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Comparative Analysis of Different Types of Occlusal Splints for the Management of Sleep Bruxism: A Systematic Review

Ainoosah, S[1]; Fargal, A[2]; Saini, R[3]; Heboyan, A[4].

Corresponding author:
Ravinder Saini

rsaini@kku.edu.sa

Author Affiliation:
King Khalid University.

ADMINISTRATIVE INFORMATION

Support - King Khalid University.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 27 October 2023 and was last updated on 27 October 2023.

INTRODUCTION

Review question / Objective What is the impact of different occlusal splints on reducing sleep bruxism episodes and improving symptoms?

Rationale The rationale for conducting this systematic review is based on the need to assess and compare different occlusal splints used to treat sleep bruxism.

Condition being studied Sleep Bruxism.

METHODS

Search strategy A detailed systematic literature search of PubMed, Scopus, and Google Scholar for gray literature was performed for articles published before September 20, 2023.

Participant or population 18-50 years.

Intervention Occlusal splints for the management of sleep bruxism.

Comparator Different types of occlusal splints.

Study designs to be included We took into account both descriptive (case control and cohort) and interventional (trials) based research that was written in English for this review.

Eligibility criteria Eligible studies included in this review met the following inclusion criteria: published in peer-reviewed journals; available in English; Studies that evaluated the effectiveness of different types of occlusal splints for the management of sleep bruxism; Studies conducted on human participants diagnosed with sleep bruxism.

Information sources reliable sources, including Google Scholar, Pub-Med via MEDLINE, Springer, and Scopus, EBSCO host (Dentistry & Oral Sciences Source database), Science Direct, and

Web of Science (All databases: WOS, KJD, MEDLINE, RSCI, SCIELO).

Main outcome(s) Reduction in Sleep Bruxism Episodes; Changes in Electromyography (EMG) Activity.

Additional outcome(s) Patient-reported Outcomes and Adverse Effects Changes in Electromyography (EMG) Activity.

Data management Data was processed in Microsoft Excel (Excel 365; Microsoft Corp., Redmond, WA, USA). For export and data manipulation, Google Sheets (Alphabet Inc., Mountain View, CA, USA).

Quality assessment / Risk of bias analysis Two researchers independently assessed the risk of bias of the included articles The potential risk of bias was categorized as low if a study provided detailed information pertaining to 70% or more of the applicable parameters . Moderate risk was considered if a study provided information corresponding to less than 70% to 50% of the applicable parameters, whereas if a study showed missing information regarding more than 50% of the applicable parameters, the study was categorized as exhibiting a high risk of bias.

Strategy of data synthesis Two review authors (RS and SA) used the studies to help select studies and document their decisions. This was done in two stages, with the first stage consisting of a ti-tle and abstract screening of all studies against the inclusion criteria, and the second stage being a full text assessment of papers that were deemed potentially relevant based on the initial screening.

Subgroup analysis The data was compiled from a variety of articles:
• Author(s), year of publication, country, study design.
• Total number of patients/datasets.
• Training/validation datasets
• Test datasets.

Sensitivity analysis NA.

Language restriction Articles only in English were Selected.

Country(ies) involved Saudi Arabia , Armenia.

Keywords Occlusal splint; Sleep bruxism; Soft splints; Hard splints; Adjustable splints.

Dissemination plans All the data and the article will be share after the publication.

Contributions of each author
Author 1 - SULTAN AINOOSAH - Conceptualization.
Email: sainoosah@taibah.edu.sa
Author 2 - Ahmed Farghal - Methodology, Formal Analysis.
Email: afrgal@taibahu.edu.sa
Author 3 - Ravinder Saini - Selection Criteria : Risk of Bias.
Email: rsaini@kku.edu.sa
Author 4 - Artak Heboyan - drafting of Manuscript.
Email: heboyan.artak@gmail.com