

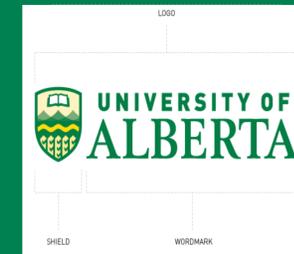
Association Between Sleep Bruxism and Psychosocial Factors in Children and Adolescents:

A Systematic Review

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BACKGROUND/OBJECTIVE

Emotional disturbances have classically been considered to be involved in the etiopathogenesis of bruxism, behavioral habits and complaints. Data supports that emotional stress could be an important factor. **The objective of this systematic review is to evaluate, if in children and adolescents, sleep bruxism (SB) is associated with psychosocial factors.**

METHODS

Eligibility criteria: Studies that evaluated the association between SB and psychosocial factors in children and adolescents were included.

Resources: MEDLINE, PubMed, EMBASE, The Cochrane Library and Virtual Health Library(BVS), Google Scholar.

Study Selection: In phase 1 two reviewers independently reviewed the titles and abstracts of all the identified studies. In phase 2 same selection criteria was applied to the remaining full articles to confirm their eligibility. Any disagreement was resolved by discussion and mutual agreement between two reviewers.

Data Extraction: Two authors independently collected the key information pertaining to the association between SB and psychosocial factors.

Risk of bias: The methodology of selected studies was evaluated by using the quality in prognosis studies tool (QUIPS).

Outcome measures: The presence of psychosocial factors in both groups of subjects, with and without bruxism was analyzed.

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RESULTS

CONCLUSION

Based on the limited evidence there could be a significant association between SB and stress, anxiety and tension personality trait in children between 6-11 year old and SB and psychosocial disorders in adolescents (12-17 years old).

Table 1 - Summary of descriptive characteristics of included articles

Author, Year	Sample/Setting	Age	Instrument	Psychosocial Factors	Findings	Main Conclusion
Kuch <i>et al</i> 1979	SB group: 50 (25 boys/25 girls) Control group: 50 (25 boys/ 25 girls) Case-control study Rosemount School District, Minneapolis, USA	5-6	The Missouri children's picture series	Conformity masculinity/femininity, maturity, aggression, inhibition, activity levels, sleep disturbance, somatization.	None of the test group means scores differed significantly from the control group mean scores (p>0.05).	Bruxism at age 5 or 6 appears to have little psychological significance.
Vanderas <i>et al</i> 1999	SB group: 129 (74 boys/ 55 girls) Control group: 38 (17 boys/ 21 girls). Public schools, Greece	6-8	Urinary test of catecholamines (epinephrine, norepinephrine, dopamine)	Stress	Bruxer children had a higher mean epinephrine, norepinephrine, and dopamine. The relative risk between 1 and 9.69, and 1 to 15.38, respectively, depending, of the catecholamine levels, in a 95% CI. Epinephrine (p=0.03) and dopamine (p=0.01) had a significant association with bruxism	Emotional stress is a prominent factor in the development of bruxing behaviour.
Herrera <i>et al</i> 2006	SB group: 10 (5 boys/5 girls) referred to the sleep or dental clinic for complaints of grinding sounds during sleep and abnormal tooth wear. Control group: 10 (5 boys/5 girls) non-bruxers Case-control study USA	5-15	Kaufman Brief intelligence test Achenbach child behaviour checklist	Daytime cognitive behavioral	The K-BIT score correlated strongly with the internalizing problems (r=0.76, p=.047, analysis of variance), and externalizing problems scale (r=0.74, p=.006, analysis of variance). The most significant of the individual subscales were the somatic problems scale (r=0.85, p=.010, analysis of variance) and conduct problems (r=.760, p=.04, analysis of variance).	Bruxer children have a higher arousal index, which may be associated with an increase incidence of attention-behaviour problems.
Katayoun <i>et al</i> 2008	SB group: 25 bruxers Control group: 25 non-bruxers Case-control study Only girls who attending summer camp, Tehran, Iran	12-14	Youth Self Report Questionnaire	Thought disorders, conduct disorders, antisocial disorders	Reported higher prevalence of thought disorders (p<0.005), conduct disorders (p <0.050) and antisocial disorders (p<0.060) in bruxers. The odds ratio revealed that a bruxer adolescent has 16 times greater probability for psychosocial disorders than a non-bruxer one.	There is an association between bruxism and psychosocial disorders.
Restrepo <i>et al</i> 2008	SB group: 26 Control group: 26 Case-control study Montessori School, Medellin, Colombia.	8-11	Children's Personality Questionnaire Conners' Parents Rating Scales	Anxiety level, personality traits.	Statistically significant difference between the control and bruxism group regarding tense personality (p=0.024 and anxiety (p=0.0007)	There is a possible etiological association between tense and high personality trait and bruxism.
Ferreira-Bacci <i>et al</i> 2012	SB group: 29 (18 boys/11 girls) seeking routine dental care and with episodes of tooth grinding/clenching No control group School of Dentistry, Sao Paulo, Brazil	7-11	Rutter's Child Behaviour Scale-A2 (Brazilian Version) Child Stress Scale	Stress	82.76% of the sample needed psychological or psychiatric intervention and 18.75% presented significant physical and psychological manifestations of stress	Behavioral problems and potential emotional problems can be risk factors to bruxism in children.
Turkoglu <i>et al</i> 2013	SB group: 35 (18 boys/17 girls) consecutively referred to 2 different hospitals, Turkey. Control Group: 35 (18 boys/17 girls) who were seen in an outpatient dental clinic for a routine oral inspection, not on basis of any specific dental complaint. Case-control study Turkey	8-17	Childhood Anxiety Sensitivity Index State-Trait Anxiety Inventory for Children Children Depression Inventory	State-trait anxiety, anxiety sensitivity, depressive symptom levels, and psychiatric disorders.	At least one psychiatric disorder was present in 42.9 % of the patient group and 17.1 % of the control group (p<0.05). Trait and state anxiety, anxiety sensitivity, and the severity of depression symptoms were also higher in the SB group (p<0.05). After the multivariate analysis, the associations between state and trait anxiety, depression, and SB became statistically insignificant, while the association with anxiety sensitivity persisted.	SB is related to anxiety sensitivity.