Review Article

DENTAL CARIES AMONG CHILDREN IN AFRICA SLUMS

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ABSTRACT

Where we live is one of the social determinants of health. A slum is a residential area with poor buildings ,poor sanitation, overcrowding and a constant threat of homelessness and forced evictions. Families living in slums are a reflection of their household income. Dental caries is a significant public health problem among children, that can restrict academic activities in school, reduce play hours among children, and significantly affects quality of life when associated with pain and or swelling. After searching PubMed, African journals online and Google scholar by two independent investigators in January, 2025. The aim of this article was to review the available studies on the prevalence and associated factors of dental caries among children in Africa slums.

The prevalence of dental caries among 2-17 years old slum-dwelling Kenyan children was 57.0%, 56.2% among 12-14 years old Kenyan children living in slum, with oral impacts on daily performance and oral health related quality of life and 17.8% among 5-16 years old slum-dwelling Nigerian children. Maternal and paternal educational level, child´s age, consumption of cariogenic meals, fluorosis and history of dental visits were associated with dental caries among the African children living in slums. Interventions for reducing the burden of dental caries among slum dwelling children could involve oral health education on avoidable risk factors for dental caries among slum dwellers, reduction of unmet oral healthcare needs and poverty eradication interventions in slums. Preventive interventions and oral health promotion activities for dental caries among children in Africa slums are recommended.

KEY WORDS

Children, Community, Dental services, Oral health, Slum

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INTRODUCTION

A slum is a residential area with weak and poor buildings, poor sanitation, inadequate health infrastructure with absence of basic facilities, densely populated and with a constant threat of homelessness and forced evictions. [1] Where we live is one of the social determinants of health.[2-3] Families living in slum is a reflection of their household income. Children living in slum is not a reflection of the social related Sustainable Development Goals [3] (SDGs). Dental caries is a significant public health problem among children, [4-7] it is expensive to health care systems [7] and places a financial burden on the parents [7] . Dental caries affects all socioeconomic level, all age groups [4,6] and restrict activities in school, at work and at home. It reduces play hours among children [7], work hours among parents and significantly affects quality of life [8] when associated with pain and or swelling.

After searching PubMed, African journals online and Google scholar by two independent investigators in January, 2025. The keywords used were dental caries, slum, prevalence, Africa countries, slum communities, children, sub-Saharan Africa and Africa. Search terms and keywords were combined by Boolean operators. The inclusion criteria were original (primary) research articles with information on prevalence and /or associated factors of dental caries among children aged 6-16 years in Africa slums, published in English and with accessible full text. While review articles, systematic reviews, thesis, communications and dissertations related to prevalence and /or associated factors of dental caries among children in Africa slums were excluded. The aim of this article was to review the available studies on the prevalence and associated factors of dental caries among children in Africa slums.

PREVALENCE AND ASSOCIATED FACTORS OF DENTAL CARIES AMONG CHILDREN IN ARICAN SLUMS

Dental caries is a preventable oral disease and there are social, biological and behavioural factors [9] associated with dental caries. The social factors [9] are age, type of school attended, birth rank, gender,[8] socio-economic status, family income, and level of mother education. The biological factors [9] are lower salivary flow rate , low salivary buffering capacity, level of ions present in saliva, and thick saliva viscosity. The behavioural factors [9] are poor oral hygiene status , consumption of sugary snacks between meals like biscuits,[8] chocolates and sweets, once daily tooth-brushing , non- use of fluoride containing toothpaste for tooth-brushing,[8] no previous dental visit and poor oral health seeking behaviour.

Children that live in slum stay at irregular settlements, squatter housing or dilapidated and uncompleted buildings. In Kenya, the prevalence of dental caries among 12-14 years old children living in slums was 56.2% [10] with a mean DMFT of 1.72±2.22, 93.7% of the carious teeth among the children living in slum were untreated and there were no filled teeth [10] as a result of dental caries. The restorative index among the slum dwelling Kenyan children was 0.0%. The diagnostic criterion used for examining the children was the DMFT index. [10] The prevalence of oral impacts of dental caries on daily performance and oral health related quality of life experienced by the slum dwelling school children was 63.3%.[10] Another study from Kenya among 2-17 years old children living in slums reported a prevalence of dental caries of 57.0%,[11] with a mean dmft of 2.3 ± 3.1. The diagnostic criteria used for examining the children [11] were according to the International Caries Detection and Assessment System (ICDAS). Dental caries experience among the slum dwelling Kenyan children was associated with the consumption of juices, fluorosis,[11] dentist visit in the last year, and older age. In Nigeria, a study among 5-16 year old slum-dwelling Nigerian children reported a prevalence of dental caries of 17.8% [1] , with a mean dmft index of 0.21±0.91 and mean DMFT index of 0.13±0.54. The diagnostic criterion used for examining the children living in the Nigerian slum was the World Health Organisation (WHO) dental caries diagnostic criteria (DMFT/dmft index). Dental caries experience among the slum dwelling Nigerian children was associated with maternal and paternal educational level,[1] child´s age, consumption of cariogenic meals, and history of dental visits. The studies identified from two Africa countries might not reflect the level of research on dental caries among children in Africa slums.

Household educational level, poor perception of the importance of oral health, level of awareness of existing oral health services, [12-14] attitude towards dental care, proximity to oral-healthcare facilities, household income and availability of health insurance among slum dwellers can affect the utilisation of oral health care services [12-14]. The low level of the family income among slum dwellers can affect payment [15] for preventive or curative oral health services, from out of pocket payment system [16] for oral health services, common in most Africa countries. It can also affect purchase of fluoride containing toothpaste [17] and parents oral health care seeking behaviour for preventive or curative dental services [18] for their children. Interventions for reducing the burden of dental caries among slum dwelling children could be multidimensional involving economic , public, [15] social and environmental policies [3], oral health education on avoidable risk factors for dental caries among slum dwellers, strategic health planning with reduction of unmet oral healthcare needs among slum population groups, poverty eradication interventions [3] in slums and provision of universal health coverage for slum dwellers with a functional oral health system.

CONCLUSION

The prevalence of dental caries among slum dwelling African children was high. Maternal and paternal educational level, child´s age, consumption of cariogenic meals, fluorosis and history of dental visits were associated with dental caries. Preventive interventions for dental caries among children in Africa slum are recommended.

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