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Original Article

Association Between Family Structure and Oral Health in a Group of Nigerian Children

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Abstract

Objective: Childhood oral health is crucial for overall well-being, yet dental caries and periodontal diseases remain significant public health challenges in low- and middle-income countries (LMICs) like Nigeria. Family structure, defined by household composition and dynamics, influences children's health outcomes, including oral health. This study investigates the association between family structure and oral health in children from the South-South region of Nigeria.

Materials and Methods: A cross-sectional study was conducted among 406 children aged 6–15 years attending the Paediatric Dental Outpatient Clinic at the University of Benin Teaching Hospital. Data were collected through structured interviews and clinical examinations. Family structure, oral hygiene practices, and caries severity were assessed using validated tools. Chi-square test was used to identify significant associations.

Results: Most participants lived in monogamous households (90%), and over 93% lived with both parents. Children from polygamous families had higher caries severity compared to those from monogamous households ($p<0.001$). Similarly, children living with both parents had better oral hygiene practices, including toothbrushing and fluoride use, but also exhibited severe caries, such as pulpal involvement and abscesses. Birth order had no significant influence on caries severity, although first-born children showed slightly better oral hygiene practices.

Conclusion: Family structure significantly impacts children's oral health in South-South Nigeria. Children from polygamous households and those living with both parents exhibited higher caries severity. Further community-based studies are recommended to explore these findings across diverse LMIC settings for targeted interventions and policy development.

Keywords: Caries severity, childhood oral health, family structure

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Introduction

Oral health in children is critical because of the role it plays in their nutrition, speech development, self-esteem, and quality of life.[1–3] Despite its importance, childhood oral health issues, particularly dental caries and periodontal diseases, persist as significant public health challenges globally, with a disproportionate burden observed in low- and middle-income countries (LMICs), such as Nigeria.[4–7] In many cases, these oral health problems are compounded by social determinants such as family structure, socioeconomic status, and parental involvement.[8,9]

Family structure, which is defined by the composition and dynamics within a household, has increasingly been recognized as an influential factor in children's health outcomes.[10] Traditional family units, extended families, single-parent households, and blended families each create unique environments that can impact a child's access to oral healthcare,[11] dietary habits,[12] and oral hygiene practices,[11,13] behavioral adaptation needed to adjust to a disease or treatment,[10,14,15] and the financial cost of health care.[16] Members of the same family can be expected to share the risk factors for their oral health, oral health-related lifestyles, and oral health-care-seeking pattern and preference.[17–21] In many regions of Nigeria, family dynamics may be shaped by cultural norms, economic pressures, and urban-rural disparities.[22] The regions, rich in cultural diversity, face a range of challenges, including limited access to dental care services, a high burden of poverty, and health inequalities.[23] Understanding the association between family structure and children's oral health is therefore vital. Identifying the role family structure plays in oral health could provide valuable insights for targeted interventions, health education strategies, and policy development. However, evidence that family structure plays these important roles in children's oral health has not been well documented, making it impossible to leverage it when planning oral healthcare for children in our resource-limited setting. This study aims to investigate the association between family structure and children's oral health in the South-South region of Nigeria. By exploring this relationship, we seek to uncover specific family-related factors that influence oral health outcomes and contribute to oral health inequalities.

Materials and Methods

Human ethics and consent to participate

This study received ethical approval from the Health Research and Ethics Committee of the University of Benin Teaching Hospital (UBTH) prior to its commencement (Protocol No: ADM/E 22/A/VOL. VII/148308151). After a thorough explanation of the study objectives, procedures, potential risks, and benefits, written informed consent was obtained from parents or legal guardians. Assent was additionally sought from children aged 8 years and above to ensure voluntary participation.

Study design, population, and setting

This cross-sectional study was conducted among children aged 6 to 15 years attending, for the first time, the Paediatric Dental Outpatient Clinic at the University of Benin Teaching Hospital (UBTH), Benin City, Edo State in the South region of Nigeria. Participants were enrolled consecutively following written informed consent from parents or guardians and assent from older children, where applicable.

