

Perception and experience of Nigerian paediatricians to dental-referral for children with chronic illnesses

FG Nkwocha¹, JU Ifesanya² and BJ Brown³

Department of Child Oral Health, University College Hospital¹, Department of Child Oral Health² and Department of Paediatrics, College of Medicine, University of Ibadan, Ibadan, Nigeria.

Abstract

Background: Interdisciplinary collaboration in the management of patients offers several advantages especially for children with chronic illnesses who are often at risk for other health conditions. Diseases in other parts of the body can be detected by a physician and lead to subsequent referral to the appropriate managing team. This study assessed the perception and experience of dental referral among Nigerian paediatricians as well as factors that may influence their decision to refer to a dentist.

Methods: Self administered questionnaires were used to obtain socio-demographic data, history of exposure to dental teachings as well as experience with dental referral. Two hundred and sixty nine paediatricians and paediatric practitioners were involved in the study. Descriptive statistics and measures of central tendency generated. Associations were tested with Chi Square and Statistical significance was set at $P < 0.05$.

Results: A total of 269 respondents participated in the study out of whom 142 (52.8%) trained at institutions where there was a dental school. Two hundred & forty three (90.3%) respondents had no didactic training in dentistry. Majority of the respondents 259 (96.3%) were in favour of routine professional oral check-up for children but only 83 (30.9%) endorsed the recommended bi annual oral checks. A referral rate of 0.76-1.9% was obtained.

Conclusion: Although paediatricians are a known source of dental referral for children globally, a lot needs to be done to equip the physicians with the necessary knowledge and skill that will enable them participate more actively in the promotion of oral health for Nigerian children.

Keywords: *Dental referral, Paediatricians, chronic illnesses.*

Résumé

Contexte: La collaboration interdisciplinaire dans la gestion des patients offre plusieurs avantages, en particulier pour les enfants souffrant de maladies chroniques qui sont souvent à risque des autres problèmes de santé. Les maladies dans les autres parties du corps peuvent être détectées par un médecin et conduit à un subséquent renvoi à l'équipe de gestion appropriée. Cette étude a évalué la perception et l'expérience du renvoi dentaire parmi les pédiatres nigériens ainsi que les facteurs qui peuvent influencer leur décision de se référer à un dentiste.

Méthodes: Des questionnaires auto-administrés ont été utilisés pour obtenir les données sociodémographiques, expositions antécédentes à des enseignements dentaires ainsi que l'expérience avec le renvoi dentaire. Deux cent soixante-neuf pédiatres et des praticiens pédiatriques ont été engagés dans l'étude. Les statistiques descriptives et les mesures de tendances centrales générés. Les associations ont été testés avec le Chi-carré et la signifiante statistique a été fixé à $p < 0,05$

Résultats: Un total de 269 répondants ont participé à l'étude parmi lesquels 142 (52,8%) ont été formés dans des établissements où il y avait aussi une école dentaire, mais 243 (90,3%) d'entre eux n'avaient aucune offre officielle de poste dentaire. La majorité des répondants 259 (96,3%) étaient en faveur de professionnelle routine check-up orale pour les enfants mais seulement 83 (30,9%) ont approuvé le recommandé check-up orale semestriel. Un taux de renvoi de 0,76-1,9% a été obtenu.

Conclusion: Bien que les pédiatres sont une source connue de renvoi de soins dentaires pour les enfants dans le monde, beaucoup reste à faire

pour équiper les médecins avec les connaissances et les compétences nécessaires qui leur permettront de participer plus activement à la promotion de la santé bucco-dentaire des enfants nigériens.

