Universidade Federal Do Rio Grande Do Sul

Faculdade De Odontologia

Programa De Pós Graduação Em Odontologia

Doutorado em Clínica Odontológica - Odontopediatria

SLEEP BRUXISM AND QUALITY OF LIFE OF CHILDREN: A SYSTEMATIC REVIEW

Porto Alegre, 2018

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Tese apresentada à Faculdade de Odontologia da Universidade Federal do Rio Grande do Sul – UFRGS, como parte dos requisitos para obtenção do título de Doutorado em Clínica Odontológica com ênfase em Odontopediatria.

Porto Alegre, 2018

CIP - Catalogação na Publicação

Britto Azevedo, Claudia
SLEEP BRUXISM AND QUALITY OF LIFE OF CHILDREN: A SYSTEMATIC REVIEW / Claudia Britto Azevedo. -- 2018.
44 f.
Orientador: Jonas Almeida Rodrigues.

Tese (Doutorado) -- Universidade Federal do Rio Grande do Sul, Faculdade de Odontologia, Programa de Pós-Graduação em Odontologia, Porto Alegre, BR-RS, 2018.

1. Criança. 2. Bruxismo do Sono. 3. Qualidade de vida. I. Almeida Rodrigues, Jonas, orient. II. Título.

Elaborada pelo Sistema de Geração Automática de Ficha Catalográfica da UFRGS com os dados fornecidos pelo(a) autor(a).

À minha avó, fonte de inspiração e sabedoria. Obrigada por ter caminhado ao meu lado, sendo base e fonte de apoio quando mais precisei.

Aos meus pais, que doaram-se sem esperar nada em troca, que me apoiaram incondicionalmente nessa jornada e que sempre colocaram a minha educação em primeiro lugar. Sem vocês não chegaria à lugar algum.

AGRADECIMENTOS

Agradeço ao meu orientador, Prof. Dr. Jonas Rodrigues, pela disponibilidade, dedicação e orientação.

À professora Dra.Tathiane Lenzi, que em meio às tantas atribuições do dia-a-dia mostrou-se sempre acessível e disponível para colaborar com este trabalho.

À colega Vitória Chami, pela longa amizade que nutrimos, e cuja ajuda e foi imprescindível para a elaboração desta pesquisa.

À minha família: irmãs, tias, primos e sobrinhos, por compreenderem a distância física e por sempre se fazerem sempre presentes em minha vida.

Ao meu namorado, Lucas Muratore, por compreender a ausência durante a elaboração deste trabalho, e por diariamente ser fonte de amor, apoio e compreensão.

Aos meus grandes amigos que estiveram comigo do início ao fim nesta jornada: Bethânia Belchior, Jéssica Abdalla, Ivam Freire, Juliane Brustolin e Caroline Lagemann. Vocês foram ombro, coração e razão sempre que necessitei! Agradeço em especial ao querido amigo Fernando Bitencourt, pelo incentivo diário e pelos bons momentos compartilhados. Carinho e gratidão eternos!

Agradeço ao Prof. Dr. Juliano Pelim Pessan, por aceitar compor a banca examinadora e enriquecer este trabalho.

Ao Prof. Dr. Matheus Neves pela gentileza de aceitar contribuir com este trabalho como membro da banca examinadora.

À Prof. Dra. Juliana Jobim por aceitar gentilmente compor a banca examinadora. À Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) pela concessão de bolsa de estudos e apoio.

Ao programa de pós-graduação da UFRGS por todas as oportunidades de ensino e crescimento, bem como pela contribuição na minha formação.

SUMÁRIO

RESUMO

O bruxismo do sono (BS) é uma atividade muscular mastigatória durante o sono caracterizada como títmica (fásica) ou não rítmica (tônica), que pode causar várias consequências ao sistema estomatognático. objetivo desta revisão sistemática foi avaliar o impacto do BS na qualidade de vida (QV) de crianças. A seleção dos estudos consistiu em duas fases. A busca na literatura foi realizada através das seguintes bases de dados: PubMed/MEDLINE, LILACS, Web of Science, Scopus, TRIP, Livivo e a literatura cinzenta também foi analisada. O diagnóstico de BS e QV foram realizados através de questionários validados e exame clínico. A literatura selecionada foi avaliada criticamente através da Ferramenta de Avaliação Crítica do Instituto Joanna Briggs (JBI) para Estudos do tipo Caso-Controle, e a qualidade geral da evidência foi testada através da ferramenta GRADE. De 388 estudos inicialmente identificados, 3 estudos do tipo caso-controle foram incluídos na avaliação final, com a participação de 83 casos de BS e 141 controles. Todos os estudos foram realizados no Brasil, publicados entre 2015 e 2017, e foram classificados como risco moderado de viés. Dois estudos indicaram que os escores do Brazilian – Early Childhood Oral Health Impact Scale (B-ECOHIS) para a escala total eram baixos e sem significância estatística ($p > 0,05$), porém um estudo encontrou uma associação positiva ($p = 0,031$). Os autores dos estudos encontraram relações significantes entre BS e problemas respiratórios ($p = 0,04$), presença de desgaste ($p < 0,01$), cárie dentária ($p < 0,01$), maloclusão ($p = 0,02$), uso de chupeta (RP = 2,33 / $p < 0,001$) e baixa renda familiar ($p = 0,02$). Com base na literatura restrita envolvida nesta revisão sistemática, não há evidências suficientes para afirmar que a presença de BS tenha um impacto negativo na QV de crianças. A qualidade geral da evidência foi avaliada como muito baixa pelo GRADE. Os resultados obtidos nesta revisão sistemática devem