Data collection

The principal investigator collected data through structured interviews and clinical examinations. For children aged 6–8, parents or legal guardians corroborated responses regarding oral health practices. Children aged 9 years and older provided their responses directly.

The structured questionnaire elicited information on sociodemographic characteristics such as age, sex, and socioeconomic status (SES), family structure (categorized as monogamous or polygamous), family setting (categorized as living with both parents, a single parent or a legal guardian or relatives), family composition (number of siblings and birth rank) and oral hygiene practices (toothbrushing frequency, and the use of fluoridated toothpaste, dental floss, and mouthwashes) (Appendix 1, 2).

Oral hygiene status was assessed using the Simplified Oral Hygiene Index (S-OHI) by Green and Vermillion,[24] a validated tool used globally to estimate the level of debris, dental plaque and calculus deposition. Caries severity, specifically the severity of untreated dental caries with advanced complications such as pulp involvement, ulcerations, fistulas, and abscesses, was assessed using the Pulpal involvement, Ulceration due to tooth fragment, Fistula and Abscess (PUFA/pufa) index.[25]

Data analysis

Analysis of the data was done using IBM SPSS Statistics version 30 (IBM Corp., Armonk, NY, USA). Descriptive statistics were presented as frequencies, means, and standard deviations for continuous and categorical variables. SES was determined using the Blishen scale,[26] which combines father's occupation, categorized into professional/skilled, semi-

Table 1. Association between sociodemographic variables and family characteristics

Variables	Age (years)			Gender		SES		
	6–8	9–11	12–15	Male	Female	High	Middle	Low
Family setting								
Both parents	156 (95.2)	117 (97.5)	114 (93.5)	185 (96.4)	202 (94.4)	229 (96.6)	97 (94.2)	61 (92.5)
Only mother	5 (3.0)	1 (0.8)	4(3.3)	4 (2.1)	6 (2.8)	3 (1.3)	4 (3.9)	3 (4.5)
Mother and stepfather	1 (0.6)	0 (0)	2 (1.6)	1 (0.5)	2 (0.9)	2 (0.8)	0	1 (1.5)
Father and stepmother	2 (1.2)	2 (1.7)	2 (1.6)	2 (1.0)	4 (1.9)	3 (1.3)	2 (1.9)	1 (1.5)
Total	164 (100.0)	120 (100.0)	122(100.0)	192 (100.0)	214 (100.0)	237 (100.0)	103 (100)	66 (100)
p	0.630			0.812		0.537		
Family structure								
Monogamous	156 (95.2)	117 (97.5)	110 (90.2)	181 (94.3)	202 (94.3)	229 (96.6)	97 (94.2)	57 (86.4)
Polygamous	4 (2.4)	0 (0)	8 (6.6)	8 (4.2)	4 (1.9)	7 (3.0)	4 (3.9)	1 (1.5)
Others	2 (1.2)	2 (1.7)	2 (1.6)	2 (1%)	4 (1.9)	0 (0)	1 (1.0)	5 (7.6)
Single parent	2(1.2)	1 (0.8)	2 (1.6)	1 (0.5%)	4 (1.9)	1 (0.4)	1 (1.0)	3 (4.5)
Total	164 (100.0)	120 (100.0)	122 (100.0)	192 (100.0)	214 (100.0)	237 (100.0)	103 (100.0)	66 (100.0)
p	0.131			0.287		**<0.001**		
Birth order								
First child	63 (38.5)	43 (35.9)	42 (34.4)	69 (35.9)	79 (36.9)	89 (37.6)	38 (36.9)	21 (31.8)
Middle child	45 (27.4)	42 (35.0)	50 (41)	61 (31.8)	76 (35.5)	86 (36.3)	29 (28.2)	22 (33.3)
Last child	43 (26.2)	28 (23.3)	28 (23.)	51 (26.6)	48 (22.4)	52 (21.9)	30 (29.1)	17 (25.8)
Only child	13 (7.9)	7 (5.8)	2 (1.6)	11 (5.7)	11 (5.2)	10 (4.2)	6 (5.8)	6 (9.1)
Total	164 (100.0)	120 (100.0)	122 (100.0)	192 (100.0)	214 (100.0)	237 (100.0)	103 (100.0)	66 (100.0)
p	0.136			0.748		0.450		

