



Oral Health Status of Children in an Internal Displace Persons' Camp in Nigeria

Nathan Ukuoghene Ikimi^{1*}, Brenda Ighoteguono Mohammed², Ayegba Ebikwo³, Nasir Mukaffa¹

¹Dental and Maxillofacial Department, State House Medical Centre, State House Abuja, Nigeria

²Department of Preventive Dentistry, University of Benin, Benin City, Edo State, Nigeria

³Dental and Maxillofacial Department, University of Abuja Teaching Hospital, Gwagwalada, Abuja, Nigeria

***Corresponding Author:** Nathan Ukuoghene Ikimi, Dental and Maxillofacial Department, State House Medical Centre, State House Abuja, Nigeria.

Received: September 04, 2018; **Published:** September 18, 2018

Abstract

This is a study that was carried out to determine the oral health status of children in an internal displaced persons' camp in Durumi Abuja, Nigeria. The study population consisted of 138 children, 83 males, 55 females, between the ages of 2-15 years old taking shelter in the camp and our examination tool consisted of the Simplified Oral Hygiene Index (OHI-S) with the scoring method where oral hygiene is judged as good (0.1 - 1.2), fair (1.3 - 3.0) and poor (3.1 - 6.0). Data obtained was analysed using SPSS 23 (IBM Corp., Armonk, NY, USA). Categorical data was represented using frequency and percentages, while numeric data was represented using mean and standard deviation when normally distributed; median and interquartile range when skewed. The Children were divided into 5 age-groups and the grouping revealed the age-group 8 - 10 years old as the highest proportion of children present. Males recorded a higher mean oral hygiene index score than females, although, both gender recorded high debris index scores comparable to children from lower income families. Tukey's test (Post-Hoc) showed a linear increase in calculus index according to age with 2 - 4 years having the lowest calculus index while 11 - 13 years had the highest calculus index and this difference was statistically significant.

Thus, the children in the internal displaced persons' camp in Durumi Abuja have poor oral health status which could be attributed to a lack of good oral hygiene practice over an extended period of time. While medical care is rendered to these children, we would like to recommend strongly that their oral health should not be neglected.

Keywords: Calculus Index; Camp; Children; Oral Hygiene Index; Oral Health Status

Abbreviations

FCT: Federal Capital Territory; IBM: International Business Machines; IDP: Internal Displaced Persons; NGO: Non-Governmental Organization; OHI: Oral Hygiene Index; PHC: Primary Health Care; WHO: World Health Organization; SPSS: Statistical Package for the Social Sciences; UNICEF: United Nations International Children's Emergency Funds

Introduction

An internal displaced person (IDP) is someone who is forced to flee from his or her home as a result of internal conflicts, per-

secution or natural disasters but who remains within his or her country's borders [1]. IDPs do not often cross international borders and they seek shelter in nearby villages, towns, schools, camps or settlements. These displaced ones are different from refugees, since "a refugee is someone who has been forced to flee his or her country because of persecution, war or violence and crosses international borders to neighbouring countries" [2]. Moreover, refugees are known likely not to return home but rather seek refugee status in the host countries and stay possibly because of fear that they might be killed if they return but IDPs on the other hand often may like to return back when the insurgency stops and safety is guaranteed.

Insurgency in Nigeria began in a north eastern state known as Borno State, but later spread to Bauchi State, Kano State and Yobe State [3]. It started with an Islamic group which has as her main goal the establishment of an Islamic state in Nigeria and opposes Western religion, culture and education [4]. The United Nations international children's emergency funds (UNICEF) reported in September 2015 that eight (8) northern states with established IDP camps reported a total number of 2,049,810 internally displaced persons (IDP) among which were 1,188,890 children [5]. A more recent report of UNICEF claims that this religious insurgency in the three North-eastern states of Adamawa, Borno and Yobe states in Nigerian has resulted to about 7.7 million IDP among which are 4.5million children [6]. While primary health care (PHC) was provided to 97,980 children in 2015, UNICEF and the Nigerian government in collaboration with other Non-governmental organisations (NGO) provided PHC to 195,804 persons including children and pregnant women in 2018 [5,6]. The primary health care (PHC) delivered has been vaccination against measles for children 5 months to 15 years of age, Vitamin A supplementation for children, deworming of children with Albendazole tablets, distribution of mosquito nets, treatment of acute respiratory infection, acute watery diarrhoea in children and other medical conditions [6], but there is no record of giving attention to the oral health of these children, demonstration of the right tooth brushing techniques and oral hygiene instructions, distribution of free toothbrushes and toothpaste, water fluoridation or oral examination of children in these IDP camps.