ser interpretados com cautela, e outros estudos neste tópico devem ser desenvolvidos para a construção de uma evidência mais confiável.

Palavras chave: Cuidado da criança. Bruxismo do sono. Qualidade de vida. Saúde bucal.

ABSTRACT

Sleep bruxism (SB) is a masticatory muscle activity during sleep that is characterized as rhythmic (phasic) or non-rhythmic (tonic) that can cause several consequences to the stomatognathic system. The aim of this systematic review was to evaluate the impact of SB on quality of life (QoL) of 0 to 6 years old children. The selection of studies consisted of two phases. Literature search was undertaken through PubMed/MEDLINE, LILACS, Web of Science, Scopus, TRIP, Livivo databases and grey literature to verify available studies about the topic. Diagnosis of SB and QoL were performed using questionnaires and clinical examination. The selected literature was critically evaluated by Joanna Briggs Institute (JBI) Critical Appraisal Tool for Case Control Studies, and the overall quality of evidence was tested through Grading of Recommendations Assessment, Development and Evaluation (GRADE). Out of 388 papers initially detected, 3 case-control studies were included, with the participation of 83 cases of SB and 141 controls. All studies were conducted in Brazil, and published between 2015 and 2017, and were classified as moderate risk of bias. Two studies indicated low scores of total scale for B-ECOHIS, despite without statistical significance ($p>0.05$). However, one study has found a positive association ($p = 0.031$). An association between the presence of SB and other habits and participants personal characteristics were also identified. The authors have found associations between SB and respiratory problems ($p=0.04$), presence of wear ($p<0.01$), dental caries ($p<0.01$) and malocclusion ($p=0.02$), pacifier use ($RP=2.33/p<0.001$), and higher family income ($p=0.02$). The overall quality of evidence was rated as very low by GRADE assessment. Based on the restricted literature found in this systematic review, there is insufficient evidence to state that the presence of SB has a negative impact on the QoL of children. These results should be carefully interpreted, and further studies on this topic should be developed for the construction of more reliable evidence.

Key words: Child Care; Sleep bruxism; Quality of life; Oral health.

ANTECEDENTES E JUSTIFICATIVAS

Com uma prevalência que atinge entre 3,5 e 40,6% das crianças de 0 a 12 anos de idade,[1] a definição de bruxismo do sono (BS) vêm sofrendo seguidas atualizações ao longo das últimas décadas[2,3], visto que novos achados científicos relativos à sua origem e fisiopatologia têm levado a um amadurecer da compreensão de sua vasta etiopatogenia.

No momento atual, define-se como bruxismo a atividade parafuncional dos músculos mastigatórios, a qual difere-se através do momento circadiano em que o evento acontece: durante o sono (bruxismo do sono) ou em estado de vigília (bruxismo em vigília).[4] Apesar de serem consideradas entidades distintas, ambos tipos de bruxismo têm a sua gênese no sistema nervoso central,[5] de onde parte o estímulo inicial para que haja a contração involuntária dos músculos orofaciais. Substâncias neuroquímicas, como neurotransmissores adrenérgicos, noradrenérgicos e serotonérgicos estão altamente relacionados com esta função.[6]

Particularmente no BS, a atividade muscular mastigatória rítmica está associada a um episódio de microdespertar adrenérgico e aumento da frequência cardíaca durante a fase de sono REM.[7] Em pessoas consideradas saudáveis, tal parafunção não é vista como um distúrbio, mas sim como um comportamento motor de etiologia multifatorial, que vem a ser um sinal de alguma outra condição de saúde.[8,9]

O diagnóstico do BS em crianças ainda é um desafio, uma vez que a ferramenta principal de avaliação desta condição na infância é o relato dos pais ou responsáveis.[10] Recomenda-se que o um exame físico das estruturas dentárias e musculares faciais seja realizado para completar o provável diagnóstico.[3] As polissonografias, padrão-ouro para diagnóstico do BS, acabam sendo menos utilizadas em crianças devido a dificuldade da sua aplicação, a qual é realizada em ambiente hospitalar, gerando um alto custo financeiro

e desconforto para o paciente infantil e seus pais.[10-12] Desta forma, a literatura considera satisfatoriamente aceitável que o diagnóstico de BS em crianças seja realizado através do relato dos pais ou responsáveis, visto que um estudo prévio identificou que a narrativa de apertar/ranger de dentes eram coincidentes com 83% dos casos confirmados com a polissonografia quando os pais estavam mais informados sobre os sinais e sintomas do BS.[13]

