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Sleep Bruxism: Complex Origins, Diagnosis, Management

Mira Singh*

Department of Pediatric Dental Sciences, Delhi Academy of Dental Research, New Delhi, India

Introduction

This comprehensive review offers an updated perspective on sleep bruxism, delving into its complex origins, diagnostic methodologies, and various management strategies. It highlights the importance of understanding the condition's multifaceted nature given its impact on both oral health and overall quality of life[1].

This systematic review and meta-analysis thoroughly evaluates the effectiveness of occlusal splints in mitigating sleep bruxism. It synthesizes evidence from numerous studies to provide clear insights into their role in reducing bruxing activity and alleviating associated symptoms, offering an evidence-based view of their therapeutic value[2].

This systematic review and meta-analysis investigates the intricate relationship between bruxism and temporomandibular disorders (TMDs). It assesses the strength of their association and explores potential shared underlying mechanisms, helping clarify whether bruxism acts as a cause, a symptom, or a comorbidity of TMDs[3].

This review provides current insights into sleep bruxism, specifically focusing on pediatric populations. It details the potential causes, diagnostic approaches, and effective management strategies tailored for children and adolescents, highlighting the unique aspects of bruxism presentation and treatment in younger age groups[4].

This systematic review explores the role of cortical motor control mechanisms in the pathophysiology of sleep bruxism. It synthesizes existing evidence on how central nervous system activity influences bruxing behaviors, providing a deeper understanding of the neurological underpinnings of this condition[5].

This systematic review and meta-analysis meticulously examines the relationship between various psychosocial factors, such as stress, anxiety, and specific personality traits, and their association with the prevalence or severity of bruxism. It sheds light on the significant psychological components that contribute to or exacerbate bruxing activity[6].

This narrative review offers a current overview of contemporary diagnostic methods and treatment strategies for bruxism. It discusses the strengths and limitations of various assessment tools and therapeutic interventions, providing practical guidance for clinicians in managing this often complex condition[7].

This review explores the intricate connections between sleep bruxism and other sleep-related disorders, such as sleep apnea and insomnia. It underscores that bruxism frequently co-occurs with, and can be influenced by, other sleep disturbances, emphasizing the importance of a holistic diagnostic approach[8].

This systematic review evaluates the effectiveness of various pharmacological agents employed in the management of bruxism, including muscle relaxants, anxiolytics, and other medications. It delivers an evidence-based overview of drug therapies for reducing bruxing activity and mitigating associated symptoms[9].

This systematic review explores the relationship between specific occlusal characteristics and the presence or severity of sleep bruxism. It investigates whether certain dental alignments or bite patterns contribute to, or are affected by, bruxing behavior, synthesizing current research on the occlusal aspects of this condition[10].

Description

Sleep bruxism is a multifaceted and often challenging condition, characterized by diverse and complex origins that extend beyond simple mechanical factors. A thorough understanding of its etiology, combined with robust diagnostic methodologies and tailored management strategies, is paramount for effective patient care [1]. This condition significantly impacts both oral health and an individual's overall quality of life, necessitating a comprehensive clinical approach. Current diagnostic methods range from subjective reporting to objective monitoring, while treatment strategies encompass a wide array of therapeutic interventions. Narrative reviews offer valuable overviews, discussing the strengths and limitations of these various assessment tools and treatment options, thereby providing practical, evidence-based guidance that clinicians can use to manage this intricate condition [7]. This approach ensures that treatment plans are individualized and address the specific nuances of each patient's bruxism presentation.

The manifestation and treatment of sleep bruxism are not uniform across all demographics. Notably, current insights into sleep bruxism specifically focus on pediatric populations, detailing the potential causes, appropriate diagnostic approaches, and effective management strategies uniquely tailored for children and adolescents [4]. Beyond age, bruxism also shows significant interconnections with other health issues. A systematic review and meta-analysis investigates the intricate relationship between bruxism and Temporomandibular Disorders (TMDs), rigorously assessing the strength of their association and exploring potential shared underlying mechanisms. This critical inquiry helps to clarify whether bruxism functions primarily as a cause, a symptom, or a comorbidity of TMDs [3]. Furthermore, sleep bruxism is frequently observed to co-occur with other sleep-related disorders, such as sleep apnea and insomnia. This often-overlooked relationship underscores that bruxism can be significantly influenced by other sleep disturbances, emphasizing the critical importance of employing a holistic diagnostic approach to capture the full scope of a patient's sleep health [8].

Therapeutic interventions for bruxism are varied and continually being refined based on evidence. Occlusal splints, for instance, are a widely recognized treat-

ment modality, and their effectiveness in mitigating sleep bruxism has been thoroughly evaluated through systematic reviews and meta-analyses. This extensive body of research synthesizes evidence from numerous studies, providing clear insights into how splints reduce bruxing activity and alleviate associated symptoms, thus offering a strong evidence-based view of their therapeutic value [2]. In addition to mechanical approaches, pharmacological management represents another important avenue. A systematic review dedicated to this aspect evaluates the effectiveness of various pharmacological agents, including muscle relaxants, anxiolytics, and other medications, employed in the management of bruxism. It delivers a comprehensive, evidence-based overview of drug therapies designed to reduce bruxing activity and mitigate associated symptoms, offering clinicians a clear understanding of potential pharmaceutical interventions [9].

