ORIGINAL ARTICLE

The oral hygiene status of institution dwelling orphans in Benin City, Nigeria

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Abstract

Introduction: Orphans like other vulnerable children face a number of challenges including limited or no access to basic health care including oral health care, which is one of their unmet health care needs. Neglected oral health care is associated with the development and progression of periodontal diseases among others.
Objective: To determine the oral hygiene status of institution dwelling orphans.
Materials and Methods: Thirty eight orphans from four orphanages in Benin City, Edo State of Nigeria were clinically examined and their oral hygiene status determined using the simplified oral hygiene index of Greene and Vermillion (OHI-S).
Results: Seventy-three percent of the orphans were found to have fair oral hygiene comprising mostly of those aged 6-13 years. More females were in this category while more males presented with poor oral hygiene status.
Conclusion: More orphans presented with fair oral hygiene that indicated inadequate oral care. There was poor oral health education and limited access to services. There is need for these to be improved as a solution to poor oral health status of these vulnerable children.

Key words: Institution dwelling, oral hygiene, orphans, status

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Introduction

Orphans have been referred to as those children who have lost one or both parents because of death; however, this study considered those who have lost both parents and under the age of 18 years.[1] They like vulnerable children face a number of challenges including high risk of poor health and by extension oral health, so they depend on their parent's relations or the good will of other members of the community to continue to meet their needs.[2] The following effects of sickness or/and death of a parent upon children have been identified to include economic hardship, lack of love, affection and attention, malnutrition, illness among others.[2,3] Sometimes they are kept in orphanage homes in large numbers by kind-hearted individuals, non-governmental organizations and very rarely government agencies. Often these orphanage homes can only barely meet the needs of their inmates because of poor funding and the low care-taker to child ratio. This is more so for the very young ones who cannot augment the little they are provided with through minor jobs. This is without bias to those orphans who are being cared for by their parents' relations which is a common practice in Nigeria.

Oral health care is one of the common unmet health care need of this group of persons and so they are at increased risk of developing oral diseases.[4-6] Oral health is an integral part of general health and quality of life, so its neglect will give rise to negative health consequences and unpleasant social life of the individuals.[2,7] In children and adolescents exposed to sociopathies, the state of teeth and periodontium was worse than in their peers from normal settings thus their needs for treatment was more demanding.[5,8] They are likely to experience untreated dental caries and periodontal

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diseases usually compounded by poor oral hygiene due to neglect.[3] Oral hygiene status is often determined by the amount of deposits on the surfaces of teeth. Poor oral hygiene has been reported as a predisposing factor in the etiology of periodontal diseases therefore ascertaining that the oral hygiene status helps to define the situation of oral health care and therefore a guide to preventive measures against oral diseases.[5,6,9] Poor oral hygiene has also been associated with cardiovascular diseases and even pre-term low-birth weight infants.[10] The aim of good oral hygiene practice is to reduce the amount of deposits particularly plaque on the surfaces of teeth.[11] In this study area, not much investigations have been carried out on the oral hygiene status of these orphans in orphanage homes and how much oral health burden was on the orphans and the managers of the orphanage homes. Also to what extent available oral health care services was accessible and utilized by them.

Objective of the study was to determine the oral hygiene status of institution dwelling orphans in Benin City, Nigeria, and to recommend measures/strategies aimed at improving oral hygiene in order to minimize the development and progression of periodontal diseases in this group.

Materials and Methods

This was a prospective study carried out in Benin City, Edo state of Nigeria.

Consent was obtained from the management of the orphanage homes.

A total of 55 orphans aged 2–22 years in four orphanage homes were interacted with initially, but only 38 were further investigated and had their oral structures clinically examined. Fourteen of the orphans were excluded because the index teeth selected for the simplified oral hygiene index scoring (debris and calculus index) were absent by reason of non-eruption while three of the orphans were above the considered age of 18 years acceptable for this investigation as did similar studies in the literature. Communication was not a problem as most of them spoke enough English while the remaining few spoke through their caregivers who also assisted us with required information.

Interviewer administered, open-ended questionnaires were administered to obtain their bio-data, attitude and knowledge of oral health care. Clinical examination of the orphans was carried out by all the investigators after calibration (intra- and inter-examiner).

The simplified oral hygiene index (Greene and vermillion 1964)[12] was used to evaluate the clinical level of oral hygiene. The oral hygiene index score involves the examination of six tooth surfaces (all four permanent first molars and the upper right and lower left central incisors) representing the anterior and posterior segments of the mouth and only the tooth surfaces covered with plaque or/and calculus is scored. The clinical level of oral hygiene associated with oral hygiene index score 0–1.2 was recorded as good, 1.3–3.0 as fair while 3.1–6.0 was recorded as poor. Other findings such as carious, mobile and missing teeth as well as the status of the oral soft tissues were also recorded. All oral examinations were carried out under natural lighting using the mouth mirror and an explorer.