Os sintomas mais frequentes do BS em crianças são dores de cabeça e musculares, cansaço, sonolência, dificuldade de concentração, hiperatividade, ansiedade, agressividade e déficit de atenção,[14-16] além de experiências orais negativas, como o desgaste dentário exacerbado, fraturas de restaurações, dor e desconforto na articulação temporomandibular e hipertrofia do músculo masséter, fatores que podem levar a um impacto negativo na qualidade de vida.[17]

Até o presente momento nenhuma terapia demonstrou ser eficaz no controle do BS em crianças, principalmente em razão da multiplicidade dos fenômenos associados a este hábito parafuncional, fato que dificulta a abordagem terapêutica e a detecção de fatores etiológicos.[18]

A Organização Mundial de Saúde define qualidade de vida como sendo a percepção individual da sua vida, no contexto da cultura e sistemas de valores do meio em que se está inserido em relação aos seus objetivos, expectativas, padrões e aflições sob a influência de vários fatores, como a saúde física e psicológica, por exemplo.[20]

Visando aferir o impacto de certos eventos na vida de uma pessoa, diversos questionários de qualidade de vida foram desenvolvidos e validados. Na Odontologia, pode-se verificar que alterações bucais e dentárias podem causar transtornos no desempenho físico, psicológico e social, comprometendo atividades simples do dia a dia

de uma criança. As lesões de cárie, as traumáticas e as maloclusões estão comprovadamente associadas a uma pior qualidade de vida durante a infância.[21]

Por tal razão, uma vez que a saúde bucal constitui parte da saúde geral e é essencial para a qualidade de vida do indivíduo, o BS vem sendo apontado como um fator de risco para a manutenção desta durante a infância.[22] Nesse contexto, alguns estudos relacionando BS e qualidade de vida em crianças têm sido desenvolvidos, porém, os achados são contraditórios.[23, 24]

Devido a essas variações, uma análise crítica e sistemática da literatura atual é necessária para obter dados mais precisos. Assim, o objetivo desta revisão sistemática é discutir, com base em evidências científicas, o impacto do bruxismo do sono e da qualidade de vida de crianças de 0 à 6 anos de idade.

ARTICLE TO BE SUBMITTET TO THE JOURNAL OF ORAL REHABILITATION

(Qualis CAPES A1)

MAIN TEXT

Article type: Review

Sleep Bruxism and Oral health-related Quality of life in Children: A Systematic Review

Running Title: Sleep Bruxism and Quality of life in Children

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ABSTRACT

Sleep bruxism (SB) is a masticatory muscle activity during sleep that is characterized as rhythmic (phasic) or non-rhythmic (tonic) that can cause several consequences to the stomatognathic system. The aim of this systematic review was to evaluate the impact of sleep bruxism (SB) on oral health-related quality of life (OHRQoL) of 0 to 6 years old children. Literature search was undertaken through PubMed/MEDLINE, LILACS, Web of Science, Scopus, TRIP, Livivo databases and grey literature was also verified. Two reviewers independently selected the studies, extracted the data and assessed the risk of bias using Joanna Briggs Institute (JBI) Critical Appraisal Tool for Case Control Studies. The Quality of evidence was tested using Grading of Recommendations Assessment, Development and Evaluation (GRADE). Out of 388 potentially eligible studies, 5 were selected for full-text analysis and 3 were included in the review, with the participation of 83 cases of SB and 141 controls. All studies were conducted in Brazil, published between 2015 and 2017, and used the B-ECOHIS instrument to evaluate OHRQoL. Two studies found no association between SB and OHRQoL, while one paper showed a significant negative impact of SB on the OHRQoL of children. SB was associated with respiratory problems, presence of tooth wear, dental caries, malocclusion as well as income and pacifier use. The studies were classified as moderate risk of bias, and quality of evidence was judged as very low. The evidence is currently insufficient for definitive conclusions about the impact of SB on OHRQoL of children.

Keywords: Child Care; Sleep Bruxism; Quality of Life; Oral Health.

INTRODUCTION

Sleep bruxism (SB) is a masticatory muscle activity during sleep that is characterized as rhythmic (phasic) or non-rhythmic (tonic), and it is not considered a movement disorder or a sleep disorder in otherwise healthy individuals,[1] but a sign of a health condition in some (e.g. obstructive sleep apnea, sleep disorders, gastro-esophageal reflux).[2-4]

Also, it has been suggested that SB may have positive consequences for some bruxers, since it may have a protective nature (e.g., increases the air patency of the upper respiratory airways, [5] stimulates salivation preventing dental erosion, [6] and it is the ending episode of a respiratory arousal.)[7]

Nonetheless, when not controlled, SB can cause multiple consequences on the stomatognathic system. The most recurrent signs and symptoms are abnormal tooth wear, tensional headaches, masticatory muscles pain or fatigue, and temporomandibular disorders.[8] In this sense, SB could affect significantly the life and well-being of children and their families.

