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Parental attitudes to the care of the carious primary dentition – experience from a Nigerian tertiary Hospital.

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Abstract

Objective: To examine the factors associated with parents choices of dental care concerning carious primary teeth of their children.

Methods: A structured, self administered questionnaire was issued to parents of children attending the paediatric dental clinic of the University College Hospital (UCH) Ibadan. Items in the questionnaire included a section on the past dental visit(s) of parents, reason(s) for the clinic attendance and treatment(s) received, the second section contained items on parental treatment preferences under two different clinical scenarios of child dental health; scenario 1, asymptomatic carious primary tooth and scenario 2, symptomatic carious primary tooth. The last section contained items on determinants of parents' choice of treatment.

Results: Majority of the accompanying parent were mothers (75.8%) with a mean age of 39.3± 6.81, fathers were 20.8% with a mean age of 45.1± 5.24 while others were 3.4% with a mean age of 51.2± 1.09. Under the two clinical scenarios, majority of the parents preferred the dentist to determine the treatment of their children (scenario 1 = 53.7%; scenario 2 = 62.5 %). The accompanying parents and their socioeconomic status had no significant effect on parental preferences under the two clinical scenarios while past parental dental treatment had the greatest influence on parental choice (scenario 1 : $x^2 = 12.93$; p= 0.03 for past fillings experience and scenario 2 : $x^2 = 6.881$,p = 0.01 for past extraction experience).

Conclusion: The reliance of parents on dentist for decision on the choice of their children dental treatment and the dependence of parents choice on their past dental treatment experience suggested the need for dental health education to both parents and children on dental caries.

Keywords: *Parent, attitude, caries, primary teeth.*

Résumé

Introduction : L'objectif de cette étude était d'examiner les facteurs associés au choix des parents en ce qui concerne les soins des dents primaires cariées de leurs enfants. Un questionnaire structuré a été administré aux parents des enfants qui fréquentaient la clinique dentaire pédiatrique du centre Universitaire hospitalier (UCH), Ibadan.

Méthodologie : Le questionnaire inclut une section sur la visite des parents passé (s) chez le dentiste, la raison (s) de la fréquentation de la clinique et le traitement reçu; la seconde partie contenait les préférences de traitement parental en vertu de deux scénarios cliniques différents de la santé dentaire de l'enfant : le scenario de dents primaire cariée asymptomatique et le scénario de dents primaire cariée symptomatique. La dernière section contenait les déterminants du choix du traitement des parents.

Résultats : Les résultats démontraient que la majorité des parents qui accompagnaient étaient leurs mères (75,8%) avec un âge moyen de 39,3 ± 6.81, les pères étaient de 20,8% avec un âge moyen de 45,1 ± 5,24 tandis que d'autres ont été de 3,4% avec un âge moyen de 51,2 ± 1.09. Selon les deux scénarios cliniques, la majorité des parents préféraient le choix du traitement de leurs enfants déterminer par le dentiste (scénario 1 = 53,7%; scénario 2 = 62,5%). Le statut socio-économique des parents n'avait aucun effet significatif sur leurs préférences dans les deux scénarios cliniques tandis que le traitement dentaire parental passé a eu la plus grande influence sur le choix des parents (scénario 1 $x2 = 12,93$, $p = 0,03$ pour l'expérience des obturations passé et le scénario $2 x2 = 6.881$, $p = 0,01$ pour l'expérience d'extraction passé).

Conclusion : La dépendance à l'égard des parents sur le dentiste pour une décision sur le choix de soins dentaires de leurs enfants et la dépendance de choix aux parents sur leur expérience de traitement dentaire précèdent suggèrent la nécessité d'éducation des parents et des enfants sur les caries dentaires et sur l'hygiène dentaire.

Introduction

Caries of the primary dentition is a clinical problem that has been recognized as one of the sources of pain and discomfort in children. When it occurs, it is distressing for the child as well as the parent [1]. .Carious primary teeth can be a challenging oral problem depending on the age of the child. Treatment of such a child is essential and can be distressing to both the parent and the dentist especially if the child is uncooperative. However, when a child has carious primary teeth that are still symptomless, a clinical

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management decision has to be taken whether to restore the carious teeth or not.