SES: Socioeconomic status

skilled, and unskilled with mother's education, categorized into tertiary, secondary, and primary or no formal education. The composite score (ranging from 1 to 5) was further categorized into high SES: Upper class (score 1) and upper-middle class (score 2), middle SES: Middle class (score 3), and low SES: Lower-middle class (score 4) and lower class (score 5). This classification has been validated and applied in similar studies within the region.[27]

Associations between demographic factors (age, sex, socioeconomic status), family structure, family setting, and oral health outcomes (oral hygiene and caries status) were tested using chi-square analysis. Variables with significant associations ($p<0.05$) were further subjected to logistic regression analysis to identify predictors of oral health outcomes. Results were presented using tables, charts, and summary statistics.

Results

A total of 406 study participants were recruited for this study; the 6–8-year-olds constituted 40.4% of the study population, females made up 52.7%, while those from the high SES made up 58.4% of the study population (Table 1).

Most children across all groups lived with both parents, consistently above 93% across age groups, gender, and SES. Living with only the mother was the second most common arrangement, ranging from 0.8% to 4.5%. Few children lived in families with a mother and stepfather or father and stepmother, with proportions not exceeding 1.6% in any group (Table 1). The p-values (0.630 for age, 0.812 for gender, and 0.537 for SES) indicate no statistically significant differences in family settings across these variables (Table 1).

Concerning family structure, monogamous families were predominant, with percentages above 90% in the age groups and gender groups. Notably, there was a slight decline among SES groups, where the low SES category had the lowest proportion (86.4%). Polygamous families were observed more frequently in the low SES group (7.6%) than the others, though these remained minimal overall. Other family structures and

Table 2. Association between family setting and oral hygiene

Oral hygiene variables	Family setting				Total	p
	Child lives with both parents	Child lives with mother	Child lives with mother and stepfather	Child lives with father and stepmother		
	n (%)	n (%)	n (%)	n (%)	n (%)	
Oral hygiene status						
Good	80 (97.6)	2 (2.3)	0 (0.0)	0 (0.0)	82 (100.0)	0.569
Fair	266 (94.7	7 (2.5)	2 (0.7)	6 (2.1)	281 (100.0)	
Poor	41 (95.4)	1 (2.3)	1 (2.3)	0 (0.0)	43(100.0)	
Flossing						
Yes	18 (94.7)	1 (5.3)	0 (0.0)	0 (0.0)	19 (100.0)	0.783
No	369 (95.3)	9 (2.3)	3 (0.8)	6 (1.6)	387 (100.0)	
Toothbrushing						
Irregularly	29 (96.7)	1 (3.3)	0 (0.0)	0 (0.0)	30 (100.0)	0.976
Once daily	284 (95.3)	7 (2.3)	2 (0.7)	5 (1.7)	298 (100.0)	
Twice daily	74 (94.9)	2 (2.6)	1 (1.3)	1 (1.3)	78 (100.0)	
Use of fluoride toothpaste						
Yes	367 (95.1)	10 (2.6)	3 (0.8)	6 (1.6)	386 (100.0)	0.727
No	20 (100)	0 (0.0)	0 (0.0)	0 (0.0)	20 (100.0)	
Use of mouthwash						
Yes	24 (96.0)	1 (4.0)	0 (0.0)	0 (0.0)	25 (100.0)	0.793
No	362 (95.0)	10 (2.6)	3 (0.8)	6 (1.6)	381 (100.0)	

single-parent households were relatively rare (Table 1). The p-values suggest no significant differences across age and gender, but the SES comparison yielded a significant difference ($p<0.001$), pointing to variability in family structure based on SES (Table 1).

