (11-16 years). On the other hand, children aged five years or younger visited the dental centre because of gum problems more often than older children (6-16 years), which may be due to the inadequacies in oral hygiene measures. The inadequacies in oral hygiene measures may be attributed to lack of cooperation by these children during the process of tooth cleaning or lack of motivation by parents or guardians to supervise or assist in cleaning their teeth due to the erroneous belief that these children's teeth are temporary hence they do not need so much attention during tooth cleaning [22].

The present study revealed that the majority of the children used toothbrush to clean their teeth, in accordance with findings in a semi urban region [2] but

contrary to reports by Abiola *et al.*, [3] who found that only few children (19.3%) in the rural regions of Lagos State, Nigeria used toothbrush with the majority (78.4%) using cotton wool. The younger age group studied in the later study may be responsible for the differences noted. Only a few children brushed their teeth twice daily, which were similarly noted by others [2,3].

Conclusion

Very few children sought dental care at the Primary Oral Health Care Centre by age one year. None of the children presented for routine check-up, rather, consultation was as a result of dental problems with toothache being the most common reason. Although many of the children had a tooth cleaning aid, only a few engaged in the twice daily recommended tooth cleaning behaviour. There is a need to promote oral health among children in this community with emphasis on the need for preventive utilization of dental services and cleaning of teeth twice daily.

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