The practice of oral hygiene involves the act of keeping the mouth clean through regular tooth brushing and the use of the dental floss to clean between the teeth. When this practice is not done properly and on a regular basis, the oral health status becomes poor and compromised with the presence of dental caries, gingivitis and periodontitis [7]. It has been reported that even in a developed economy like that of the United States of America, dental caries is still one of the most common chronic conditions of childhood such that about 1 out of 5 (20%) children aged 5 to 11 years have at least one untreated decayed tooth [8]. Various studies have been done on children in other countries such as the study of Sayed., et al. on the prevalence of gingivitis among children in Tehran [9], Folaranmi., et al. study on children age 3 days to 15 years [10] and the study of Ojehanon., et al. on the oral hygiene status of children in an orphanage [11], however, in our search, we are yet to come across any study on the oral health status of children in IDP camps in Nigeria especially since the camps are not the normal homes but temporary places of shelters.

While this research is not meant to belittle the efforts of UNICEF, NGOs and the Nigeria government involved in humanitarian activities in the states affected by religious insurgency, the objective of this study is to determine the oral health status of children in the internal displace persons' camp (IDP) and recommend strategies to the government, non-governmental organisations (NGOs) and all stake-holders, aimed at improving the oral health status of these children since the consequences of oral diseases and untreated oral health challenges is the inability of the child to eat, sleep and study [12]. These poor oral health consequences could have serious negative impact on a child who has been displaced from his usual safe and peaceful home environment.

Materials and Methods

This is a cross-sectional study of 138 children between 2 - 15 years of age residing in the camp of internal displace persons (IDP) in Durumi Abuja, Nigeria. Consent was granted by the management of the IDP camp in Durumi. The children were divided into 5 age-groups 2 - 4, 5 - 7, 8 - 10, 11 - 13 and above 14; examined and their biodata taken by one of the examiners who could speak the Hausa language. For those who are not aware of their age, the mothers were asked for that information.

Oral examination was done with children sitting under natural light by two examiners after calibration to reduce intra and inter-examiner errors. The simplified oral hygiene index (OHI-S) which differs from the oral hygiene index (OHI) in the number of tooth surfaces score (6 instead of 12) was used [13]. For the deciduous teeth, index teeth recorded was the labial surfaces of the 54, 61, 82 and the lingual surface of 75; for children with mixed dentition we added the buccal surface of 26 and the lingual surface of 46 [14]; in the absence of deciduous dentition the buccal surfaces of 16, 26, lingual surfaces of 36, 46 and finally the labial surfaces of 11, 31 was examined and recorded [13]. In the absence of index teeth, the next adjacent teeth was examined and recorded. Scoring was done using the OHI-S scoring method where oral hygiene is judged as good (0.1 - 1.2), fair (1.3 - 3.0) and poor (3.1 - 6.0) [13]. Oral hygiene instruction was then given and easy tooth brushing technique was demonstrated with the children actively participating.

The children were rewarded after the examination with free tooth brushes and tooth paste. Data was recorded and statistically calculated using SPSS 23 (IBM Corp., Armonk, NY, USA). Categorical data was represented using frequency and percentages, numeric data was represented using mean and standard deviation when normally distributed; median and interquartile range when

skewed. Mean comparison of index scores was carried out using independent-t test when two groups are compared and ANOVA when more than two. Post-Hoc test was done to find out the age group with the most poor oral hygiene status.

Results

Variable	Frequency (n = 138)	Percentage
Gender		
Male	83	60.1
Female	55	39.9
Age group (Years)		
2 - 4	34	24.6
5 - 7	33	23.9
8 - 10	41	29.7 ^β
11 - 13	25	18.1
≥ 14	5	3.6

Table 1: Age and gender distribution of participants.
^β Highest number of children were of this age group.

This study involved 138 (one hundred and thirty eight) children consisting of 83 males and 55 females. They were divided into 5 age-groups and the age-group 8 - 10 years old constituted the highest proportion of children in the study while children over 14 years were the least represented in the study.