The prevalence of SB in children is very variable, ranging from 3.5 to 46%.[9] This variance may be attributed to fact that the diagnosis of SB in children is still challenging, once it is predominantly accessed through parental report.[10]. Other validated methods such as physical examination and/or questionnaires are often used.[11,12] Although polysomnography is the current standard of reference for diagnosing SB, it has some disadvantages, such as high cost and technical difficulties when used in children[13.]

So far, no therapy has been proven to be effective in controlling SB in children, mainly because of the multiplicity of the phenomena associated with this parafunctional habit.[14] Untreated oral and dental changes can cause disorders in physical, psychological and social performance, compromising the simple activities of a child's daily routine.

In addition, some studies concerning SB and quality of life (QoL) in children have been developed, with contradictory findings.[15,16] Mostly, there is an influence of SB in QoL when psychosocial factors and symptomatology are associated to it.[17] However, there is no agreement on how SB may affect OHRQoL of children. Therefore, this systematic review aimed to evaluate if SB has an impact on OHRQoL of 0 to 6 years old children.

MATERIALS AND METHODS

Protocol and registration

This systematic review was conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)[18] Statement and recorded in International Prospective Register of Systematic Review (CRD42018107062).

Focused PICOS question

The research question of this systematic review was: Is SB associated with a negative impact on OHRQoL of 0 to 6 years old children? Focused PICOS question was defined as follows:

Population: 0 to 6 years old children

Intervention: Sleep bruxism

Comparison: Without sleep bruxism

Outcome: OHRQoL

Study design: Observational studies (case-control, cross-sectional, cohort)

Information Sources and Search

A comprehensive literature search was undertaken through PubMed/MEDLINE,

Latin American and Caribbean Health Sciences (LILACS), Web of Science, SCOPUS, TRIP and Livivo databases to identify the literature up to September 2018 related to research question. The search was conducted with no publication year or language limits. A Portuguese and Spanish search also was conducted for LILACS database. Grey literature was searched through ProQuest and Google Scholar. Detailed search strategy is provided in Appendix 1. The results of searches of various databases were crosschecked in order to locate and eliminate duplicates using Endnote X8 (Thompson Reuters, Philadelphia, Pennsylvania). The reference lists of screened articles were evaluated, and the full texts of potentially interesting studies to the research question were evaluated.[19]

The scope of this review included studies that assessed the impact of SB on OHRQoL of 0 to 6 years old children. However, we excluded studies that 1) did not use any validated method for diagnosing SB; 2) did not assess OHRQoL with validated instruments; 3) did not compare children's OHRQoL between children with and without SB; 4) evaluated the OHRQoL in compromised subjects (e.g. patients with systemic diseases). Papers without access even after authors contact by e-mail and literature reviews, case reports, expert viewpoints or consensus were also excluded.

Search Steps: Screening and Selection

Step 1: Titles and abstracts were reviewed independently by two authors (C.B.A. and V.O.C.), using an online software (Rayyan, Qatar Computing Research Institute), and selected for further review if they met the inclusion criteria. The inter-examiner agreement was calculated (Kappa = 0.88), indicating good agreement.

Step 2: Full-text articles of the studies selected in previous step were retrieved and reviewed independently by two authors (C.B.A. and V.O.C.). Those studies that did not show any exclusion criteria were maintained.

In both steps, any disagreement was firstly solved by discussion between the reviewers (C.B.A. and V.O.C.). If discrepancies remained, a third author (T.L.L.) would have been consulted. In this present study, no discrepancies were found.

Data collection process and data items

Both reviewers independently collected the data of the eligible studies. For each study, the following data were systematically extracted: author, year of publication, study design, country, sample size, age, criteria for diagnosing SB, OHRQoL questionnaire and outcome. If the required data were not complete, the authors would be contacted.

Risk of Bias in Individual Studies and Quality of Evidence

In accordance to Joanna Briggs Institute (JBI) Critical Appraisal Checklist for Analytical Cross-Sectional Studies Risk of Bias[20], the reviewers (C.B.A and V.O.C) critically evaluated the selected literature. The risk of bias would be categorized as "high" when the study reaches up to 50% score "yes"; "moderate" when the study reached 51% to 70% score "yes"; and "low" when the study reached more than 71% score "yes".

The quality of evidence was classified as low according to the grading of recommendation, assessment, development, and evaluation (GRADE).[21]

RESULTS

Study Selection

The search strategy identified 388 potentially relevant records, excluding duplicates. The first screening resulted in 5 studies remained for full-text reading. Finally, 3 papers were included in the systematic review. Figure 1 shows the flowchart summarizing the selection process for studies.

Descriptive analysis

All included papers[16,22,23] were classified as case-control studies, with the participation of 83 cases of SB and 141 controls. Moreover, studies were conducted in Brazil, and published between 2015 and 2017.