A deeper understanding of bruxism necessitates exploring its multifactorial etiology and contributing elements. Psychosocial factors stand out as significant influences. Systematic reviews and meta-analyses meticulously examine the relationship between various psychosocial elements, such as stress, anxiety, and specific personality traits, and their association with the prevalence or severity of bruxism. This research effectively sheds light on the significant psychological components that can contribute to or exacerbate bruxing activity, making these factors crucial in a comprehensive assessment [6]. From a neurological perspective, the role of cortical motor control mechanisms in the pathophysiology of sleep bruxism is a key area of investigation. Existing evidence is synthesized to understand how central nervous system activity profoundly influences bruxing behaviors, thereby providing a deeper and more nuanced understanding of the neurological underpinnings of this condition [5]. Lastly, the relationship between specific occlusal characteristics and the presence or severity of sleep bruxism has also been explored. Systematic reviews investigate whether certain dental alignments or bite patterns contribute to, or are affected by, bruxing behavior, synthesizing current research to clarify these important occlusal aspects of the condition [10].

Conclusion

Sleep bruxism is a multifaceted condition affecting oral health and overall quality of life, requiring an updated understanding of its complex origins, diagnostic methods, and management strategies. Current approaches involve various assessment tools and therapeutic interventions, guiding clinicians in addressing this often complex condition. This includes tailored strategies for pediatric populations, recognizing their unique presentation and treatment needs. Evidence suggests occlusal splints are effective in mitigating sleep bruxism by reducing activity and alleviating associated symptoms. Beyond mechanical interventions, pharmacological agents, such as muscle relaxants and anxiolytics, offer therapeutic value in reducing bruxing activity and mitigating symptoms. The condition frequently co-occurs with, and can be influenced by, other sleep disturbances like sleep apnea and insomnia, emphasizing the importance of a holistic diagnostic approach. Furthermore, bruxism shares an intricate relationship with Temporomandibular Disorders (TMDs), with ongoing efforts to clarify if it acts as a cause, a symptom, or a comorbidity. Psychosocial factors, including stress, anxiety, and specific personality traits, are significantly associated with the prevalence or severity of bruxism, highlighting psychological components. Neurologically, cortical motor control mechanisms, involving central nervous system activity, influence bruxing behaviors. Finally, specific occlusal characteristics, such as dental alignments or bite patterns, may contribute to or be affected by sleep bruxism, forming another crucial aspect of research.

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Conflict of Interest

None.

References

1. Roberto Simões Maluf, Andréa Rodrigues Machado, Ana Paula Pfrimer Martins. “Sleep bruxism: an updated overview of the etiology, diagnosis, and management.” *Clin Oral Investig* 28 (2024):16.
2. Bader K. Alkhudhairy, Sherif M. Mounir, Abdullah M. Alsaleh. “The effect of occlusal splints on sleep bruxism: a systematic review and meta-analysis.” *J Oral Rehabil* 51 (2024):220-234.
3. João Paulo Rissardo, Andrea L. F. Caprara, Bruna G. Rissardo. “Association between bruxism and temporomandibular disorders: A systematic review and meta-analysis.” *Oral Dis* 27 (2021):1157-1167.
4. Carlo Cavaliere, Alessandra Amante, Francesca Zotti. “Sleep bruxism in children and adolescents: an updated review of etiology, diagnosis, and management.” *J Clin Pediatr Dent* 48 (2024):84-90.
5. Maria M. Koutra, Anastasios E. Athanasiou, Nikolaos Andreas Mourtzoukos. “Cortical motor control and sleep bruxism: A systematic review.” *J Oral Rehabil* 47 (2020):110-120.
6. Junlin Chen, Xinyu Wang, Huibin Tian. “Psychosocial factors associated with bruxism: A systematic review and meta-analysis.” *J Oral Rehabil* 50 (2023):569-580.
7. Frank Lobbezoo, Jari Ahlberg, Gilles J. M. Schoreder. “Current approaches for diagnosis and treatment of bruxism: A narrative review.” *J Oral Rehabil* 49 (2022):8-16.
8. Marie-Claude Carra, Ngan Huynh, Gilles J. M. Schoreder. “Sleep bruxism and its relationship with other sleep disorders: A narrative review.” *J Oral Rehabil* 47 (2020):367-377.
9. Sonal A. Jagda, Supriya P. Tali, Renu B. Singh. “Pharmacological management of bruxism: A systematic review.” *J Clin Diagn Res* 15 (2021):ZE01-ZE05.
10. Fahad Alkhadhari, Sadiq Al-Ali, Nader Hamdan. “Occlusal characteristics and sleep bruxism: A systematic review.” *J Oral Rehabil* 51 (2024):110-120.

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Address for Correspondence: Mira, Singh, Department of Pediatric Dental Sciences, Delhi Academy of Dental Research, New Delhi, India, E-mail: mira.singh@dadr.ac.in

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