	Mean	SD	Range
Debris index	1.20	0.3	0.0, 2.4
Calculus index	0.9	0.4	0.0, 2.0
Oral hygiene index	2.2	0.5	0.0, 4.0

Table 2: Dental index scoring among participants.

Table 2 shows the index score of participants. The mean oral hygiene index score for the group is 2.2 implying that the children's oral hygiene is in the fair range.

	Male	Female	t-value	p-value
Debris index	1.28 ± 0.3	1.26 ± 0.3	0.497	0.620
Calculus index	0.95 ± 0.4	0.94 ± 0.4	0.193	0.848
Oral hygiene index	2.23 ± 0.6	2.19 ± 0.6	0.394	0.694

Table 3: Mean comparison of dental index score according to gender.

The mean oral hygiene index score recorded was higher in the males than in females, however, both gender recorded higher debris index scores.

	Debris index	Calculus index	Oral hygiene index
Age group (Years)			
2 - 4	1.27 ± 0.3	0.84 ± 0.4	2.12 ± 0.5
5 - 7	1.27 ± 0.3	0.87 ± 0.4	2.14 ± 0.7
8 - 10	1.26 ± 0.3	1.00 ± 0.3	2.26 ± 0.5
11 - 13	1.26 ± 0.3	1.12 ± 0.2	2.38 ± 0.3
≥ 14	1.36 ± 0.4	0.88 ± 0.4	2.24 ± 0.7
p-value	0.965	0.041*	0.385

Table 4: Mean comparison of dental index score according to age group.

* Significant at < 0.05.

Tukey's test (Post-Hoc) shows linear increase in calculus index according to age, 2 - 4 years have lowest calculus index while 11 - 13 years have the highest calculus index. The difference between these groups is significant

Discussion

Internal displaced persons (IDPs) have been moved from their homes and communities as a result of internal crises which could be religious in nature or political and these persons have children who are usually worse affected by these crises. These children often go without a lot of essential needs, good oral health being one

of them. The parents and their children are placed in camps and settlements from their original communities and they usually lack basic necessities such as clean water, good food, good health care and drugs. Under these circumstances, good oral health care is often of least concern to the children and their parents whose main worries are where to get food, water and clothing. Nevertheless, poor oral health has negative impact on the child. Neglect of oral hygiene practices will lead to build up of plaque, development of dental caries, pain, inability to eat and play, study, halitosis, loss of teeth etc [12]. Poor oral hygiene will also impact negatively on the psychological development of these children [15].

Our survey of an IDP camp revealed that the oral health status of the children was fair (Mean OHI index score, 2.2), with a higher mean debris index score across all age-groups. This finding is comparable to that reported in previous studies where a higher debris score in children from lower socioeconomic status was noticed [16,17]. This finding correlates with poor oral hygiene practices by these children. It is also in agreement with reports of Batwala, et al. that the quantity of plaque and calculus deposits is directly related to lower socio-economic status [18].

In our study, it was noticed that the mean calculus index increased with the age of the children, which implies that the deposits of plaque had remain unremoved over a long period of time due to lack of good oral hygiene practice such as regular tooth brushing and flossing and the plaque had calcified. This is also in consonance with reports from other studies which stated an increase in calculus deposits with increasing age, although children in these other studies did not have a complete lack of oral hygiene materials like the ones in our study but they too required knowledge and were not motivated [9,11,18]. This increase of calculus deposits with age was statistically significant in our study.

Debris and calculus index scores were higher among the males than females. This is comparable to studies done in other parts of Nigeria [9,17,19] and elsewhere in Africa [18] where females were reported to have better oral hygiene practices than their male counterparts. This could be attributed to the natural interest of females to be more concern about their appearance and not entirely on having knowledge of the consequences of poor oral health.

Conclusion

The oral health status of children in the IDP camp was fair, however an increase in calculus was noticed as the children grew older and if no intervention is done, this could lead to periodontal disease and tooth loss at an early age.

It is our recommendation that while attention is given to the physical health of children in IDP camps by UNICEF, NGOs and the relevant governmental authorities, serious consideration should also be given to the oral health status of the displaced children. Oral health education and practices should be taught to children in IDP camps regularly to improve their oral hygiene status and to prevent the development of tooth decay or periodontal problems.