All the data collected were entered into a personal computer, edited and simple comparisons made as represented by frequencies and percentages using SPSS version 15. Fisher's exact *test* was done to determine level of significance.

Results

Initially 55 orphans were seen but only 38 of them comprising of 21 females and 17 males all aged 6–17 years were clinically examined [Table 1]. The clinical level of oral hygiene was fair in 28 (73.7%), poor in 8 (21.1%) and good in 2 (5.3%) of the orphans [Table 2]. About sixty eight percent of those with fair oral hygiene status were aged 6–9 years, while the remaining 6 and 3 were in age groups of 10–13 and 14–17 years, respectively [Table 3]. This was statistically significant with a *P* value of 0.002 using the Fisher's exact *test*. Of the 8 who presented with poor oral hygiene, 5 were aged 14–17 years, while the other 3 were aged 10–13 years. The only 2 who had good oral hygiene

Table 1: Demographic characteristics of orphans who were clinically examined

	N	Frequency
Gender		
Female	21	55.3
Male	17	44.7
Total	38	100.0
Age (Years)		
6–9	20	52.6
10–13	10	26.3
14–17	8	21.1
Total	38	100.0

More females (55.3 %) were clinically examined; More than 70% of the orphans examined were aged 6–13 years

Table 2: The oral hygiene status as determined by the calculated oral hygiene index (OHI – S)

Oral hygiene index (OHI – S)	Clinical level of oral hygiene	*N*	Frequency
0–1.2	Good	2	5.3
1.3–3.0	Fair	28	73.7
3.1–6.0	Poor	8	21.1
Total		38	100.1

About 73% of the orphans had fair oral hygiene status, while only about 5% had good oral hygiene status

Table 3: Age group and oral hygiene status among the orphans

Oral hygiene index score	Clinical level of oral hygiene	Age (years) distribution			Total *n* (%)
		6–9 *n* (%)	10–13 *n* (%)	14–17 *n* (%)	
0.0–1.2	Good	1 (5.0)	1(10.0)	0 (0.0)	2 (5.3)
1.3–3.0	Fair	19 95.0)	6 (60.0)	3 (37.5)	28 (73.7)
3.1–6.0	Poor	0 (0.0)	3 (30.0)	5 (62.5)	8 (21.0)
Total	Total	20 (100.0)	10 (100.0)	8 (100.0)	38 (100.0)

$X^2 = 17.325$, df = 4, $P = 0.002$, significant; Nineteen of the 28 orphans with fair oral hygiene status were in age group of 6–9 years and this same age group recorded no poor oral hygiene status.

Table 4: Sex distribution and oral hygiene status

Oral hygiene index score	Clinical level of oral hygiene	Sex distribution		Total *n* (%)
		F *n* (%)	M *n* (%)	
0.0–1.2	Good	2 (9.5)	0 (0.0)	2 (5.3)
1.3–3.0	Fair	16 (76.2)	12 (70.6)	28 (73.7)
3.1–6.0	Poor	3 (14.3)	5 (29.4)	8 (21.0)
Total		21 (100.0)	17 (100.0)	38 (100.0)

$X^2 = 2.680$, df = 2, $P = 0.38$, non-significant; More females had fair oral hygiene status while more males had poor oral hygiene status

status were equally distributed into 6–9 and 10–13 years age groups and they were both females. More females (16) had fair oral hygiene status while more males had poor oral hygiene [Table 4]. This was however not statistically significant with a *P* value of 0.38.

They used toothbrush and toothpaste in cleaning their teeth once daily even though the techniques were inappropriate.

Discussion

Poor oral hygiene has been implicated in the etiology and progression of periodontal diseases and other oral hard and soft tissue diseases.[13] This is more so for those at risk due to their inability/failure to maintain adequate and proper oral health care resulting from lack of awareness and/or non-availability of needed materials. The orphans are in this category. Many of the orphans examined shared some similarities such as mixed dentition and living under similar conditions.

Simplified Oral Hygiene index, which was used in this study commonly uses the permanent first molars and the central incisors as index teeth in its scoring hence those in whom these teeth and other alternative teeth for scoring were absent by reason of non-eruption were excluded from clinical examination and further investigation. Also excluded were those above the age of 18 years because of the age definition of orphans applied in this study and as in similar studies in the literature.[14,15] Most (90%) of the orphans interacted with were aged 2–13 years, while more than 70% of those clinically examined were aged 6–13 years. This difference is explained by the exclusion criteria stated inter-alia.