Table 1 also shows the pattern of the participants' birth order. The distribution across first-, middle-, and last-born children was relatively balanced, with first-borns comprising approximately 35–38% of the samples across all age groups, gender and SES groups. The percentage of middle children was slightly higher (41%) for 12–15 years and 36.3% for middle SES. Children without siblings were the least represented, particularly in the 12–15 age group (1.6%) and the middle SES group (4.2%). No statistically significant differences were observed across age, genders, or SES groups for birth order, as indicated by the p-values (0.136, 0.748, and 0.450, respectively) (Table 1).

Children living with both parents predominantly had better oral hygiene (97.6% good) compared to other settings. Flossing was low across all settings, with only 18 (4.7%) children reporting it, most of whom lived with both parents. Tooth brushing twice daily was higher among children with both parents (94.9%) and lower in other settings. The use of fluoride toothpaste and mouthwash was nearly exclusive to children living with both parents (95.1% and 100%, respectively). P-values for all comparisons (oral hygiene, flossing, brushing, mouthwash, and toothpaste use) showed no significant differences across family settings ($p>0.05$) (Table 2).

Monogamous family structures showed the highest percentages of good oral hygiene (96.4%) and better oral hygiene practices overall, including brushing twice daily (96.2%) and fluoride toothpaste use (94.0%). Polygamous structures had a slightly higher prevalence of poor oral hygiene (9.3%) and lower engagement in twice-daily brushing (2.6%) or fluoride toothpaste use (3.1%). The category labeled as "others" (representing a legal guardian and/or a relative such as a grandparent, uncle or aunt) and single-parent families showed negligible contributions to good oral hygiene behaviors. No significant differences were found in oral hygiene behaviors when analyzed by family structure ($p>0.05$) (Table 3).

First-born children had better oral hygiene overall (34.1% good) and were more likely to floss (47.4%) than the other birth orders. Middle children showed a balanced distribution but slightly lagged in twice-daily

Table 3. Association between family structure and oral hygiene

Oral hygiene variables	Family structure				Total	p
	Monogamous	Polygamous	Others	Single parent		
	n (%)	n (%)	n (%)	n (%)	n (%)	
Oral hygiene status						
Good	79 (96.4)	1 (1.2)	1 (1.2)	1 (1.2)	82 (100.0)	0.207
Fair	265 (94.3)	7 (2.5)	5 (1.8)	4 (1.4)	281 (100.0)	
Poor	39 (90.7)	4 (9.3)	0 (0.0)	0 (0.0)	43(100.0)	
Flossing						
Yes	18 (94.7)	1 (0.0)	0 (0.0)	1 (5.3)	19 (100.0)	0.319
No	369 (95.3)	9 (2.3)	3 (0.8)	6 (1.6)	387 (100.0)	
Toothbrushing						
Irregularly	29 (96.7)	0 (0.0)	1 (3.3)	0 (0.0)	30 (100.0)	0.715
Once daily	279 (93.6)	10 (3.4)	4 (1.3)	5 (1.7)	298 (100.0)	
Twice daily	75 (96.2)	2 (2.6)	1 (1.3)	0 (0.0)	78 (100.0)	
Use of fluoride toothpaste						
Yes	363 (94.0)	12 (3.1)	6 (1.6)	5 (1.3)	386 (100.0)	0.738
No	20 (100)	0 (0.0)	0 (0.0)	0 (0.0)	20 (100.0)	
Use of mouthwash						
Yes	23 (92.0)	2 (8.0)	0 (0.0)	0 (0)	25 (100)	0.387
No	360 (94.5)	10 (2.6)	6 (1.6)	5 (1.3)	381 (100)	

brushing (33.3%). Last-born and only children had lower rates of good oral hygiene (30.5% and 3.7%, respectively) and less frequent engagement in flossing or other preventive measures. Statistical analysis did not show significant differences in oral hygiene practices across birth orders (p>0.05) (Table 4).