Parental report and questionnaire application were the main methods used for diagnosing SB. Only one study performed clinical evaluation in association with parents report. To evaluate the association of SB and OHRQoL, all three papers used the validated Brazilian version of Early Childhood Oral Health Impact Scale (B-ECOHIS) questionnaire.

Antunes et al. (2015)[22] conducted a case-control study with 61 children from 3 to 6 years old in Rio de Janeiro, Brazil. 37 girls and 24 boys participated in this study, and the mean age of the participants was 3.95±0.99 years. A questionnaire was applied to detect the presence or absence of SB through parental report of audible nocturnal teeth grinding, and B-ECOHIS questionnaire was used to assess QoL. The mean B-ECOHIS scores for total scale and subscales were low and without statistical significance regardless the evaluated group ($p > 0.05$).

Almeida et al. (2016)[23] investigated the impact of parental-reported SB on QoL of 75 children from 3-5 years of age in Roraima, north of Brazil. This case-control study interviewed parents/guardians about SB and sociodemographic information. The variables "income" and "pacifier use" (RP:2.31; $p<0.001$) revealed an association with bruxism, still, total ECOHIS scores were not significant ($p> 0.05$).

The study of Silva et al. (2017)[16] was conducted in Piauí, northeastern region of Brazil. This case-control study included 88 children (2-5 years old) with parental report

of SB. Data collection was performed through the application of the socioeconomic form and B-ECOHIS questionnaire. Pain (37.5%), difficulty eating (33.0%), missing a school day (26.1%), irritation (25.0%) and difficulty drinking (24.9%) were the most frequent symptoms reported in the child impact section of B-ECOHIS. In the child impact section, significant associations were found between the domains of function ($p = 0.001$) and self-image / social interaction ($p = 0.009$).

In summary, SB was associated with respiratory problems, presence of tooth wear, dental caries, malocclusion as well as family income and pacifier use. In two studies, SB did not significantly affect the OHRQoL. Conversely, in another paper, the presence of SB was significantly associated with the total B-ECOHIS score as well as with function domain and self-image / social interaction, showing a negative impact on the OHRQoL of children. A summary of descriptive characteristics of the included studies is available in Table 1.

Bias Risk and Quality of Evidence

All selected studies presented moderate bias risk. Limitations related to method used for diagnosing SB and lack of management of the confounding factors were the major problems identified in the quality analysis. The overview of the quality analysis for cross-sectional studies is shown in Figure 2. A very low quality of evidence was judged according to the GRADE (Table 2).

DISCUSSION

Sleep bruxism (SB) is a masticatory muscle activity during sleep that, when not controlled, can cause multiple consequences on the stomatognathic system. A few studies concerning SB and quality of life (QoL) in children have been developed, with

contradictory findings.[15,16] To the best of our knowledge, this is the first systematic review that investigated if SB has an impact on OHRQoL of 0 to 6 years old children. Due limited number of included studies (I^2=74%), the quantitative evaluation was not explored.

All three studies used the Brazilian version of Early Childhood Oral Health Impact Scale (B-ECOHIS), which is a validated questionnaire that measures the perception of parents/guardians about the impact of oral conditions on the OHRQoL of young children and their families. It is divided in two sections (Impact on the child – CIS/Family – FIS) with a total of 13 domains.[23] The total score of the questionnaire ranges from 0 to 52 points, and is obtained by a simple sum of the answers. Higher scores have a negative impact on OHRQoL.[24]

Antunes et al. (2015) and Almeida et al. (2016) showed that total B-ECOHIS scores were not significantly associated with SB. On the other hand, Silva et al. (2017) found a significant association of SB between the function domains and self-image/social interaction. Moreover, the presence of SB was significantly associated with the total B-ECOHIS score.

The diagnosis methods of SB in children are considered as a limitation of this study. A questionnaire applied to parents was used to identify the presence of SB. Only one study[20] associated the parent's perceptions with clinical inspection. The diagnosis of SB is challenging in Dentistry. Firstly, it should be evaluated by patient's history (e.g. patients or parents/guardians report of nocturnal tooth grinding; orofacial discomfort or pain) and clinical examination (e.g. presence of tooth wear, fractured restorations; masticatory muscles hypertrophy), being these findings confirmed by polysomnography.[1]

However, the cost of polysomnography limits its use mainly in epidemiological studies.[2] Besides, the results may be not representative because the exam is not performed

in the family environment and, mainly in children, the cooperation for evaluation can be compromised.[22] Thus, the parents'/guardian's report of nocturnal tooth gridding is a well-accepted criteria for identifying the presence of bruxism in children by the American Association of Sleep Medicine.[12] However, this diagnosis criteria is subjective and underreporting of bruxism can occur when parents are not aware of this habit in their child.