Various studies [2-7] have shown different modalities of treatment for carious primary teeth. This ranges from leaving the carious primary tooth unrestored to pulp therapy or extraction. Paediatric dentists advocate that a carious lesion which has breached the marginal ridge of a primary molar tooth, should be treated using pulp therapy followed by restoration with a preformed crown [6]. However, general dental practitioners prefer restoration of such carious lesions with glass ionomer restorative material [7] and most often they leave incipient caries on primary teeth unrestored [2] .

Dental treatment of children is usually provided only after close consultation with parents. Based on various approaches to care of carious primary dentition by specialists and general dental practitioners, these questions arise. How much influence do parents' wishes have on the dental treatment of their children? Do they have strong preferences for a type of care provided or are they content to leave the treatment decisions solely to the dentist? The existing dental literature is not very helpful in answering these questions. Moreover, studies in the medical field have advocated detailed assessment of parental opinion in choice of treatment procedures [8,9] and a shift toward consumers' position on health care.[10,11]. Parents are to be involved in decision-making, which was previously the sole responsibility of the medical or dental professional, thereby resulting in clinical decision-making becoming a social process that includes the dentist, patients and occasionally other family members [12]. This implies that professional decisions can no longer be adopted by dentists if that decision is unacceptable to parents [13]. For instance, in developed countries, studies have shown that some of the non pharmacological and pharmacological methods of behavioural management which may be an effective, short-term means of ensuring that uncooperative, distressed children can be operated upon are not acceptable to many parents [14,15]. Meanwhile, behavioural and social factors such as previous dental visit of parents, parents perceptions of their children's level of cooperation to dental treatment and the socio-economic status of the family have been found to influence parental attitudes to dental care of primary dentition of their children [16,17].

In Nigeria, especially in our environment, there is paucity of information in the literature to show behavioural and social factors that may influence parental preferences for the dental care of their children. Therefore, the purpose of this study was to examine parental attitudes to dental care of carious teeth in children taking into account the family's socio-economic background and dental -related behaviour such as the parents' dental treatment history.

Materials and methods

Parents of the children attending the paediatric dental clinic of the University College Hospital, Ibadan for the first time within a period of 18 months (October 2010 - March 2012) were asked to voluntarily complete the structured questionnaire while they were waiting for their children to be registered in the records department of the dental centre. Approval was obtained from UI/UCH Ethical Review Committee (UI/IRC/04/0132). The questionnaire contained the demographic data of the accompanying parents such as age, gender, relationship with the child and socioeconomic status. The questionnaire asked parents about their own previous dental visit(s), the reason(s) for attendance and treatment(s) received. Their treatment preferences were then asked if their child had a:-

Scenario 1 : Carious but asymptomatic primary tooth; Parents were given the response choices of:

- Leave alone and monitor the tooth,
- Restore the tooth
- Take out the tooth (Extract the tooth)
- Leave the treatment decision to the dentist.

Scenario 2 : carious primary tooth which was causing toothache.

- Relieve the symptoms and monitor the tooth
- Restore the tooth
- Take out the tooth (Extract the tooth)
- Leave the treatment decision to the dentist.

What determined their choices in the two scenarios were then elicited through the following response choices:

- The number of visit involved in the treatment option.
- Cost of treatment
- Time involved in carrying out the treatment option
- Cooperation of my child
- Dentist ability to convince me
- Other (specify) .....

Data were analyzed using Statistical Package for Social Sciences (SPSS) version 12.0. Frequency tables of variables were generated while chi square test and logistic regression analysis were used to assess the relationship between variables in the data. Statistical significance was set at $p \leq 0.05$.

Result

Of all the children that presented for the first time in the dental clinic within the period of data collection, two hundred and forty accompanying parents filled the questionnaire with a response rate of 89% .From Table 1, one hundred and eighty two (75.8%) were mothers with mean age of 39.3± 6.81, fifty (20.8%) were fathers with mean age of 45.1± 5.24 while eight (3.4%) were others (grandparents, uncles and aunties) with mean age of 51.2± 1.09. Majority of the parents were from both high and middle socioeconomic class (44.2% and 44.6% respectively).One hundred and forty (58.3%) of these parents claimed they have never visited the dentist while one hundred (41.7%) claimed to have had previous dental visit(s).

