Bruxism in Children
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Abstract:

Background:
Bruxism can occur in children living or residing in slums areas, rural areas, remote and urban communities. The prevalence of bruxism among children varies in the literature. Bruxism is associated with sound during teeth clenching or involuntary teeth grinding, and this can disturb parents, guardian and family members. It can be diagnosed with clinical history, clinical examination and use of electromyography and polysomnography.

Method:
An electronic literature search in science direct and gogol was done in December 2023 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 bruxism among children. Original (primary) research articles with accessible full text were included for review, while review articles, systematic reviews, thesis, dissertations and perspectives related to bruxism among children were among articles excluded during screening. Original (primary) research articles related to voluntary tooth clenching, other oral habits and bruxism/tooth grinding among children with special health care needs were also excluded during screening.

Results:
Abstract and full texts were screened using inclusion criteria by two independent investigators. The identified study was carried out in Egypt, Uganda and South Africa respectively.

Conclusion:
Bruxism can occur among children. It can affect the quality of life of children with tooth sensitivity, tooth attrition with wear facets, and psychological concerns. More studies from diverse ethnic population and countries in Africa countries will fill the gaps in knowledge and add to the existing literature.

Keywords: Africa, Bruxism, Children, Sleep bruxism, Studies

Introduction:
Bruxism is an involuntary, oral para-functional habit with repetitive1 jaw muscle activity characterised by non-functional, grinding, gnashing or clenching of teeth2.3 and/or bracing or thrusting of the mandible.2 It can occur during sleep (nocturnal or sleep bruxism) or wakefulness (awake bruxism). The diagnostic method for bruxism could be parental/family reports,4 clinical history5, and clinical examination or use of electromyography or polysomnography.6 Studies on bruxism among children had been reported in Columbia,7 Turkey,7 Iran,8 Brasil,9 Albania10 Portugal,11 Spain12 and other countries. The aim of this article is to review the available studies on bruxism among children in Africa.

Literature search method:
An electronic literature search in Science direct and Gogol was done in December, 2023 using the Population, Concept and Context framework13 on Bruxism among children from studies carried out in Africa continent, published in English language and in electronic database.

The keywords used were bruxism, Africa countries, sub-Saharan Africa, sub-Saharan countries and African children. Search terms and keywords were combined by Boolean operators. Names of Africa countries were combined with bruxism using Boolean operators during article search. Two independent investigators screened titles and abstracts of publications on bruxism.
among children studies. 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 from selected database with information on bruxism among children carried out in Africa countries, published in English and in selected electronic database. While review articles, systematic reviews, viewpoints, books, letters, thesis, editorials, book chapters, dissertations, perspectives, and news related to bruxism among African children were excluded. Original (primary) research articles without accessible full text were also excluded. Original research articles related to voluntary tooth clenching, other oral habits and bruxism/tooth grinding among children with special health care needs 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 identified studies in Africa countries that met the inclusion criteria and had accessible full text were included. If relevant data were missing, the authors of the articles were not contacted for additional information via e-mail.

**Results:**
Thirty six articles were identified during literature search; one duplicate was removed during screening. Abstract and full texts were screened using inclusion criteria by two independent investigators. Thirty one articles were excluded because they did not meet the inclusion criteria. Four articles with accessible full text were included as it was assessed to meet the inclusion criteria. The identified study was carried out in Egypt, Uganda and South Africa respectively.

Table I: Summary of identified studies on bruxism among children in Africa

<table>
<thead>
<tr>
<th>Author/Year of publication</th>
<th>Study participants</th>
<th>Study objective</th>
<th>Country of study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kieser &amp; Groeneveld, 199814</td>
<td>6 to 9 years old children</td>
<td>To investigate the relationship between juvenile bruxing and craniomandibular disorders</td>
<td>South Africa</td>
</tr>
<tr>
<td>Rubin et al, 201715</td>
<td>6–17 years old children</td>
<td>To assess the prevalence of oral habits, bruxism, and temporomandibular disorders (TMDs) among children living in Uganda; (2) to establish whether parafunctional activities are associated with temporomandibular disorders TMDs; and (3) to examine the possible impact of gender and age on the prevalence of bruxism, oral habits, and temporomandibular disorders.</td>
<td>Uganda</td>
</tr>
<tr>
<td>Ahmed, et al, 201916</td>
<td>6 to 10 years old children</td>
<td>To investigate the possible relationship between bruxism and joint sounds in schoolchildren.</td>
<td>Egypt</td>
</tr>
<tr>
<td>Shahbourn et al. 202217</td>
<td>4-6 years-old children</td>
<td>To assess the prevalence of sleep bruxism and associated factors among (4-6) years-old preschool children of Tanta city.</td>
<td>Egypt</td>
</tr>
</tbody>
</table>

* longitudinal study, * Cross sectional study
Discussion:
Bruxism can occur among children. The noise or sound from teeth clenching or involuntary teeth grinding can disturb parents or bed partners during sleeping. The prevalence of sleep bruxism varies in the literature and it could be due to the different method of diagnosing bruxism. Bruxism can cause tooth wear or attrition as evidenced by wear facets, can fracture tooth restorations and soreness of the masticatory muscles as a result of the repetitive masticatory muscle activity. The management of bruxism ranges from patient/parent education, use of occlusal splints, psychotherapy, psychological techniques and medications.
Sleep bruxism can occur among preschool children as reported in a previous study from Brazil, the prevalence of sleep bruxism among Egyptian preschool children was 17.6%, this was less than 28.3% reported from Brazil. Another study from Egypt reported a possible association between joint sounds and bruxism among children. A study from Uganda among orphans did not find any relationship between stress or other psychological symptoms with either temporomandibular disorders or bruxism, while a study among South African children concluded that juvenile bruxism is a self-liming condition, that does not progress to adult bruxism and is not associated with temporomandibular joint symptoms. Studies from diverse ethnic population in Africa will provide evidence-based knowledge on the prevalence of bruxism among African children, associated factors of bruxism among children, methods of addressing the concerns of parents and guardians on the features and factors associated with bruxism among children and the need for early intervention and multidisciplinary management of bruxism among African children. Studies will also guide the clinical methods of improving the quality of life of children with tooth sensitivity, tooth attrition with wear facets, emotional or physical stress, anxiety and psychological concerns. Africa has over 3000 ethnic groups. Studies identified from three Africa countries might not reflect the level of research on bruxism among African children. There are diverse ethnic population with different socio-cultural beliefs and practices in Africa countries. More studies from various countries in Africa will fill the gaps in knowledge and add to the existing literature.

Conclusion:
Bruxism can occur among children. There is need for more research on bruxism among children from Africa countries. More studies from diverse ethnic population in Africa will add to the existing literature.

References:
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