Multiple risk factors have been associated to SB. It has been evidenced that second hand smoke and sleep disturbances present stronger association with SB in children with 7 to 11 years old.[4] This systematic review has pointed out that SB in children is associated with respiratory problems, malocclusion, as well as pacifier use and household income.

A variety of conditions may interact with bruxism (and with each other) in the clinical setting, thus influencing the particular degree of bruxism that leads to a negative health outcome. Nevertheless, there are still many unsolved issues concerning the etiology of bruxism that have consequences on the clinical management strategies.

Included studies scored moderate bias risk and were rated as very low quality of evidence. Limitations of the method for diagnosing SB and the lack of management of the confounding factors may have compromised the validity of some studies. Furthermore, all studies were performed in Brazil. Since results must be analyzed considering environmental, social, economic and cultural factors, which influence people's behavior and health perceptions, the external validity of findings is limited. Further studies about this topic should be developed for the construction of more reliable evidence.

Further evidence-based studies evaluating this association through standardized and validated diagnostic methods are necessary to construct a more reliable evidence. In

conclusion, from this systematic review, there is insufficient evidence to state if the presence of SB has an impact on OHRQoL of 0 to 6 years old children.

CONFLICT OF INTERESTS

The authors declare no conflict of interest.

ACKNOWLEDGEMENTS

This study was financed in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - Brasil (CAPES) - Finance Code 001.

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TABLES AND FIGURES

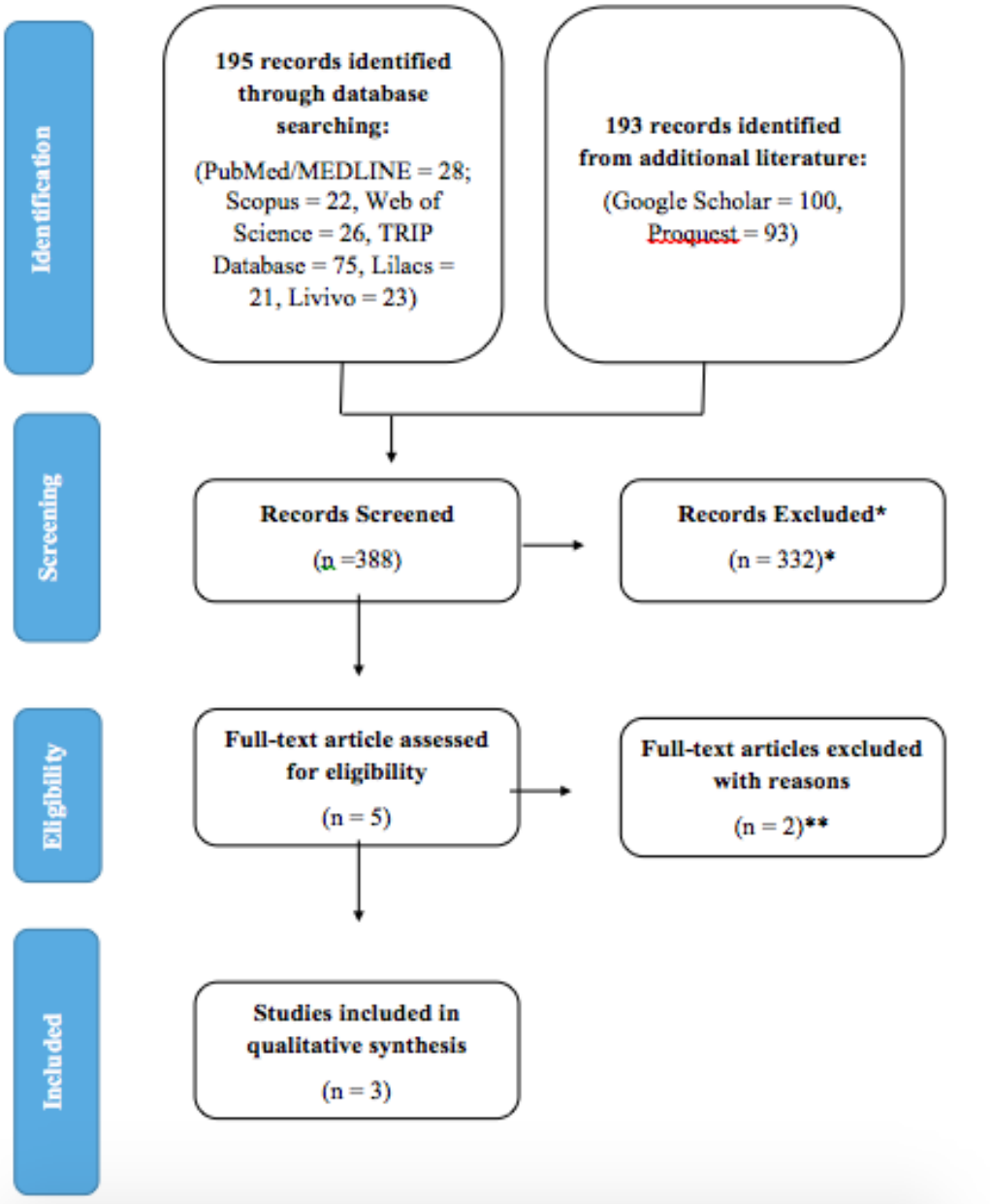

Figure 1. Flow diagram of literature search and selection criteria.