Mots-clés: *Renvoi dentaire, Pédiatres, maladies chroniques.*

Introduction

Some of the most common chronic illnesses seen among children in Nigeria include sickle cell disease, cerebral palsy, and epilepsy amongst others[1-3]. These illnesses present with several oral/dental problems either as part of the disease or as a result of its management[4-13]. A background of chronic illness predispose these children to oral diseases such as gingivitis, periodontitis, tooth decay, malocclusion, dental trauma, and eventual tooth loss; Thus these children present poorer oral health status than other children without chronic medical illnesses[14,15] The reasons given for this trend include greater attention paid to the treatment of the primary medical condition of the children by caregivers/parents, caregivers pampering them or being less firm with them in terms of discipline, as well as poor oral health awareness noted in our environment[16-18]. Paediatricians and family physicians make frequent contact with these children, managing them from infancy well into adulthood and so can play a vital role in the promotion of good oral health among these children. A visit to the physician's office provides an opportunity for oral health risk assessment, screening, child and parental counseling on the importance of good oral health seeking habits, reinforcement of dental advice and obtaining referrals to the dentist[19,20]. Dental visits for children according to American Academy of Paediatric Dentistry and American Academy of Paediatrics[21,21], should begin at 6-12 months of age. This early introduction to the dentist and routine oral check is even more crucial for the child with a background medical condition, to ensure prevention, early diagnosis and prompt treatment of some of the aforementioned diseases that they may be predisposed to.

A study on dental referral pattern of paediatricians in the USA reported high frequency of dental referral among the respondents of up to 90%[23], a similar study by Agbaje et al in Lagos[24] also obtained a referral history of 85.4% among the respondents. Considering the peculiar nature of oral healthcare needs for children with chronic medical illnesses and the increased risk of oral disease faced by the children, the authors sought to ascertain the perception and experience of paediatricians to dental referral for such children. This study also outlined the factors associated with the dental referrals.

Materials And Methods

A descriptive cross-sectional study was conducted in August 2013 and January 2014 after obtaining ethical approval from the University of Ibadan/University College Hospital Institutional Review Board. The participants included qualified paediatricians, paediatric residents and physicians working in paediatric hospitals (paediatric practitioners) across Nigeria. Participants were recruited from the national paediatric conference as well as post graduate paediatric update courses during the stated time frame. Written informed consent was obtained from all the paediatricians present at these meetings and only those who consented were given questionnaires to fill. Four hundred and twenty three self-administered questionnaires were distributed. A total of two hundred and ninety-one respondents returned filled questionnaires while two hundred and sixty-nine were appropriately filled and were analyzed. The questionnaires captured the biodata of the respondents as well as their exposure to dental training, their perception of risk of oral diseases for children with chronic illness and their experience with dental referral for their patients and reasons for such referrals.

Data analysis was performed with the Statistical Package for Social Sciences Version 21 statistical software. Descriptive statistics and measures of central tendency generated. Associations were tested with Chi Square tests and statistical significance was set at $p < 0.05$.

Results

Two hundred and sixty nine respondents had their questionnaires analyzed (63.6% response rate) and they consisted of 120 (44.6%) males

Table 1: Demographic characteristic of the respondents

Characteristics	Number/(%) N =269
<i>Cadres of respondents</i>	
Consultants	50(18.6)
Senior Registrars	67(24.9)
Registrars	129(45)
Medical officers	12(4.5)
House officers	11(4.1)
<i>Years of experience</i>	
0-4	30(11.2)
5-9	135(50.2)
≥ 10	104(38.6)
<i>Current employment institution</i>	
Private Clinics	8(3)
Secondary Health Centres	23(8.5)
Tertiary Health Centres	238(88.5)
<i>Presence of Dental School at Undergraduate Training institution</i>	
Present	142(52.0)
Absent	127(47.2)
<i>Formal posting in dental surgery</i>	
Yes	26(9.7)
No	243(90.3)

and 149 (55.4%) females. The age range was 27-74 years with mean age of 36.6±7.9 years.

Other demographic characteristic of the respondents is as shown in table 1.

Undergraduate dental training

One hundred and forty two respondents (52.8%) had their undergraduate training at institutions where there was a dental school.

Twenty six (9.7%) respondents reported having received didactic training in dentistry during their undergraduate training. Out of these 18 (6.7%) had a dental school in their undergraduate training institution, while 8(3.0%) had no dental school in their undergraduate training institution.

One hundred and four respondents (38.7%) reported being exposed to teachings on oral examination for dental conditions

Perception of oral health risks of children with chronic illness

Among the respondents, 239 (88.2%) agreed that children with chronic medical illnesses were at more risk of oral diseases with 227 (84.4%)

offering acceptable reasons for the increased risk these children face. On the other hand 30 (11.2%) did not think that children with chronic illnesses had an increased risk for oral diseases.

Two hundred and fifty nine of the respondents (96.3%) were in support of routine dental check up for children with chronic illnesses. However, only 83 (30.9%) endorsed a need for twice yearly routine checks while 106 (39.4%) stated that the checks should be done only when necessary.