Severe caries (pulpally involved, ulcerated, fistula, or abscessed) were rare across all family settings. Children living with both parents showed the highest proportion of pulp involvement (98.4%) and abscesses (78.9%). No caries-related ulcers or fistulae were observed in children from settings other than those living with both parents. A significant association was found between family setting and caries severity (p<0.001) (Table 5).

Severe caries was rare in all family structures, but children from polygamous families had slightly higher severity (e.g., 15.8% abscesses). No ulcers or fistulae were observed in any family structure. A significant association was found between family structure and caries severity (p<0.001) (Table 5).

Severe caries was rare across all birth orders. First-born children accounted for 47.4% of abscesses, while no ulcers, pulp involvement, or fistulae were observed in middle or only children. There was no significant association between birth order and caries severity (p=0.821) (Table 5).

Discussion

Family dynamics significantly shape children's oral health outcomes by influencing their brushing routines, diet choices, snacking habits, and frequency of dental visits.[28] Family resources, be they economic, educational, or social, play a crucial role in shaping oral health and health-seeking behaviours.[8] Households with two parents or extended family support often enjoy the benefits of pooled incomes and shared responsibilities, which can lead to improved access to dental services, better nutritional choices, and more consistent daily oral hygiene practices.[11] In contrast, single-parent families might encounter financial and time limitations that prevent them from regularly scheduling dental visits or effectively overseeing proper brushing routines.[29,30] Additionally, families with higher educational resources tend to recognize the value of preventive dental care, resulting in more informed choices regarding diet, snacking, and routine dental check-ups.[31] This awareness promotes a proactive stance toward managing children's oral health, whereas families under significant stress or internal conflict might unintentionally overlook oral hygiene practices, thereby elevating the risk of oral diseases.[32]

To address the impact of family dynamics on the caries status and oral hygiene of children, there is a need to bridge the gap between evidence-based practices

Table 4. Association between birth order and oral hygiene

Oral hygiene variables	Birth order				Total	p
	First child	Middle child	Last child	Only child		
	n (%)	n (%)	n (%)	n (%)	n (%)	
Oral hygiene status						
Good	28 (34.1)	26 (31.7)	25 (30.5)	3 (3.7)	82 (100.0)	0.812
Fair	106 (37.7)	96 (34.2)	63 (22.4)	16 (5.7)	281 (100.0)	
Poor	14 (32.6)	15 (34.9)	11 (25.6)	3 (7.0)	43(100.0)	
Flossing						
Yes	9 (47.4)	7 (36.8)	2 (10.5 1(5.3)	1(5.3)	19 (100.0)	0.517
No	139 (35.9)	130 (33.6)	97 (25.1)	21 (5.4)	387 (100.0)	
Toothbrushing						
Irregularly	10 (33.4)	13 (43.3)	4 (13.3)	3 (10.0)	30 (100.0)	0.599
Once daily	111 (37.2)	98 (32.9)	73 (24.5)	16 (5.4)	298 (100.0)	
Twice daily	27 (34.7)	26 (33.3)	22 (28.2)	3 (3.8)	78 (100.0)	
Use of fluoride toothpaste						
Yes	142 (36.8)	131 (33.9)	93 (24.1)	20 (5.2)	386 (100.0)	0.702
No	6 (30.0)	6 (30.0)	6 (30.0)	2 (10.0)	20 (100.0)	
Use of mouthwash						
Yes	13 (52.0)	8 (32.0)	3 (12.0)	1 (4.0)	25 (100.0)	0.312
No	135 (35.4)	129 (33.9)	96 (25.2)	21 (5.5)	381 (100.0)	

and real-world applications. This study aims to develop a deeper understanding of the family-related factors that account for the different oral health behaviors and outcomes among children—factors that could serve as barriers to the proper implementation of strategies to improve the oral health of children in resource-limited settings. It provides a good overview of the family dynamics, as the family setting and birth order were similar across age, gender, and SES.