Twenty eight children (73.7%) presented with fair oral hygiene out of which 19 (68%) were aged 6–9 years. While some studies have reported similar findings others have reported increasing score with increasing age.[12,16] In this study, the state of oral cleanliness was largely contributed to by the debris index score and not the calculus index score, which was the greater contributor in those orphans who presented with poor oral hygiene. We think the limitations in the orphanage homes may have contributed. However, the increased prevalence of gingivitis associated with teeth eruption and hormonal changes at puberty may have also negatively contributed to the poor oral hygiene maintenance in them.[17,18]

Out of the eight orphans aged 14–17 years, three presented with fair oral hygiene status while five presented with poor oral hygiene status. Those with fair presentation in this age group may be suggestive of the possible efforts at oral cleanliness as some of the orphans got older while those with poor oral hygiene may be related to the cumulative accumulation of deposits over the years due to neglect and this was more in the males. The fewer number of females with poor oral hygiene status is suggestive of a possible growing awareness about aesthetics at puberty among the females.

Conclusions

The oral hygiene status of most of the orphans examined was fair due largely to their poor knowledge of oral health care and limited availability of materials for the maintenance of proper oral hygiene. Their caregivers need adequate materials and updating of their knowledge of oral health care to ensure appropriate supervision. Creating opportunities for the orphans to visit dental health facilities for regular checks will assist them.

References

1. Cluver L, Gardener F, Operario D. Psychological distress among AIDS-orphaned children in urban South Africa. J Child Psychol Psychiatry 2007;48: 755-63.
2. Amoaka Johnson F, Padmadas SS, Smith PW. Orphanhood and vulnerability: A conduit to poor child health outcome in Rwanda. AIDS Care 2010;22:314- 23.
3. Kajoue Kamga L. Orphans,AIDS and the millennium development goals: Models and capacity to act. Sante 2009;19:134-9.
4. Caplan DJ, Weintraub JA. The oral health burden in the United States: A summary of recent epidemiologic studies. J Dent Educ 1993;57:853-62.
5. Adamowicz Kleplaska B, Burkiewicz B. Oral condition in children and adolescents exposed to sociopathies. Czas Stomatol 1990;43:679-84.
6. Dolan TA, Atchison KA. Implication of access, utilization and need for oral health care by the non-institutionalized and institutionalized elderly on the dental delivery system. J Dent Educ 1993;57:876-87.
7. Grocholewicz K. The effect of selected prophylactic-educational programs on Oral hygiene, periodontium and caries in school children during a 4-year

observation. Ann Acad Med Stetin 1999;45:265-83.
8. Suszczewicz A. Stomatologic care requirement for 12 year old children in Poland. Ann Acad Med Stetin 1994;40:117-31.
9. Okolo SN, Chukwu GA, Egbuonu I, Ezeogu FA, Onwuanaku C, Adeleke OA, *et al*. Oral hygiene and nutritional status of children aged 1-7 years in a rural community. Ghana Med J 2006;40:22-5.
10. Loesche WJ. Association of the oral flora with important medical diseases. Curr Opin Periodontol 1997;4:21-8.
11. Bamigboye O, Akande TM. Oral hygiene status of students in selected secondary schools in Osogbo, Nigeria. Nig Pract Med 2007;51:71-5.
12. Greene JC, Vermillion JR. The simplified oral hygiene index. J Am Dent Assoc 1964;68:7-13.
13. Rao SP, Bharambe MS. Dental caries and periodontal diseases among urban, rural and tribal school children. Indian Pediatr 1993;30:759-64.
14. Freitas-Fernandes LB, Novaes AB, Feitosa AC. Effectiveness of an oral hygiene program for Brazilian orphans. Braz Dent J 2002;13:44-8.
15. Denloye OO. Oral hygiene status of mentally handicapped school children in Ibadan, Nigeria. Odontostomatol Trop 1998;21:19-21.
16. Bolin AK. Childrens dental health in Europe. An epidemiological investigation of 5 and 12 year old children from eight EU countries. Swed Dent J Suppl 1997;122:1-88.
17. Szpringer-Nodzac M, Moszczenska-Cieslikowska B, Remiszewski A, Gieorgijewska J. Assessment of the condition of the periodontium in children aged 12 years using the periodontal treatment needs index. Czas Stomatol 1989;42:273-8.
18. Mouradian WE. The face of a child: Childrens oral health and dental education. J Dent Educ 2001;65:821-31.

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