

Oral Health Knowledge and Dental Attendance among Adolescents With and Without Dental Fear

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ABSTRACT

Objective: To determine the prevalence of dental fear and to compare oral health knowledge and dental attendance among the adolescents in north central zone of Nigeria with and without dental fear.

Methods: This cross-sectional study was conducted among 350 children aged 15-19 years old recruited using multistage sampling technique from State owned secondary schools in Minna, Niger State. A self-administered questionnaire elicited information on demographic characteristics, oral health knowledge, toothache experience, gingival bleeding, dental attendance and dental fear.

Results: The majority (92.8%) of the participants reported that they give equal care to their teeth and bodies. Less than half (42.8%) reported poor/fair oral health knowledge; toothache (40.2%) while 56.4% and 54.9% reported gingival bleeding and dental attendance respectively. A total of 128 (37.0%) of the 346 participants reported dental fear. Participants with poor/fair oral health knowledge and toothache experience reported significantly more dental fear ($P=0.003$ and 0.016) respectively. The prevalence of severe dental fear among participants that visited dental clinic was 36.8%. The only determinant of dental fear among the participants was oral health knowledge.

Conclusion: The prevalence of dental fear in this study was high and it was found to be significantly associated with oral health knowledge and toothache experience. However, it was only oral health knowledge that emerged as the determinant of dental fear.

KEYWORDS: Dental attendance, Dental fear, Oral health knowledge

Introduction

Dental fear also known as dental phobia, odontophobia is a distressing emotion

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aroused by imaginary, anticipated or real dental treatment or procedures.¹ It is a prevalent problem worldwide with it being reported in a quarter to half of the studied population.^{2,3} It is one of the primary reasons why individuals avoid dental attendance and can result in substantial distress and oral health impairment.⁴ It is extremely important to recognize dental fear before a patient receives dental healthcare because it hampers dental patient cooperation and overall course of treatment.⁵ Dental fear usually has its onset in childhood and may persist into adulthood with affected parents frequently passing such feelings



to their children.^{6,7} It can be passed from one person to another and could also result from self-experience, influence on significant others, professional incompetence and dental procedures.⁸

Dental fear triggers a "vicious cycle dynamic," of lower use of dental services, and oral health diseases reinforce each other.⁹ It is often reported as a cause of poorer oral hygiene practices, irregular dental attendance, delay in seeking dental care and avoidance of dental care often resulting in poor oral health related quality of life.^{10,11}

Few studies on dental fear and anxiety in Nigeria were mainly in the dental clinic using either Corah Anxiety Scale (CAS) or Modified Dental Anxiety Scale (MDAS) which contain four or five questions respectively¹²⁻¹⁴ and rarely community-based.¹ Although, single item question dental fear tool is simple, easy to administer and respond to, valid and reliable instrument for the assessment of dental fear¹⁵, none of the reviewed Nigerian based studies used this tool. The objective of this study was to determine the prevalence of dental fear and to compare oral health knowledge and dental attendance among the adolescents in north central Nigeria with and without dental fear.

Materials and Methods

After obtaining approval from the State Ministry of Education, Informed consent and assent, this cross-sectional study was conducted among 15-19 years old children attending State-owned secondary schools in Minna, Niger State. Minna, the capital of Niger state is part of North Central Geopolitical Zone of Nigeria. Multistage sampling technique was employed to recruit

350 participants which exceeded the minimum sample size of 285 calculated using Cochran's formula for epidemiological studies.¹⁶ $n = z^2 pq / d^2$ where n = sample size, z = z statistics for a level of confidence (set at 1.96 corresponding to 95.0% confidence level), p = prevalence = 24.6% (0.246), $q = 1 - p$ and d = degree of accuracy desired (error margin) = 5% (0.05).