Of the respondents 247 (91.8%) had positive attitude to dental postings for undergraduate medical students and most 150 (55.8%) suggested the posting up to 2-4 weeks. Other suggested periods for posting include 5-6 weeks 62 (23%) and 1-2 weeks 43 (16%).

Experience with dental referrals among the respondents

Two hundred and seventeen respondents (80.7%) reported a patient turnout of 1-25 patients per week, while two hundred and thirty two respondents (86.2%) reported having ever referred patients to the dentist. The commonest reason for referral was either pain in isolation/pain in combination with other abnormalities (Table 2). Among the respondents that have never referred the commonest reason for not referring was patient or parent not having dental complaints 13 (4.5%). Other reasons included the absence of obvious indications 7 (2.6%) and not being exposed to dental co-management of patients. A combination of these reasons accounted for 13(4.8%) of the reported reasons. By comparing the most frequently reported patient turn out to the most frequently

Table 2: Experience of Dental Referral among Respondents

Variable	Number (%) N=269
<i>Experience of referrals</i>	
Have Referred	232(86.2)
Never Referred	37(13.8)
<i>Number of referrals per year</i>	
1-10 per year	208(77.3)
11-20 per year	17(6.3)
> 20 per year	7(2.6)
<i>Reasons for referral</i>	
Complain of oral pain alone or in combination with other presentations	171(63.6)
Suspected tumour	7(2.6)
Child's mouth appear dirty	3(1.1)
Teeth not well arranged	7(2.6)
Cleft lip and/ palate	3(1.1)
Combination of other oral conditions without pain	41(15.3)
<i>Number of patients seen per week</i>	
1-25	217(80.7)
26-50	38(14.1)
51-70	8(3.0)
> 70	6(2.2)

reported number of referrals, a referral rate of 0.76-1.9% was obtained. There was no statistically significant association between exposure to teaching on performance of oral examination and history of dental referral.

There was a significant association between the years of experience ($p = 0.021$), position of respondents ($p < 0.001$) with frequency of dental referrals. Respondents with more than ten years of experience referred more patients than those with lesser years; also consultants referred more patients compared to residents (Table 3).

Respondents who agree that paediatric patients should receive routine dental checkups were more likely to refer, than those that did not believe in a routine dental check up- as shown in table 3 ($p = 0.049$).

Discussion

This study highlights the fact that though about half of the respondents trained at institutions with the presence of a dental school, a large proportion of them had no didactic training in dentistry. This is similar to a previous study in a Nigerian institution with a dental school [25] and exposes the missed opportunities, where medical students could have gained knowledge of oral health conditions affecting children-especially those with chronic medical illnesses, as well as appreciate how early dental interventions can impart on the children's quality of life. This has

Table 3: Factors Associated With Dental Referral for Children with Chronic Illnesses

Variable	Ever referred n=232 %	X ²	P Value
<i>Sex</i>			
Male	104(44.8%)	0.032	1.000
Female	128(55.2%)		
<i>Years of experience</i>			
Less than five years	21(70%)	7.713	0.021
Five to nine years	118(87%)		
More than ten years	93(89%)		
<i>Present position</i>			
Medical officer	11 (91.7%)	24.970	0.001
Registrar	113(87.6%)		
Senior registrar	58 (86.6%)		
Consultant	46(92.0%)		
Others(mostly house officers)	4(36.4%)		
<i>Attitude to undergraduate dental posting</i>			
Favourable	213 (86.2%)	0.000	1.0
Unfavourable	19 (86.4%)		
<i>Attitude to routine check up</i>			
Favourable	225 (87.2%)	4.942	0.049
Not favourable	7 (63.6%)		

translated to the low referral rate observed in this study.

