

Dental Caries And Traumatic Dental Injury Among Orphans And Children In Orphanage Homes

Obehi O. Osadolor¹ and Aisosa J. Osadolor^{2,3}

¹Department of Child Dental Health, University of Nigeria Teaching Hospital, Enugu State, Nigeria.

²Department of Public Health, National Open University of Nigeria, Nigeria.

³Department of Oral and Maxillofacial Surgery, University of Benin Teaching Hospital, Edo State, Nigeria.

Emails: osadolorobehi@yahoo.com, aise.osadolor@outlook.com

Received on, 14 July 2024 - Accepted on, 15 August 2024 - Published on, 11 September 2024

ABSTRACT:

Background: Dental caries is a dynamic oral disease that affects all socioeconomic status. Traumatic dental injuries (TDIs) are injuries to the teeth and surrounding tissues as a result of impact. An orphan is a child who has lost one or both parents, and Africa has countries with orphans living in orphanages.

Method: An electronic literature search in PubMed, Science Direct and African journals online was done in June, 2024 using the Population, Concept and Context framework. Search terms and keywords were combined by Boolean operators. Two independent investigators screened titles and abstracts of publications on dental caries and traumatic dental injuries among orphans in orphanages. The inclusion criteria were original (primary) research articles on dental caries and traumatic dental injuries among orphans in orphanages, while review articles, systematic reviews, viewpoints, books, letters, thesis, editorials, dissertations, perspectives, and news were among the articles excluded during screening.

Results: Two articles with accessible full text were included for review. The studies were carried out in Egypt and Nigeria and it was a case control study and cross sectional study respectively.

Conclusion: Dental caries and traumatic dental injuries are significant public health problem that can affect the quality of life of orphans in orphanages. Improving awareness on preventive measures for traumatic dental injuries and dental caries among the caregivers in orphanages and

visit to dental clinic by orphans in orphanages for clinical assessment and management is recommended.

KEYWORDS:

Africa, children, trauma, orphans, Orphanage.

1. Introduction

DENTAL CARIES AND TRAUMATIC DENTAL INJURY AMONG ORPHANS IN ORPHANAGE HOMES

Dental caries is a multifactorial, biofilm mediated and dynamic oral disease that affects all age group and all socioeconomic status[1]. Traumatic dental injuries (TDIs) are injuries to the teeth and surrounding tissues because of impact[2]. An orphan is a child who has lost one or both parents[3-6]. They are socially marginalised population with exposure to lack of parental guidance and family support, social isolation, psychological[5] and emotional disturbances. Globally, over 140 million children are identified as orphans with over 52 million[7] orphaned children living in Africa. In Africa, some children may have been orphaned as a result of HIV/AIDS epidemic, conflicts, family abandonment, violent insurgency, poverty, disasters, violent civil unrest, famine[7] and special healthcare needs due to medical or syndromic conditions. Epidemiological studies on dental caries among orphans in orphanage homes had been reported in India[3,8-9], Iran[10], Malaysia[11], Yemen[12] and other countries in the world. Epidemiological studies on traumatic dental injury among orphans and children in orphanage

homes had been reported in India [2], Yemen[12] and other countries. Dental caries and traumatic dental injuries of the teeth can affect the quality of life of orphans in orphanages. The aim of this article is to review the available studies on dental caries and traumatic dental injury among orphans in orphanages in Africa.

2. LITERATURE SEARCH METHOD

An electronic literature search in PubMed, Science Direct and African journals online was done in June 2024 using the Population, Concept and Context framework[13].

Population: Orphans in orphanages

Concept: Dental caries and traumatic dental injury among orphans in orphanages

Context: Studies carried out in Africa continent, published in English language and in electronic databases

The keywords used were dental caries, orphans, Africa, traumatic dental injury, orphanage homes, dental trauma, Africa countries, sub-Saharan Africa and children. Search terms and keywords were combined by Boolean operators. Two independent investigators screened titles and abstracts of publications on dental caries and/or traumatic dental injury among orphans in orphanages, and potential references to identify which studies met the inclusion criteria of this review. Information was extracted from the full texts of articles regarding the location of the research and the main content. The inclusion criteria were original (primary) research articles on dental caries and/or traumatic dental injury among orphans in orphanages, carried out in Africa countries, published in English and in electronic databases. While review articles, systematic reviews, viewpoints, books, letters, thesis, editorials, book chapters, dissertations, perspectives, and news related to dental caries and/or traumatic dental injury among orphans in orphanages in Africa were excluded. Original research articles with information on dental treatment needs, periodontal treatment needs, substance abuse and oral hygiene status among orphans in orphanages in Africa and primary studies involving children in institutionalized / juvenile correctional home were also excluded.

