

# Effect of Physical Therapy in Bruxism Treatment: A Systematic Review



Cinthia S. M. Amorim, PhD, Adriana S. Espirito Santo, MS, Marjorie Sommer, PT, and Amélia P. Marques, PhD

## ABSTRACT

**Objective:** The aim of this literature review was to examine the effect of physical therapy in bruxism treatment.

**Methods:** The data sources used were Medline, Excerpta Medica Database, Cumulative Index of Nursing and Allied Health Literature, Physiotherapy Evidence Database, SPORTDiscus, Scientific Electronic Library Online, Web of Science, Cochrane Library, Scopus, and Literatura Latino-Americana e do Caribe em Ciências da Saúde. We included randomized and nonrandomized and controlled and noncontrolled clinical trials and interventions focused on physical therapy as treatment for sleep bruxism or awake bruxism. Two reviewers independently screened the records, examined full-text reports for compliance with the eligibility criteria, and extracted data.

**Results:** The present review found 1296 articles. We excluded 766 duplicated articles and 461 irrelevant articles and selected 69 titles to read. Forty-five of these were excluded, leading to a total of 24 that met the eligibility criteria and were included in our analysis. The articles were grouped into 7 treatment methods used in physical therapy. The treatment methods were electrotherapeutic (14 articles), cognitive-behavioral therapy (3 articles), therapeutic exercises (2 articles), acupuncture (2 articles), postural awareness (1 article), muscular relaxation (1 article), and massage (1 article). Results and conclusions, methodological quality, and quality of evidence of each study were reported.

**Conclusions:** These results suggest very low-quality evidence that diverse methods used in physical therapy improve muscle pain and activity, mouth opening, oral health, anxiety, stress, depression, temporomandibular disorder, and head posture in individuals with bruxism. This finding is mainly a result of the poor methodological quality of most of the studies. (*J Manipulative Physiol Ther* 2018;41:389-404)

**Key Indexing Terms:** *Bruxism; Physical Therapy Modalities; Clinical Trial*

## INTRODUCTION

The International Classification of Sleep Disorders of the American Academy of Sleep Medicine defines sleep bruxism (SB) as a sleep-related movement disorder characterized by grinding or clenching of teeth during sleep. Awake bruxism (AB), however, is a semivoluntary teeth clenching activity that is rarely audible. The prevalence of SB and AB in adults is 8% and 20%, respectively; studies indicate that 85% to 90% of the general population experience episodes of bruxism during their lives.<sup>1-7</sup> Thus, it is important to find an effective bruxism treatment. Bruxism affects millions of people

throughout the world and is considered one of the most harmful activities for the stomatognathic system, mainly because of the associated morphologic, pathophysiologic, and psychosocial features and clinical consequences.<sup>8,9</sup> Because of the muscle pain, muscle activity alterations, limitation of mouth opening, anxiety, stress, depression, poor sleep and oral health quality, temporomandibular disorder (TMD), and postural alterations, treatment using an interdisciplinary professional team composed of dentists and physiotherapists is important.<sup>2,3,5,10</sup>

Thus, it is still recommended that bruxism management be provided, with caution, within the framework of a conservative “multiple-P” approach (ie, physiotherapy, plates, pep talk, pills, psychology).<sup>11</sup> Systematic reviews have been performed that examined the effects of bruxism treatment in children and individuals with developmental disabilities using management protocols such as pharmacotherapy, occlusal splint (OS), botulinum toxin, biofeedback (BF), and cognitive behavioral therapy (CBT).<sup>3-5,11-14</sup> However, what represents the most effective treatment is still unclear, and there is no conclusive evidence of effectiveness.<sup>15,16</sup>

Treatment methods used in physical therapy include electrotherapy, therapeutic exercises, muscle relaxation, postural awareness, acupuncture, manual therapy, and CBT. Studies of CBT particularly demonstrate that its use

Department of Physical Therapy, Speech-Language Pathology and Audiology and Occupational Therapy, School of Medicine, University of Sao Paulo, Brazil.

Corresponding author: Cinthia S. M. Amorim, PhD, Department of Physical Therapy, Speech-Language Pathology and Audiology and Occupational Therapy, School of Medicine, University of Sao Paulo, Rua Cipotanea 51, Cidade Universitaria, CEP: 05360-000, Sao Paulo, SP, Brazil. Tel.: +55 11 30918423. (e-mail: [cinthia\\_miotto@usp.br](mailto:cinthia_miotto@usp.br)).