It is encouraging to note that most respondents in this study had referred patients to the dentist during the course of their career. This is similar to the dental referral history reported in a study in the United States[23] and Lagos[24]. However considering the reported patient turn out for most of our respondents, the referral rate of 0.76-1.9% obtained in this study is grossly inadequate. The paediatricians are an important source of dental referral for these children, and should encourage them and their parents/ caregivers to make the recommended twice yearly routine visit to the dentist, starting from 6- 12 months of age [26] The most frequent reason for referral to the dentist in this study was the complaint of pain. This suggests that, there were usually symptoms of disease present at the time of referral, and so referrals for routine professional oral checks were not usually performed. This is in contrast to the "risk based referrals" reported among paediatricians in the USA[23]. Even though more than 80% of respondents in this study were aware of the increased risk for oral disease among children with chronic systemic illnesses, majority of referrals were made on the basis of the presence of disease symptoms. Since it is known that the presence of pain and oral disease is detrimental to the quality of life of children [27,28], risk based referrals would afford these children the opportunity to receive simple preventive and protective oral health measures, such as oral hygiene instructions, scaling and polishing, fissure sealing e.t.c. Oral health preventive measures are easy to provide, less invasive and cost effective compared to therapeutic procedures[29,30]

There was a statistically significant association between the years of experience and cadre of the physician with history of dental referral. The respondents with more years of experience and higher cadre tended to refer more patients to the dentist. This is a reflection of the increased ability of the respondents to recognize

cases requiring dental care with increasing experience and time in practice. Their favourable disposition to routine checkup is probably borne out of these experiences and may underscore the need for a review of the medical curriculum.

The proportion of our respondents who reported having been exposed to teachings on performance of oral checks up for dental conditions may have had this exposure through other means. Incidentally the sources of these exposures were not explored in the present study. They might have obtained the exposures for example by being patients themselves checked by dentists or they might have been audience to a CODEH programme (Committee on Dental Education and Health) organized by dental students [24][25]. The absence of a significant association between the reported exposure to teaching on oral exam and dental referrals highlights that the reported exposures and teachings were inadequate and there may be need for practical sessions.

In conclusion, many paediatricians in this environment have a history of dental referral for their patients with chronic illnesses- performed most times for the presence of oral pain. Dental referrals for routine oral health checks were not carried out for the children. Also, the dental referral rate was low. Thus there is need to provide more opportunities for enlightening the physicians on the burden of oral health conditions affecting children with chronic medical illnesses; as well as the benefits of early and regular dental checks. It is desirable that this commences with integration of didactic dental teachings for undergraduate medical students and clinical exposure for post graduate doctors. This may lead to higher referral rates for children with chronic medical illnesses and possibly better oral health care status for the child with a back ground chronic illness.

Acknowledgment

Data analysis and writing of this paper was supported by the Medical Education Partnership Initiative in Nigeria (MEPIN) project funded by Fogarty International Center, the Office of AIDS Research, and the National Human Genome Research Institute of the National Institute of Health, the Health Resources and Services Administration (HRSA) and the Office of the

U.S. Global AIDS Coordinator under Award Number R24TW008878. The content is solely the responsibility of the authors and does not necessarily represent the official views of the funding organizations.

The authors would also like to thank Drs Baruwa and Egun Olaleye for their contribution.

References

1. Belonwu RO, Gwarzo GD, Adeleke SI. Cerebral palsy in Kano, Nigeria--a review. *Niger J Med J Natl Assoc Resid Dr Niger* [Internet]. 2009;18(2):186–189.
2. Lagunju IOA, Fatunde OJ, Takon I. Profile of childhood epilepsy in Nigeria. *J Pediatr Neurol* [Internet]. 2009 [cited 2012 Nov 27];7(2):135–140.
3. Brown BJ, Akinkunmi BF, Fatunde OJ. Age at diagnosis of sickle cell disease in a developing country. *Afr J Med Med Sci* 2010;39(3):221–225.
4. Gurbuz T, Tan H. Oral health status in epileptic children. *Pediatr Int*. 2010 Mar;52(2):279–283.
5. Lundström Ås, Eeg-Olofsson O, Hamp S-E. Effects of anti-epileptic drug treatment with carbamazepine or phenytoin on the oral state of children and adolescents. *J Clin Periodontol*. 2005 Dec;9(6):482–488.
6. Costa DM, Teixeira MM, Afonso RL, Ruviera DB, Aguiar SMHCÁ. Prevalence of dental trauma in patients with cerebral palsy. *Spec Care Dent*. 2008 Apr;28(2):61–64.
7. Adewole RA, Ojini FI, Akinwande JA, Danesi MA. Oro-dental and maxillofacial trauma in epilepsy at a tertiary hospital in Lagos. *West Afr J Med*. 2011;30(2):114–117.
8. Ferreira MCD, Guare RO, Prokopowitsch I, Santos MTBR. Prevalence of dental trauma in individuals with special needs. *Dent Traumatol*. 2011 Apr;27(2):113–116.
9. Ogunbodede EO, Adamolekun B, Akintomide AO. Oral Health and Dental Treatment Needs in Nigerian Patients with Epilepsy. *Epilepsia*. 2005 Aug;39(6):590–594.
10. Bhat M, Nelson KB. Developmental enamel defects in primary teeth in children with cerebral palsy, mental retardation, or hearing defects: a review. *Adv Dent Res*