Original research articles without accessible full text were also excluded. Study data of the included articles were extracted and collated in a table, including study details (author/s, year of publication, study design, study location or country, study participants, study objective). No time frame was used during the search and all identified studies in Africa countries that met the inclusion criteria and had accessible full text was included. If relevant data were missing, the authors of the articles were not contacted for additional information via e-mail. Any additional studies related to the concept of the article, carried out in Africa continent, and identified from the reference lists of published papers were retrieved from the web using Google scholar.

3. RESULTS

Thirty nine articles were identified during literature search; three duplicates were removed during screening. Abstract and full texts were screened using inclusion criteria by two independent investigators. Thirty four articles were excluded because they did not meet the inclusion criteria. Two articles with accessible full text were included as it was assessed to meet the inclusion criteria. The studies were carried out in Egypt and Nigeria, and it was a case control study and cross-sectional study, respectively.

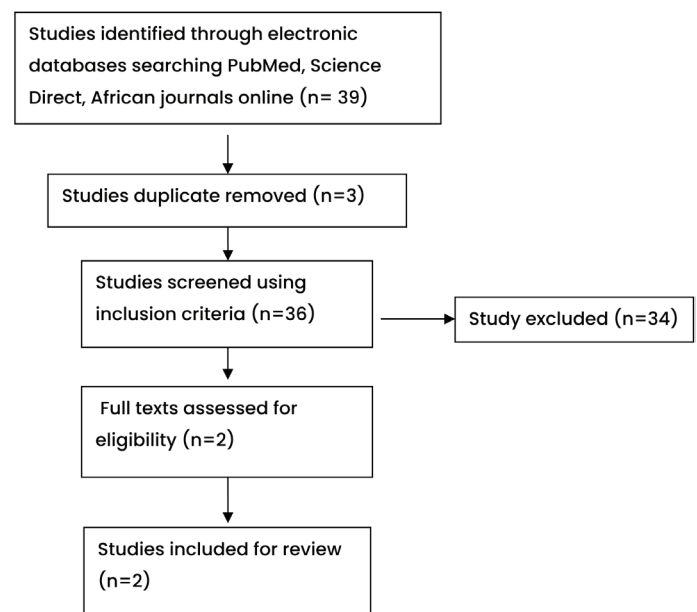


Fig. 1. Flowchart of articles process

Table 1: Summary of identified study on dental caries and traumatic dental injury among orphans in orphanages in Africa

Author/Year of publication	Study participants	Study objective	Study design	Country of study
Khattab&AbdElSaboual, 2023[14]	6 to 12 years old children	To assess dental caries experience in two groups of Egyptian institutionalized orphan children, resident in two orphanages, compared to a matched group of parented school children.	A case–control study	Egypt
Ayebameru et al., 2024[15]	7 to 15 years old children	To assess the prevalence and factors affecting dental caries and trauma among children in orphanages in Ibadan	A cross–sectional observational study	Nigeria

4. DISCUSSION

Dental caries is a significant public health problem[1] that can restrict activities at home and school and affects the quality of life of children[1]. Traumatic dental injury is a condition of dental public health interest as it can affect the quality of life of children with affected teeth[2]. Orphanages are places where orphans stay and they can be operated by government[7], private individuals[7], religious bodies or non–governmental organisation. Orphanages in Africa have challenges of poor funding[7] and low caretaker to child ratio.

The mean DMFT score among children in nongovernmental and governmental orphanages in Egypt was 1.86 ± 2.96 and 1.80 ± 2.54 , respectively[14], while the mean dmft score among children in nongovernmental and governmental orphanages was 1.69 ± 2.58 and 0.41 ± 0.89 , respectively[14]. This variation in dental caries experience among children in governmental orphanage homes in Egypt could be because of more compliance to caries preventive measures like daily twice tooth brushing, use of fluoride containing toothpaste, reduced consumption of cariogenic diet and maintenance of good oral hygiene.

The prevalence of dental caries among 7–15 years old orphans in a Nigerian orphanages was 17.8% with a mean DMFT/dmft of 0.42 ± 1.06 [15]. Dental caries was seen more in males than females among the children in the selected orphanages. Gender and the presence of deep pits and fissures were the statistically significant predictors of dental caries among the orphans[15]. The prevalence of traumatic dental injury among 7–15 years old orphans in a Nigerian orphanage home was 7.5% [15]. Traumatic dental injury was seen more in males than females as reported in a previous study in India [2]. This finding may be as a result of more males been involved in adventurous [16] and risk taking behaviours than females.

Orphaned children in orphanages have poor access to oral health care[17] and they are supposed to benefit from the social and health related[18] sustainable development goal[18–19]. The restorative index among children in government owned orphanage was 0%[14] and this is a reflection of poor access to oral health care[17]. Epidemiological studies among orphans in orphanage home had been reported in Africa [4,6,14–15,20–21]. The studies identified from two Africa countries might not reflect the level of research on dental caries and traumatic dental injuries among orphans living in orphanage homes in Africa.