*Did not associate sleep bruxism and quality of life (n=315). Participants were not children (n=17).
** Participants were older than 6 years old. (n=2)

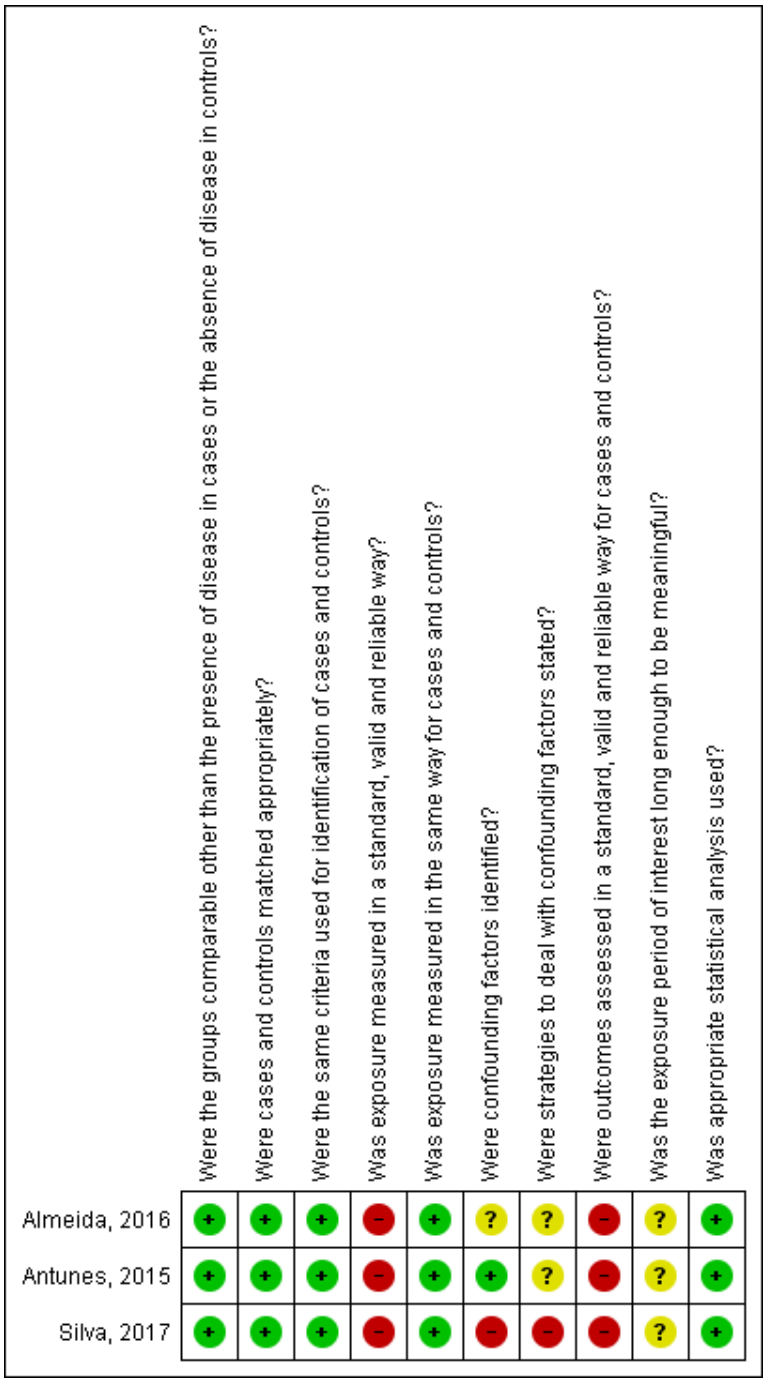

Figure 2. Bias risk summary. Generated using Review Manager (RevMan) [Computer program]. Version 5.3. Copenhagen: The Nordic Cochrane Centre; The Cochrane Collaboration, 2014.

Table 1. Summary of descriptive characteristics of included articles (n=3).