Paper submitted November 7, 2016; accepted October 25, 2017. 0161-4754

Copyright © 2018 by National University of Health Sciences. <https://doi.org/10.1016/j.jmpt.2017.10.014>

by physical therapists in clinical practice is substantial; studies encourage the integration of physical and psychological interventions by these health professionals. There is increasing recognition of the benefits of applying the biopsychosocial model of health via the incorporation of interventions that combine exercise and psychological treatment (most commonly those based on principles of CBT) within a physical therapy practice. Studies have investigated the use of combined interventions by trained physical therapists for several musculoskeletal conditions, such as low back pain, neck pain, knee osteoarthritis, musculoskeletal pain, and cancer.<sup>17,18</sup> However, the effectiveness of CBT for treatment of the signs and symptoms of bruxism is still questionable and continues to be studied. Furthermore, the effect of BF indicated a lack of scientific evidence to support CBT's effectiveness in treating SB.<sup>11,19,20</sup> Therefore, the increased number of studies on physical therapy as a treatment for bruxism and the lack of systematic review make reviews a relevant and indispensable tool for synthesizing evidence, assessing study quality, and summarizing results.<sup>19-26</sup>

The objective of this systematic review of clinical trials was to assess the effect of physical therapy in individuals with bruxism for treatment of muscle pain and activity, mouth opening, anxiety, stress, sleep, oral health, TMD, and head posture.

## METHODS

This systematic review employed the recommendations of the Preferred Reporting Items for Systematic Reviews and Meta-Analysis<sup>27</sup> as a supporting tool for the quality of the textual presentation.

### Data Sources

A systematized bibliographic search identified studies in the following databases: Medline, Excerpta Medica Database, Cumulative Index of Nursing and Allied Health Literature, Physiotherapy Evidence Database, SPORTDiscus, Scientific Electronic Library Online, Web of Science, Cochrane Library, Scopus, and Literatura Latino-Americana e do Caribe em Ciências da Saúde. We carried out search expansion by checking for potential additional papers in the Google Scholar database, in the reference lists of relevant papers, and in personal databases and institutional libraries. We included studies published in English, Spanish, or Portuguese between January 1990 and September 2015.

The following English language descriptors were used: bruxism and physical therapy modalities, rehabilitation, physical medicine or rehabilitation, exercise therapy, muscle stretching exercises, massage, muscle relaxation, relaxation therapy, imagination, imagery, cognitive therapy, behavioral therapy, acupuncture, complementary therapy, and electric stimulation therapy. The Medline search strategy is shown in [Appendix 1](#) of the supplementary data (available online only).

### Study Selection

The methodological characteristics of the selected studies were summarized according to a format that enabled a structured summary of the articles in relation to 4 main issues: P: population; I: intervention; C: comparison; and O: outcome.<sup>28</sup> According to the eligibility criteria, the study population (P) addressed individuals with SB or AB without specifying age or sex. Intervention (I) focused on physical therapy as a treatment for clinically identified SB or AB using polysomnography or electromyography (EMG). The comparison criterion (C) included control conditions, and the study outcomes (O) included muscle pain and activity, mouth opening, anxiety, stress, depression, sleep and oral health quality, TMD, or head posture assessed immediately after treatment or at any follow-up period.<sup>28</sup>

Two independent reviewers (C.S.M.A. and M.S.) identified articles as published and indexed, nonpublished and nonindexed, or published and undergoing indexing trials. In case of disagreement between the 2 reviewers, a third reviewer (A.P.M.) made the final judgment. After a reading of the titles, duplicated and irrelevant articles were excluded, and the remaining studies were separated and their abstracts read. Finally, the reviewers read the full text of the selected articles. From these articles, those that met the eligibility criteria were included.

### Data Extraction

The following data were extracted using a standardized form: author and country of publication; type of study (randomized or nonrandomized, controlled or noncontrolled clinical trial); description of the participants with SB or AB (study size [n], sex, and age); intervention based on physical therapy (number, duration, and frequency of sessions); outcomes (muscle pain and activity, mouth opening, anxiety, stress, depression, sleep and oral health quality, TMD, or head posture); assessment tool and observation points (baseline, end of treatment, and follow-up); and methodological quality score, results, and conclusions.

### Quality Assessment

The methodological quality studies included in this systematic review were reviewed and assigned according to the Physiotherapy Evidence Database (PEDro) and Jadad scales.<sup>29</sup>

The validated and reliable PEDro scale is directed toward physical therapy and rehabilitation and has 8 items related to methodological quality (random allocation, concealed allocation, baseline comparability, blinded participants, blinded therapists, blinded assessors, adequate follow-up, and intention-to-treat analysis), 2 items related to statistical reporting (between-group comparisons and point estimates and variability), and 1 item (eligibility criteria) that is not considered in the total score because it is related to external validity. The total PEDro score ranges from 0 to

Download English Version:

<https://daneshyari.com/en/article/8559859>

Download Persian Version:

<https://daneshyari.com/article/8559859>

[Daneshyari.com](https://daneshyari.com)