Table 1: Sociodemographic characteristics of the accompanying parents.

Variables	No (%) of Respondents N= 240
Accompanying parents	
Mothers	182(75.8)
Fathers	50(20.8)
Others	8(3.4)
Socioeconomic status	
High	106(44.2)
Middle	107(44.6)
Low	27(11.2)
Previous Dental Visit(s)	
Yes	100(41.7)
No	140(58.3)

Table 2: Parental dental care preferences for Scenario 1 (carious asymptomatic primary tooth) and Scenario 2 (painful carious primary tooth).

Parental preferences	No (%) of Respondents	
	Scenario 1	Scenario 2
Leave alone, relieve symptoms and monitor the tooth	65(27.1)	28(11.6)
Restore the tooth	30(12.5)	17(7.1)
Extract the tooth	16(6.7)	45(18.8)
Leave the decision to dentist	129(53.7)	150(62.5)
Total	240(100)	240(100)

Table 2 summarizes the parental preferences for the two scenarios of their child having a carious but symptom-free primary tooth and a painful carious primary tooth. In the two scenarios, more than halve of the parents (53.7%) in scenario 1 and 62.5% in scenario 2 chose to leave the care decision in the hands of the dentist. About one third of parents (27.1%) did not want any treatment provided but wanted the situation monitored in scenario 1 while 11.6 % would want the dentist to relieve the symptoms and monitor the tooth in scenario 2. Only 12.5% and 7.1% of the respondents expressed a desire to have their child's carious tooth restored in scenarios 1 and 2 respectively while 6.7% in scenario 1 and 18.8% in scenario 2 would want the tooth removed.

The determinants of these parental preferences were as shown in Table 3 and Table 4. For scenario1, over 40% of the parents gave the ability of the dentist to convince them on the best treatment option as the main determinant of the choice of treatment for their child while others gave time involved in the treatment (27.5%), cost of the treatment (11.3%) and perceived ability of their child cooperation for the treatment options (17.6%) as the major determinants for their choice of treatment (Table 3). Similarly for scenario 2, over 40% of the parents gave ability of the dentist to convince them on the best treatment option as the main determinant of the choice of treatment. However, 22.5% said they would consider the time involved in the treatment, 13.3% the cost of the treatment and 20.8% the perceived ability of their child to cooperate for the treatment (Table 4).

In the two scenarios, the accompanying parent (father, mother or others) and their socio-economic status had no significant effect on parental preferences (x^2 =2.91; p = 0.08 and X^2 =3.88; p = 0.54 for scenario 1: X^2 = 2.37; p = 0.30 and X^2 = 6.40; p = 0.68 for scenario 2). However, in the first scenario (asymptomatic carious primary tooth), parents who had filling in the past, significantly (X^2 = 12.93 ,p= 0.03) expressed their preference for restoration in this scenario but there was no significant relationship between preferences in this scenario and parents with past history of extraction(X^2 = 10.49, p = 0.15). Similarly, in the second scenario (painful carious primary tooth), parents who had an extraction in the past, significantly (X^2 = 6.88, p = 0.01) expressed their preference for extraction in this scenario while there was no significant relationship between preferences in this scenario and parents with history of filling (X^2 = 9.88,p = 0.12).

Table 5 summarizes the results of logistic regression analysis for the dependent variable on whether or not the parents preferred a restoration for the asymptomatic carious primary tooth (scenario 1). The independent variables of the accompanying parent and their socioeconomic status did not have a significant effect on parental choices in this scenario.

Table 3 : Reasons for parental dental care preferences for Scenario 1 — a child with a carious but symptomless primary tooth.