STUDY CHARACTERISTICS		POPULATION			EXPOSITION CHARACTERISTICS		OTHER MEASURES	MAIN FINDINGS	
Author, Year (Country)	**Study design**	**Sample and mean age (years± SD)**	**Age group**	**Sample settings**	**Sleep Bruxism diagnosis methods**	**Quality of Life instrument**		**Findings**	**Main Conclusions**
Antunes et al (2015) Rio de Janeiro, Brazil	Case-control	61 (37 girls) 3.95 ± 0.99	3-6 years old	SB group: 21 Control group: 40	Self-Reported questionnaire to the parents and clinical evaluation	Brazilian version of Early Childhood Oral Health Impact Scale (B-ECOHIS)	Age, gender, behavior, respiratory problems, parafunctional habits, presence of wear, malocclusion, dental caries, relation degree of caretaker, caretaker educational level, economic classification	B-ECOHIS total scores: SB group: 4.52 (±5.02)/ Control group: 4.70 (±6.09) P=0.91 Associations between SB and respiratory problems (p = 0.04, OR: 0.33, CI: 0.09 to 1.14), dental wear (p < 0.01, OR: 0.01), malocclusion (p < 0.01, OR: 0.06), and dental caries (p = 0.02, OR: 0.22) were observed	SB did not significantly impact on OHRQoL

Almeida et al (2016) Rondônia, Brazil	Case-control	75 (33 girls) NR	3-5 years old	SB group: 33 Control group: 42	Parental report	B - ECOHIS	Pacifier users have 2.3 times more chance of developing SB (p=0.001) B-ECOHIS total scores were not affected by the presence of SB	SB did not significantly impact on OHRQoL
Silva et al (2017) Piauí, Brazil	Case-Control	88 (39 girls) NR	2-5 years old	SB group: 29 Control group: 59	Parental report	B-ECOHIS	The presence of SB was significantly associated with total B-ECOHIS score (p=0.031). Significant associations were found between the function domains (p=0.001) and self/image/social interaction (p=0.009)	SB had a negative impact on OHRQoL

(*) data calculated by the authors. NR= Not related by the authors.

Table 2. Grading of Recommendations Assessment, Development and Evaluation (GRADE) summary.

Question: Is sleep bruxism associate with a negative impact on OHRQoL of children aged 0-6 years old?

Certainty assessment						
№ of participants (studies) Follow-up	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Publication bias**	**Overall certainty of evidence**
B-Ecohis Scores (assessed with: B-Ecohis)						
83 cases 141 controls (3 observational studies)	serious [a]	serious [b]	not serious	serious [c]	none [d]	⨁◯◯◯ VERY LOW

a) The risk of bias across studies the studies was considered borderline moderate. Only two studies used questionnaires to evaluate the presence of SB.
b) The studies were considered heterogeneous, especially regarding methods for diagnosing SB.
c) Inconsistency among the studies was considered serious, once the results of one study contrasted from the others. In addition, one study did not present B-ECOHIS total score for both control and SB groups.

Appendix 1. Search strategy

Pubmed Search:
(((((("Sleep bruxism"[MeSH Terms] OR "nocturnal teeth grinding disorder" OR "Nocturnal bruxism" OR "sleep bruxism childhood" OR "Sleep-related bruxism")))) AND ((("Quality of Life" [MeSH Terms] OR "Quality of life" OR "Life quality" OR "Life qualities" OR "Oral health-related quality of life" OR "OHRQoL")))
Other Databases Search:
(((((("Sleep bruxism" OR "nocturnal teeth grinding disorder" OR "Nocturnal bruxism" OR "sleep bruxism childhood" OR "Sleep-related bruxism")))) AND ((("Quality of Life" OR "Life quality" OR "Life qualities" OR "Oral health-related quality of life" OR "OHRQoL")))
Search in Spanish:
((("Bruxismo del sueño" OR "Desorden nocturna de los dientes" OR "Bruxismo nocturno" OR "Bruxismo nocturne de la infancia" OR "Bruxismo del sueño reportado"))) AND ((("Cualidad de vida" OR "Cualidades de vida" OR "Cualidad de vida relacionada com la salud oral" OR "OHRQoL")))
Search in Portuguese:
((("Bruxismo do sono" OR "Desordem noturna dos dentes" OR "Bruxismo noturno" OR "Bruxismo noturno da infância" OR "Bruxismo do sono reportado"))) AND ((("Qualidade de vida" OR "Qualidades de vida" OR "Qualidade de vida relacionada à saúde oral" OR "OHRQoL")))

CONSIDERAÇÕES FINAIS

Com base na limitada literatura envolvida nesta revisão sistemática, não há evidências suficientes para afirmar que a presença de bruxismo do sono tenha um impacto na qualidade de vida de crianças de 0 à 6 anos de idade. Há, no entanto, uma associação positiva entre a presença de bruxismo e outros fatores que podem afetar a vida de crianças nesta faixa etária, como a presença de problemas respiratórios e maloclusões.

O hábito de usar chupetas parece influenciar a presença da parafunção em crianças. No entanto, esses achados são considerados limitados, uma vez que o diagnóstico de bruxismo do sono foi baseado em questionários e exame clínico, mas não houve confirmação por uma polissonografia (padrão-ouro). Além disso, o número total da amostra foi considerado pequeno, e a qualidade da evidência foi classificada como muito baixa, segundo os critérios GRADE.

Os resultados obtidos nesta revisão sistemática devem ser interpretados com cautela. Por fim, sugere-se que novos estudos do tipo caso-contole, com qualidade metodológica adequada, sejam realizados a fim de se construir uma evidência científica mais confiável.

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