5. CONCLUSION

Dental caries and traumatic dental injuries are conditions of dental public health interest as they can affect the quality of life of orphans in orphanages with affected teeth. Improving awareness on preventive measures for traumatic dental injuries and dental caries among the caregivers in orphanage homes and having the orphans visit dental clinics in orphanages for clinical assessment and management are recommended.

Financial support and sponsorship
None

Conflicts of interest
There are no conflicts of interest.

Acknowledgement
Authors acknowledge all advisers of this article.

6. REFERENCES

1. Akaji E, Ikechebelu Q, Osadolor O. Assessing dental caries and related factors in 12-year-old Nigerian school children: Report from a Southeastern State. *European J Gen Dent.* 2020;9(1).
2. Goswami M, Bhardwaj S. Assessment of Traumatic Dental Injuries among Institutionalized Orphan Children: A Cross-sectional Study. Vol. 15, *International Journal of Clinical Pediatric Dentistry.* 2022.
3. Christian B, Ummer-Christian R, Blinkhorn A, Hegde V, Nandakumar K, Marino R, et al. An epidemiological study of dental caries and associated factors among children residing in orphanages in Kerala, India: Health in Orphanages Project (HOPE). *Int Dent J.* 2019;69(2).
4. Ojahanon PI, Akionbare O, Umoh AO. The oral hygiene status of institution dwelling orphans in Benin City, Nigeria. *Niger J Clin Pract.* 2013;16(1).
5. Yosef T, Assefa T, Zinabie H. Psychological impacts of orphanhood in Southwest Ethiopia. *Heliyon.* 2023;9(4).
6. Onigbinde O, Kikelomo A, Modupeore S, Adenike A. Assessment of periodontal status of children and adolescents in orphanages in Lagos, Nigeria. *Nigerian Journal of Basic and Clinical Sciences.* 2017;14(1).
7. Frimpong-Manso K. Funding orphanages on donations and gifts: Implications for orphans in Ghana. *New Ideas Psychol.* 2021;60.
8. Tangade P, Batra M, Tirth A, Ravishankar T, Shah AF, Pal S. Dental Caries Status of Institutionalized Orphan Children from Jammu and Kashmir, India. *Int J Clin Pediatr Dent.* 2016 Dec;9(4):364–71.
9. Suresan V, Jha K, Diptajit D, Sourav S, Jalaluddin M, Fatima A. Dental caries experience and oral hygiene status among institutionalized orphans of bhubaneswar city, odisha: A comprehensive dental healthcare program outcome. *World Journal of Dentistry.* 2021;12(2).
10. Meshki R, Basir L, Motaghi S, Kazempour M. Oral health status among orphan and non-orphan children in Mashhad: a case-control study. *J Med Life.* 2022;15(9).
11. Shanthi M, Goud EVSS, Kumar GP, Rajguru JP, Ratnasothy S, Ealla KKR. Risk factors and treatment needs among orphan school children. *Journal of Contemporary Dental Practice.* 2017;18(10).
12. Al-Maweri SA, Al-Soneidar WA, Halboub ES. Oral lesions and dental status among institutionalized orphans in Yemen: A matched case-control study. *Contemp Clin Dent.* 2014;5(1).
13. Osadolor OO, Osadolor AJ. Early childhood caries among pre-school children in rural areas. *Ibom Medical Journal.* 2024 May 1;17(2):187–91.
14. Khattab NMA, Abd-Elsabour MAA. Assessment of dental caries among a group of institutionalized orphan children compared to parented school children: case-control study. *BMC Oral Health.* 2023;23(1).
15. Ayebameru OE, Popoola BO, Denloye OO. The prevalence of dental caries among children in orphanages in Ibdan. 2024;
16. Osadolor OO, Onyejaka NK. Substance Abuse and Oral Health of Adolescence. *Journal of Nepalese Association of Pediatric Dentistry.* 2022 Dec 12;3(1):44–6.
17. Osadolor OO. Dental caries and access to oral health services among children and adolescents. *Janaki Medical College Journal of Medical Science.* 2022;10(03).
18. Osadolor OO, Osadolor AJ, Osadolor OO, Enabulele E, Akaji EA, Odiowaya DE. Access to health services and health inequalities in remote and rural areas. *Janaki Medical College Journal of Medical Science.* 2022;10(2).
19. Onayemi OM, Hapunda G. Socio-ecological drivers of vulnerabilities of children living within orphan homes and the implications for their nurturance care. *Front Public Health.* 2023 Dec 12;11.
20. Rubin PF, Winocur E, Erez A, Birenboim-Wilensky R, Peretz B. Dental Treatment Needs among Children and Adolescents Residing in an Ugandan Orphanage. *J Clin Pediatr Dent.* 2016;40(6).
21. Meghdadpour S, Curtis S, Pettifor A, MacPhail C. Factors associated with substance use among orphaned and non-orphaned youth in South Africa. *J Adolesc.* 2012;35(5).