Other interventions could also include manufacturers of tooth brushes and tooth paste distributing free dental materials while joining hands in organising oral hygiene talks with demonstrations and active participation of the children on the regular and effective use of the tooth brush.

It is our desire that further studies should be encouraged either by sponsorship or otherwise to be carried out at other IDP camps in Nigeria and among other displaced children in refugee camps in countries experiencing conflicts so as to compare with this study. Finally, we would recommend that studies on the dental caries level of children should also be considered and carried out in these camps.

Acknowledgement

1. We wish to appreciate the support of the management of the IDP camp for granting us permission to examine the children.
2. Members of the Dental and Maxillofacial Department of State House Medical Centre Abuja, for the orderly manner the children were organised.
3. The statistician Mr Clement Akinsola for being able to complete the analysis on time.
4. Mrs Roselyn Ikimi for proof reading this manuscript.

Bibliography

1. "UNHCR Worldwide population overview". *UNHCR* (2016).
2. "What is a Refugee? USA for UNHCR, the UN refugee agency". *UNHCR* (2018).
3. Adesoji A. "The Boko Haram Uprising and Islamic Revivalism in Nigeria / Die Boko-Haram-Unruhen Und Die Wiederbelebung Des Islam in Nigeria". *Africa Spectrum* 45.2 (2010).
4. Bartolotta C. "Terrorism in Nigeria: the rise of Boko Haram. The whitehead Journal of Diplomacy and International Relations". *World Policy* (2011).
5. "UNICEF Nigerian Country Humanitarian situation report". SitRep: No.15 (2015).

6. "UNICEF Nigeria Country Humanitarian Situation report". SitRep no.03 (2018).
7. Imai PH., *et al.* "Comparison of interdental brush to dental floss for reduction of clinical parameters of periodontal disease: A systematic review". *The Canadian Journal of Dental Hygiene* 46 (2012).
8. "Children's oral health/Division of Oral Health". (2018).
9. Pourhashemi SJ., *et al.* "Prevalence and Intensity of Gingivitis among 6-10 Years Old Elementary School Children in Tehran, Iran". *Journal of Medical Sciences* 7 (2007): 830-834.
10. Folaranmi N., *et al.* "Pattern of presentation of oral health conditions by children at University of Nigeria Teaching Hospital, Enugu: A retrospective study". *Nigerian Journal of Clinical Practice* 17 (2014): 47-50.
11. Ojahanon PI., *et al.* "The oral hygiene status of institution dwelling orphans in Benin City". *Nigerian Journal of Clinical Practice* 16.1 (2013).
12. "Mommy, It Hurts to Chew". *The California Smile Survey: An Oral Health Assessment of California's Kindergarten and 3rd Grade Children* (2006).
13. Greene JC and Vermillion JK. "The simplified oral hygiene index. Journal of the American Dental Association". *The Journal of the American Dental Association* 68 (1964): 7-13.
14. Rodrigues CR., *et al.* "Simplified Oral Hygiene index for ages 4 to 6 and 7 to 10 (deciduous and mixed dentition)". *Revista de Odontologia da Universidade de São Paulo* 4.1 (1990): 20-24.
15. Rao D., *et al.* "Oral Hygiene Status of Children and Adolescents attending special schools in South Canara, India". *Hong Kong Dental Journal* 2 (2005): 107-113.
16. Ogunsile SE and Ojo I. "Oral hygiene status of Adolescents in a Local Government Area of Oyo state, Nigeria". *Journal of Science and Technology* 30.3 (2010): 81-86.
17. Tobin AO and Ajayi IO. "Common oral conditions and correlates: An oral health survey in Kwara State, Nigeria". *BMC Research* 10.1 (2017): 568.
18. Batwala V., *et al.* "Oral health status of school children in Mbarara, Uganda". *African health Sciences* 7.4 (2007): 233-238.
19. Udoye C and Aguwa E. "Oral health related knowledge and behaviour among nursing students in a Nigerian tertiary hospital". *International Journal of Medicine and Health Development* 12 (2007).

Volume 2 Issue 7 October 2018

© All rights are reserved by Nathan Ukuoghene Ikimi, et al.