In the first stage, ten (10) schools were selected. There were 31 state-owned secondary schools in Minna comprising of 22 in Chanchaga and 9 in Bosso LGAs. To ensure proportionality, 7 and 3 Schools were selected in Chanchaga and Bosso LGAs respectively. The name of the Schools in each local government area were arranged in alphabetical order. Selection of schools was done by simple random technique of balloting using 7 yes and 15 no responses for Chanchaga LGA and schools 3 yes and 6 no responses 9 for Bosso LGAs.

In the second stage, a total of 35 participants were recruited from each of the 10 selected schools to get 350 participants. The class register was obtained to ascertain the number of children that qualified for the study. To get the 35 participants from each of the selected schools with average of 600 qualified participants. The sampling interval (k) was calculated using the formula $k = N/n$, where N is total number of qualified participants and n is the number of participants recruited to yield the calculated sample size. $K = 600/35 = 17$. A starting point was obtained from a table of random numbers then every seventeenth student was selected from the register until the target sample size for the school was attained.

Data were collected with self-administered questionnaires which elicited information on demographic characteristics, oral health knowledge, toothache experience, gingival bleeding, dental attendance and dental fear. The ten questions that assessed oral health knowledge were on their perception of tooth loss with aging as normal, perception of hole in



a tooth as normal, dental caries and soft debris on the tooth, Sugar and dental caries, worm and dental caries. Others include hole on the tooth due to magic, adverse effect of dental caries on appearance, adverse effect of sweet consumption on teeth, perception of general body health having a relationship to oral and dental diseases and necessity of regular visit to the dentist. Each correct answer was score as 1 while an incorrect answer attracts a score of 0. The minimum and maximum scores were 0 and 10 respectively. Oral health knowledge was categorized as poor=0-3, fair=4-7 and good=8-10 based on the pilot experience. The single item that assesses dental fear had four responses namely not afraid at all, a little bit afraid, very afraid and extremely afraid. Data collected was subjected to univariate, bivariate and multivariate analysis using IBM SPSS version 20.0. Family with 4 children were categorized as small family while those with >4 children as large family based on the fact that Nigeria policy on population recommended a maximum of four children per woman for health reasons. Dental fear was categorized as none for not afraid at all, mild for a little bit afraid, moderate for very afraid and severe for extremely afraid.

Results

The majority of the participants were 15-17-year old (54.3%), male (52.6%), Muslims (59.2%), Non - civil servant mothers (76.6%) and non-civil servant fathers (50.6%), large family (82.1%) and non-first borns (74.9%) and dwelling in high density locations (70.2%). The majority (92.8%) of the participants reported that they give equal care to the teeth and the body. Less than half (42.8%) reported poor/fair oral health knowledge, toothache (40.2%) while 56.4% and 54.9% reported gingival bleeding and dental attendance respectively. A total of 128 (37.0%) of the 346 participants reported dental fear giving.

Age, sex, religion, mother and fathers occupation, family size, birth rank, place of residence, gingival bleeding experience and dental attendance were not significantly associated with dental fear. Participants with poor/fair oral health knowledge (0.003) and toothache experience (0.016) reported significantly more dental fear. The only determinant of dental fear among the participants was oral health knowledge.



Table 1: Characteristics of the participants

Characteristics	Frequency	Percent (%)
<i>Age (years)</i>		
15-17	188	54.3
18-19	158	45.7
<i>Gender</i>		
Male	182	52.6
Female	164	47.4
<i>Religion</i>		
Non-Islam	141	40.8
Islam	205	59.2
<i>Mother occupation</i>		
Civil servant	81	23.4
Non Civil servant	265	76.6
<i>Father occupation</i>		
Civil servant	171	49.4
Non Civil servant	175	50.6
<i>Family size</i>		
Small	62	17.9
Large	284	82.1
<i>Position in the family</i>		
First born	87	25.1
Non first born	259	74.9
<i>Location (density)</i>		
Low	103	29.8
High	243	70.2
<i>Equal care to the teeth and body</i>		
Yes	321	
No	25	7.2
<i>Oral health knowledge</i>		
Good	198	57.2
Poor/Fair	148	42.8
<i>Toothache</i>		
Yes	139	40.2
No	207	59.8
<i>Gingival bleeding</i>		
Yes	195	56.4
No	151	43.6
<i>Dental attendance</i>		
Yes	190	54.9
No	156	45.1
<i>Dental fear</i>		
Yes	128	37.0
No	218	63.0
Total	346	100.0