- 1989;3(2):132-142.
11. Martin BS. Traumatic intrusion of maxillary permanent incisors into the nasal cavity associated with a seizure disorder: report of a case. *Dent Traumatol*. 2003 Sep;19(5):286-288.
 12. Morgan J. Why is periodontal disease more prevalent and more severe in people with Down syndrome? *Spec Care Dent*. 2007 Sep;27(5):196-201.
 13. Oredugba FA, Savage KO. Anthropometric finding in Nigerian children with sickle cell disease. *Pediatr Dent*;24(4):321-325.
 14. Oredugba FA, Savage KO. Comparative study of oral hygiene status of HbSS subjects and controls. *Afr J Med Med Sci*. 2004 Jun;33(2):127-130.
 15. Lewis C, Robertson AS, Phelps S. Unmet Dental Care Needs Among Children With Special Health Care Needs: Implications for the Medical Home. *Pediatrics*. 2005 Sep;116(3):e426-e431.
 16. Parry JA, Khan FA. Provision of dental care for medically compromised children in the UK by General Dental Practitioners. *Int J Paediatr Dent*. 2008 Jul;10(4):322-327.
 17. Sofola O. Implication of Low Oral Health Awareness in Nigeria. *Niger Med J*. 2010;51(3):131-133.
 18. Oredugba FA. Use of oral health care services and oral findings in children with special needs in Lagos, Nigeria. *Spec care Dent*. 2006 Apr;26(2):59-65.
 19. Foster H, Fitzgerald J. Dental disease in children with chronic illness. *Arch Dis Child [Internet]*. 2005 Jul;90(7):703-708.
 20. Medicine AA of PC on P and A. Recommendations for Preventive Pediatric Health Care. [Internet]. *Paediatrics*. 2000 p. 645.
 21. American Academy of Paediatric Dentistry. Policy Statement. *Pediatr Dent*. 2009;31:1-302.
 22. American Academy of Pediatrics. Policy Statement. *Pediatrics*. 2003;111:1113-1115.
 23. Dela Cruz GG, Rozier RG, Slade G. Dental screening and referral of young children by pediatric primary care providers. *Pediatrics*. 2004 Dec;114(5):e642-652.
 24. Agbaje M, Adeniyi A, Salisu M, Animashaun A, Ogunbanjo B. Dental caries in children-an assessment of the knowledge of Nigerian Paediatricians. *Afr J Med Med Sci*. 2013;42:157-163.
 25. Adeghe HA, Ehigior O, Azodom CC, Ehizele AO. Nigerian clinical level medical students' knowledge of dental specialty. *Ann Med Health Sci Res* 2012 Jul ;2(2):157-160.
 26. American Academy of Pediatric Dentistry reference manual 2009-2010. *Pediatr Dent* 2009 Jan 31(6 Reference Manual):1-302.
 27. Moure-Leite FR, Ramos-Jorge J, Ramos-Jorge ML, Paiva SM, Vale MP, Pordeus IA. Impact of dental pain on daily living of five-year-old Brazilian preschool children: prevalence and associated factors. *Eur Arch Paediatr Dent*. 2011 Dec;12(6):293-297.
 28. Masiga MA, M'Imunya JM. Prevalence of dental caries and its impact on quality of life (QoL) among HIV-infected children in Kenya. *J Clin Pediatr Dent*. 2013 Jan;38(1):83-87.
 29. Savage M., Lee J., Kotch J., Vann Jr, W F. Early preventive dental visits: Effect on subsequent utilization and cost. *Paediatrics*. 2004;114(e418-423).
 30. Lewis C. Dental care and children with special health care needs: A population based perspective. *Acad Pediatr*. 2009;9(6):420-426