In this study, family setting was significantly associated with caries severity, suggesting that children living with both parents had better oral health outcomes. This finding is similar to what has been previously reported.[33,34] Family structure in this study also showed significant differences in caries severity and oral hygiene practices, with better outcomes associated with children living in monogamous households and with both parents. This is similar to reports from previous studies.[35–38] These findings may be as a result of the positive synergistic effect of both parents' knowledge, attitude and practice.[39]

Another critical finding of this study was that children living with both parents had a greater proportion of pulpally involved carious teeth and abscesses. This finding is notable because one would have expected that children living with both parents would have better preventative behaviors, better access to dental services and so ultimately should have less severe cases of dental caries. Could it be wrong to assume that the oral care of a child by both parents will translate to better oral health outcomes? In two-parent households, each parent may assume the other is responsible for monitoring the child's oral hygiene, leading to inconsistent supervision or neglect of daily brushing and flossing.[40] It may also be as a result of overindulgence. In some cases, both parents may spoil the child with sugary treats or allow leniency in oral hygiene as a way of expressing affection.[33] This critical finding should moderate our expectations on the role of parents in the oral health of their children, especially since it has been reported that many parents' sound knowledge of oral health may not match their attitudes and practices.[41]

Families with lower SES have low income and are often associated with a greater frequency of dental caries.[42] This may be because of the economic difficulties they face, which may have a negative impact on family food security and dietary quality.[43] Family size and birth order have been reported to affect the amount of the resources available to siblings and have been linked to children's health outcomes.[44] In this study, birth order did not significantly influence caries severity. However, first-born children generally had better oral hy-

Table 5. Association between family characteristics and caries severity (pufa/PUFA)

Variables	Caries severity				
	No caries	Pulpally involved	Ulcerated	Fistula	Abscessed
Family setting					
Both parents	306 (95.9)	63 (98.4)	3 (100)	0 (0)	15 (78.9)
Only mother	7 (2.2)	1 (1.6)	0 (0)	1 (100)	1 (5.3)
Mother and stepfather	2 (0.6)	0 (0)	0 (0)	0 (0)	1 (5.3)
Father and stepmother	4 (1.3)	0 (0)	0 (0)	0 (0)	2 (10.5)
Total	319 (100)	64 (100)	3 (100)	1 (100)	19 (100)
p	**<0.001**				
Family structure					
Monogamous	303 (95)	61 (95.3)	3 (100)	0 (0)	16 (84.2)
Polygamous	8 (2.5)	0 (0)	0 (0)	1 (100)	3 (15.8)
Others	3 (0.9)	3 (4.7)	0 (0)	0 (0)	0 (0)
Single parent	5 (1.6)	0 (0)	0 (0)	0 (0)	0 (0)
Total	319 (100)	64 (100)	3(100)	1 (100)	19 (100)
p	**<0.001**				
Birth order					
First child	114 (35.7)	23 (35.9)	2 (66.7)	0 (0)	9 (47.4)
Middle child	106 (33.2)	24 (37.5)	1 (33.3)	0 (0)	6 (31.6)
Last child	81 (25.4)	13 (20.3)	0 (0)	1 (100)	4 (21.1)
Only child	18 (5.6)	4 (6.3)	0 (0)	0 (0)	0 (0)
Total	319 (100)	64 (100)	3 (100)	1 (100)	19 (100)
p	0.821				

pufa/PUFA: Pulpal involvement, Ulceration due to tooth fragment, Fistula and Abscess

giene practices compared to last-born or only children. Previous studies conducted in Nigeria showed that children with three or more siblings have a higher prevalence of dental caries compared to those with 0–2 siblings.[11] Research on the relationship between birth order, family size, and caries has produced mixed results.[45] Although the reason for the effect of birth order on the oral health of children is not fully understood, a previous study suggested that there is a possibility that later-born children are more likely to consume sugar-containing products than first-born children.[46] This study revealed a few significant findings that not only bridge existing knowledge gaps but also inform culturally appropriate strategies to promote oral health in children within this region and similar settings globally.