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Table 2: Prevalence of dental fear among the participants

Characteristics	Absence n (%)	Presence n (%)	P-value	OR (95% C.I.)
<i>Age (years)</i>				
15-17	113 (60.1)	75 (39.9)	0.223	Ref
18-19	105 (66.5)	53 (33.5)		0.772 (0.481 - 1.240)
<i>Gender</i>				
Male	122 (67.0)	60 (33.0)	0.102	Ref
Female	96 (58.5)	68 (41.5)		1.286 (0.807 - 2.048)
<i>Religion</i>				
Non-Islam	97 (68.8)	44 (31.2)	0.064	Ref
Islam	121 (59.0)	84 (41.0)		1.487 (0.905 - 2.446)
<i>Mothers occupation</i>				
Civil servant	58 (71.6)	23 (28.4)	0.067	Ref
Non Civil servant	160 (60.4)	105 (39.6)		1.621 (0.899 - 2.923)
<i>Fathers occupation</i>				
Civil servant	113 (66.1)	58 (33.9)	0.241	Ref
Non Civil servant	105 (60.0)	70 (40.0)		1.245 (0.775 - 2.000)
<i>Family size</i>				
Small	36 (58.1)	26 (41.9)	0.374	Ref
Large	182 (64.1)	102 (35.9)		0.755 (0.401 - 1.422)
<i>Position in family</i>				
First born	51 (58.6)	36 (41.4)	0.327	Ref
Non first born	167 (64.5)	92 (35.5)		0.824 (0.477 - 1.422)
<i>Location (Density)</i>				
Low	58 (56.3)	45 (43.7)	0.093	Ref
High	160 (65.8)	83 (34.2)		0.656 (0.396 - 1.087)
<i>Equal care to the teeth and body</i>				
Yes	204 (63.6)	117 (36.4)	0.451	Ref
No	14 (56.0)	11 (44.0)		1.008 (0.416 - 2.443)
<i>Oral health knowledge</i>				
Good	138 (69.7)	60 (30.3)	0.003	Ref
Poor/Fair	80 (54.1)	68 (45.9)		1.885 (1.178 - 3.016)
<i>Toothache</i>				
No	141 (68.1)	66 (31.9)	0.016	Ref
Yes	77 (55.4)	62 (44.6)		0.635 (0.397 - 1.017)
<i>Gingival bleeding</i>				
No	101 (66.9)	50 (33.1)	0.188	Ref
Yes	117 (60.0)	78 (40.0)		0.758 (0.470 - 1.222)
<i>Dental attendance</i>				
Yes	115 (60.5)	75 (39.5)		
No	103 (66.0)	53 (34.0)	0.292	0.853 (0.532 - 1.367)
Total	218 (63.0)	128 (37.0)		