Reasons for dental care preferences	Parental dental care preferences: Leave alone and monitor the tooth N (%)	Restore the tooth N (%)	Extract the tooth N (%)	Leave the decision to dentist N (%)	Total N (%)
Time/number of visits involved	27(11.2)	6(2.5)	6(2.5)	27(11.3)	66(27.5)
Cost of treatment	11(4.6)	5(2.1)	3(1.2)	8(3.3)	27(11.3)
My child's cooperation	12(5.0)	5(2.1)	3(1.2)	23(9.6)	43(17.9)
Dentist ability to convince parents.	15(6.3)	14(5.8)	4(1.7)	71(29.6)	104(43.3)
Total	65(27.1)	30(12.5)	16(6.7)	129(53.7)	240(100.0)

Table 4 : Reasons for parental dental care preferences for Scenario 2 — a child with a painful carious primary tooth

Reasons for dental care preferences	Parental dental care preferences: Relieve symptoms and monitor the tooth N (%)	Restore the tooth N (%)	Extract the tooth N (%)	Leave the decision to N (%)	Total N (%)
Time/number of visits involved	9(3.7)	7(2.9)	13(5.4)	25(10.4)	54(22.5)
Cost of treatment	10(4.2)	2(0.8)	10(4.2)	10(4.2)	32(13.3)
My child's cooperation	3(1.3)	5(2.1)	9(3.8)	33(13.7)	50(20.8)
Dentist ability to convince parents	6(2.5)	3(1.3)	13(5.4)	82(34.2)	104(43.3)
Total	28(11.7)	17(7.1)	45(18.8)	150(62.5)	240(100.0)

Table 5: Logistic regression analysis fitted for dependent variable preferred/ did not prefer restoration and independent variables accompanying parent, socioeconomic status and parental past dental treatment history for asymptomatic carious primary tooth.

Dependent variable: Prefer/ not prefer a restoration			
Independent variable	Odds ratio	95% CI of Odds ratio Lower	Upper
Parent had/never had a filling	3.25	1.54	7.50
Parent had/never had Extraction	2.37	2.11	4.75

Non significant independent variable in this scenario

- *Accompanying parent*
- *Socioeconomic status*

However, the past dental treatment history of the parent had a significant effect on preferences after controlling for the other earlier mentioned independent variables . Parents who had previously had a filling were more than three times likely to express a preference for restoration than parents who had never had a filling (OR= 3.25, CI of OR 1.54 - 7.50) . Similarly, parents who had an extraction in the past were more than two times likely to want their child to have a restoration in this scenario than parents who had never had an extraction (OR= 2.37, CI of OR 2.11 - 4.75) .

Logistic regression analysis for the dependent variable on whether or not the parents preferred a restoration for the symptomatic carious primary tooth (scenario 2) similarly showed that the independent variables of the accompanying parent and socioeconomic status did not also have a significant effect on parental choices in this scenario (Table 6). However, the past dental treatment history of the parent had a significant effect on preferences after controlling for the earlier mentioned independent variables also. Parents who had previously had a filling were two times likely to express a preference for restoration than parents who had never experienced a filling (OR= 2.12, CI of OR 4.27 - 7.50). However, parents who had an extraction in the past indicated lesser likelihood for their child to have a restoration in this scenario than parents who had never had an extraction (OR= 0.02, CI of OR 0.02 - 0.72).

dentist. The reason for this observation could be attributed to the fact that parents may not have a clear understanding of specific health problems and the range of available treatments including their effectiveness. Based on this fact, the parent as a consumer of healthcare may not be in a position to make informed decisions when selecting healthcare services.

It is of great concern that only 12.5% of parents would want the dentist to fill a carious, asymptomatic tooth while more than one quarter (27.1%) of them would want no treatment, preferring the dentist to monitor the situation, rather than providing some form of restorative treatment. Tickle *et al.* [13] in their own study similarly observed that only 6% of the parent want carious asymptomatic tooth filled while one third of the parent do not want any treatment but monitoring. From these observations, it shows that many parents would prefer

Table 6: Logistic regression analysis fitted for dependent variable preferred/ did not prefer restoration and independent variables accompanying parent, socioeconomic status and parental past dental treatment history for symptomatic carious primary tooth.