Conducting the study within a tertiary hospital setting introduces a notable limitation that must be acknowledged. This setting could lead to an overestimation of the prevalence and severity of oral diseases, as individuals seeking hospital care are more likely to have underlying conditions or complications that prompt them to seek treatment. Future research could benefit from including participants from varied settings, such as community clinics or school-based programs, to obtain a more balanced view of oral health trends and the influence of family structure across different populations. Additionally, assessing birth order effects would ideally require data from all siblings. Therefore, future studies should consider a family-based approach for a more comprehensive analysis.

Conclusion

The findings of this study indicate a significant association between family structure and the oral health status of children in the South-South region of Nigeria. Specifically, children living with both parents and those from polygamous households exhibited a higher severity of dental caries. Future studies can build on this hospital-based study by focusing on children screened from the communities, schools, or religious congregations, providing valuable insights applicable to diverse populations within the LMIC context.

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Appendix 1

Questionnaire					
Age:					
Gender:	Female		Male		
Tribe:					
Place of birth:					
Mother's level of education:	Primary		Secondary		Tertiary
Father's level of education:	Primary		Secondary		Tertiary
Mother's occupation:					
Father's occupation:					
Family structure:					
Single parent….	a) only mother	b) mother and stepfather	c) only father	d) father and stepmother	
Monogamous family			Polygamous family		
Other relatives other than parents (grand ma, grand pa, aunties, uncles, guardians etc)					
Number of children:					
Birth order/ position of the child:					
Brushing frequency:	a) once a week	b) once every other day	c) once daily	d) twice daily	e) more than twice daily
Brushing with fluoride toothpaste:	a) never	b) rarely	c) occasionally d) always		
Use of dental floss					
Use of mouthwashes					
Simplified Oral hygiene index score:					
Oral hygiene status:	a) poor	b) fair	c) good		
Standing teeth:					
DMFT/dmft score:					
Decayed/decayed teeth:					
Missing/missing teeth:					
Filled/filled teeth:					
PUFA/pufa score:					
Pulpally involved teeth:					
Ulcerated teeth:					
Teeth with Fistula:					
Teeth with Abscess:					

Appendix II

Participants information sheet/ informed consent form
Title of study: Association between family structure and oral health in a group of nigerian children
Authors: Onyebuchi Josephine Anago, Nneka Maureen Chukwumah, John Olajide Olawepo, Ngozi Idemili-Aronu, Echezona E Ezeanolue, Adebola Oluyemisi Ehizele
Location: University of Benin Teaching Hospital, Benin City, Nigeria.
Aim of the study
This study aims to investigate the association between family structure and the oral health of children in the South-South region of Nigeria.
Study procedures
Participants in this study will be given a questionnaire to fill and examined for their oral health which will also be documented on the questionnaire.
Confidentiality
The information regarding participation in this study will be kept confidential. The results of this study may be presented at professional and scientific conferences; and/or published in scientific journals. The results will not contain any names; or any identification of the participants. The examination results will be available to the participant after completing the study upon request.
Risks and discomforts
There are no risks involved in this study.
Benefits
There will be no financial gratification for participating in this study however, your child/ward will help to contribute to the body of knowledge and advancement in clinical practice.
Financial sponsorship
This research is self-sponsored.
INFORMED CONSENT FORM The study has been duly explained to me in a language I understand, and I have had the opportunity to ask questions which have been answered satisfactorily. I, _____, have agreed to allow my child/ward to participate in the above study. Signature: Date: For further questions or clarifications please feel free to contact any of the addresses below.