O.R=Odd ratio, C.I= Confidence interval, Ref=Reference



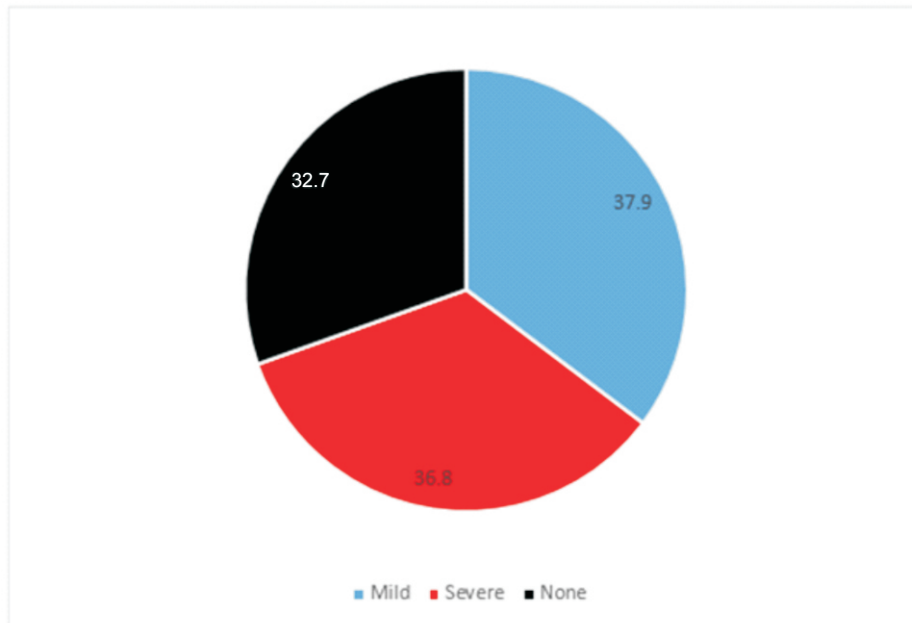


Figure 1: Severity of dental fear among participants who visited dental clinic

Discussion

Dental fear in children which may persist into adulthood can lead to dental avoidance.⁶⁷ The prevalence of self-reported dental fear (37.0%) assessed using one item questions was lower than 39.6% reported among Iran dental patients¹⁷ and Brazil dental patients (44%) using Gatchel's Scale¹⁸ and Ghana dental patients (47.3%) using Dental Fear Scale (DFS).² It was higher than values reported in Netherland (24.3%)³, Brazil (24.6%)¹⁹ and Nigerian secondary school students.²⁰ The high prevalence of dental fear among the participants may be explained by the high prevalence of toothache experience as participants with toothache had statistically more dental fear in this study. Though not statistically significant, The females had 1.286 (0.807-2.048) odds of having dental fear compared to the males in this study which was similar to the finding of Eigbobo and Obiajunwa²⁰ among 12-15 years old school children in Port Harcourt. This may be explained by the cultural norm in Nigeria where women are more able to express their feelings of fear than males.

A negative experience or infrequent dental visit during childhood can lead a grown person to present high levels of dental fear.²¹ Participants that reported dental attendance in the present study had 1.172 greater odd of reporting dental fear than those without dental attendance. This may be related to the fact that the patients without regular dental care²² and those whose first dental visit is for emergency or curative procedures report more dental fear than those whose first dental was for preventive procedures.²³ Symptomatic and curative dental attendance is a recurring decimal in Nigeria²⁴. The dental fear was severe in more than one-thirds of the participants that have visited the dental clinic. This information is important to dentists to plan dental fear screening in their clinics and increase their readiness to address the issue in routine clinical care in order to offer seamless and quality dental care.

Dental treatment experience need to be further evaluated in this group since negative dental experience heighten dental fear among individuals.

Oral health knowledge was significantly associated with dental fears with participants with poor/fair knowledge reporting more dental fears and had 1.885 (1.178-3.016) odds of reporting dental fear. Similarly, lack of adequate dental health education has been reported to result in a higher level of dental anxiety and fear.²⁵ Participants that do not give equal care to the teeth and the body reported high likelihood of dental fear in this study which emphasizes that people with good oral health attach high level of importance to their

oral health. Participants whose parents were non-civil servant had higher likelihood of reporting more dental fear lending credence to the fact that civil servants tend to attend to health of their children better. Low oral health knowledge intricately linked with erroneous beliefs which has remained a burden in Nigeria constitutes an obstacle to dental attendance through dental fear.²⁶

Conclusion

The prevalence of dental fear in this study was high and it was found to be significantly associated with oral health knowledge and toothache experience. However, it was only oral health knowledge that emerged as the determinant of dental fear.

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