Dependent variable: Prefer/ not prefer a restoration			
	Odds ratio	95% CI of Odds ratio	
Independent variable		Lower	Upper
Parent had/never had a filling	2.12	4.27	7.50
Parent had/never had Extraction	0.02	0.02	0.72

Non significant independent variable in this scenario
- *Accompanying parent*
- *Socioeconomic status*

Discussion

This study examines the preferences of parents regarding the dental care of their children. It was observed that the accompanying parents were mostly mothers. Mothers as decision makers and best role models within the family play vital roles in relation to health matters [18]. Maintenance of good health and prevention of oral diseases depend on mothers. Therefore, if mothers are well informed on dental health it will directly affect the dental health of the children.

In both scenarios (asymptomatic and symptomatic carious primary teeth) in this study, more than half of the parents had confidence in their dentist to make clinical treatment decisions in the best interests of their children. This observation was similar to the findings in a similar study carried out in a developed country [13] where the authors found out that the majority (two third) of the parents left the clinical treatment decision of their children to the

a non-intervention approach to care of symptomless carious primary teeth of their children, an approach to care which seems to have been adopted by some general dental practitioners in developed countries [2]. This is a reflection of general reluctance of parents to have any dental or medical intervention performed on their children for minor symptomless ailments [13]. Surprisingly, few parents would still want the tooth extracted despite the fact that it is not symptomatic. Clinical discussions with some parents showed that some of them believe that primary teeth are temporary hence they are not important. Moreover, for the symptomatic carious primary tooth, some parents still prefer the symptoms to be relieved and the tooth monitored while greater percentage that did not leave the decision to the dentist opted for extraction of the teeth. From the professional point of view, symptomless carious tooth is a transient stage that could progress later to symptomatic and worse still a life threatening situation of orofacial space

infections such as Ludwig's angina, cavernous sinus thrombosis and necrotizing fasciitis. This reflects the imbalance in oral health knowledge that could sometimes exist between patients (in these case parents) and dental care professionals.

The ability of the dentist to convince the parent about best treatment option was found to be the most important determinant of the parent preference in the two scenarios, followed by time involved in receiving the treatment and child perceived ability to cooperate during the treatment. This shows the importance of communicating an appropriate treatment plan to the parent irrespective of the perceived parents' inability to afford the best treatment options because cost of treatment was the least determinant of the parental treatment preference according to questionnaire response.

It is clear from the present study that neither the accompanying parents of the children nor the socioeconomic status of these parents significantly affected parental preferences in the two scenarios. In a similar study previously carried out, socioeconomic status was found to affect parental preferences of treatment and the factor that was found to have greatest influence on care preference of parent was the past dental treatment received by the affected child [13]. Comparatively, in the present study, the factor which seemed to have the greatest influence on care preference of parent is the past treatment that the parent had received. Parents who had received previous dental filling were three times more likely to prefer restorative treatment for their children than those without previous dental filling (OR= 3.25). Furthermore, parents with past history of tooth extraction were two times more likely to prefer restoration for their children compared with those without previous dental extraction (OR= 2.37) .These findings suggest that parents who have experienced specific non traumatic types of dental care are more likely to prefer this type of treatment for their child while those who had a previous extraction will not want such traumatic experience of loosing a tooth especially if the tooth is asymptomatic [1]. However, in a symptomatic carious tooth, parents who had previous extraction experience preferred such treatment showing that parental preference for the care of their children's dental problems are closely related to their own dental treatment experiences.

The findings in this study demonstrated the reliance of parents on the Dentists in decision making for their children's treatment. This places the responsibility on the dentist to provide adequate information (based on the best available evidence) to enable parents to provide truly informed consent for the dental care of their child. Also, many parents do not see that restoration of carious primary teeth is imperative.

In conclusion, there is still dearth of information about dental treatment options available to the population in our environment either to the parents or to the children with dental ailments. Therefore, public health promotion should be bilateral, the first one is to the populace through awareness talks at parents/teachers meetings in schools, parents' workplace visitations for dental health campaign and dissemination of information through mass media on dental health awareness .The second approach should target the child patient through school visitations and dental health talks. Both approaches may utilize pre and post assessment questionnaires to determine the impact of such oral health promotion and education on them.

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