

SCHOOL BULLYING AND THE ROLE OF THE DENTIST: BRUXISM AND DENTAL FRACTURES AS CLINICAL AND PSYCHOLOGICAL MARKERS OF VICTIMIZATION

Paulo Vinicius de Oliveira Bastos¹

Érica Cristina dos Santos²

Elaine da Silva Matos³

Gabriella Dantas de Almeida⁴

Adrielen Henrique Picoli⁵

Danielle Santos Quindos⁶

ABSTRACT: Introduction: school bullying is a chronic psychosocial stressor associated with somatic manifestations in children and adolescents, among which bruxism and its dental complications have been increasingly documented in the dental literature. Objective: to narratively review the scientific evidence on the association between school bullying, sleep and awake bruxism, dental wear and fracture, and to discuss the role of the dentist in the early detection of bullying victimization. Methods: a narrative literature review was conducted in indexed databases (PubMed, SciELO, Wiley Online Library), prioritizing Brazilian and international observational studies published mainly in the Journal of Oral Rehabilitation and the International Journal of Paediatric Dentistry. Results: adolescents involved in verbal bullying episodes present up to six times greater odds of probable sleep bruxism, with reported prevalence of up to 65% in the victimized group versus 17% in the non-exposed group. Similar findings were described for awake bruxism in children aged 8 to 11 years. Pathological dental wear and fracture of restorations and dental structures are among the most frequently reported clinical consequences of bruxism, thus constituting indirect, objective indicators of exposure to this stressor. Conclusion: routine dental clinical examination, by identifying signs of bruxism and its sequelae, may serve as a complementary screening tool for school bullying, reinforcing the dentist's role as a health surveillance agent for children and adolescents within an intersectoral protection network.

Keywords: Bullying. Bruxism. Tooth injuries. Dentistry. School violence.

¹Specialist in Family Health(UFRJ) , Dentista (SMS - RJ), Universidade Federal do Rio de Janeiro (UFRJ).

²Specialist in Pediatric Dentistry, Faculdade Herrero - Curitiba - PR.

³Specialist in Orthodontics, Universidade Federal de Minas Gerais(UFMG).

⁴Graduated in Dentistry, Universidade Tiradentes.

⁵Specialist in sustainable Management and Innovation Public Health UNOPAR.

⁶Specialist in Orthodontics, Faculdade Unidas do Norte de Minas.

RESUMO: Introdução: o bullying escolar é um estressor psicossocial crônico associado a manifestações somáticas em crianças e adolescentes, entre as quais o bruxismo e suas complicações dentárias vêm sendo cada vez mais documentados na literatura odontológica. Objetivo: revisar de forma narrativa as evidências científicas sobre a associação entre bullying escolar, bruxismo do sono e de vigília, desgaste e fratura dentária, discutindo o papel do cirurgião-dentista na detecção precoce da vitimização por bullying. Metodologia: realizou-se revisão narrativa da literatura em bases indexadas (PubMed, SciELO, Wiley Online Library), priorizando estudos observacionais brasileiros e internacionais publicados principalmente no Journal of Oral Rehabilitation e no International Journal of Paediatric Dentistry. Resultados: adolescentes envolvidos em episódios de bullying verbal apresentam chance até seis vezes maior de bruxismo do sono provável, com prevalências relatadas de até 65% no grupo vitimizado, contra 17% no grupo não exposto. Achados semelhantes foram descritos para o bruxismo de vigília em crianças de 8 a 11 anos. O desgaste dentário patológico, a fratura de restaurações e de estruturas dentárias figuram entre as consequências clínicas mais relatadas do bruxismo, sendo, portanto, indicadores indiretos e objetivos de exposição a esse estressor. Conclusão: o exame clínico odontológico de rotina, ao identificar sinais de bruxismo e suas sequelas, pode funcionar como ferramenta complementar de rastreamento do bullying escolar, reforçando o papel do cirurgião-dentista como agente de vigilância em saúde da criança e do adolescente, dentro de uma rede intersetorial de proteção.

Palavras-chave: Bullying. Bruxismo. Traumatismos dentários. Odontologia. Violência escolar.

1 INTRODUCTION

School bullying is defined as a form of repeated and intentional aggression, marked by a power imbalance between aggressor and victim, which can take physical, verbal, relational, or virtual forms. It is estimated to constitute one of the most prevalent public health problems among school-age children and adolescents, with repercussions that extend beyond the immediate psychological sphere, being associated with depression, suicidal ideation, and an overall impairment in quality of life.

In parallel, bruxism — defined as a repetitive activity of the masticatory musculature characterized by grinding or clenching of the teeth, which may occur during sleep (sleep bruxism) or while awake (awake bruxism) — has a multifactorial etiology in which psychosocial factors such as stress, anxiety, and adverse life events play a central role, especially in children and adolescents.

Beyond its behavioral and social dimensions, school bullying has been robustly linked in the psychological and psychiatric literature to a broad spectrum of adverse mental and physical health outcomes. Longitudinal meta-analytic evidence indicates that peer victimization in childhood predicts internalizing symptoms such as anxiety and depression years later: Reijntjes et al. (2010) demonstrated a significant prospective association between

victimization and subsequent internalizing problems, while Ttofi et al. (2011) found that victims of school bullying are nearly twice as likely to become depressed later in life. A systematic review and meta-analysis by Moore et al. (2017), encompassing 165 studies, concluded that there is convincing evidence for a causal relationship between bullying victimization and a wide range of adverse outcomes, including depression, anxiety, poor general health, self-harm, and suicidal ideation, while Arseneault (2018) emphasized, in an annual research review, the persistent and pervasive impact of victimization on mental health well into adulthood. This psychological distress also has a well-documented somatic expression: meta-analyses by Gini and Pozzoli (2009, 2013) found that bullied children have more than twice the odds of psychosomatic complaints such as headache, abdominal pain, and sleep disturbances compared with non-victimized peers, and a subsequent meta-analysis focusing specifically on headache (GINI, et al., 2014) confirmed a significant and consistent association between peer victimization and this symptom. These findings converge with those of Wolke and Lereya (2015), who described long-lasting physical and mental health consequences of bullying extending into adult life. This body of psychological evidence provides the broader clinical rationale for examining bruxism — itself a psychosomatic manifestation of chronic stress — as a further, dentally observable expression of the same phenomenon, and underscores the relevance of an interprofessional approach linking dentistry and psychology in the recognition of bullying victimization.

In recent years, a consistent body of evidence, produced mainly by Brazilian research groups, has demonstrated a statistically significant association between exposure to verbal school bullying and the occurrence of probable bruxism, both sleep and awake. This association is clinically relevant because bruxism produces objective, observable signs on oral examination — dental wear atypical for age, fracture of cusps, restorations, and, in more severe cases, of dental elements — that can be detected by the dentist even before any spontaneous report by the child or adolescent about the violence they are experiencing.

Given this scenario, the present article aims to narratively review the available scientific evidence on the relationship between school bullying and bruxism, describe the main clinical dental consequences of this association — with an emphasis on dental wear and fracture — and discuss the role of the dentist in the early detection of bullying cases, also in light of the ethical and legal obligations regarding the reporting of violence against children and adolescents in Brazil.

2 METHODS

This is a narrative literature review conducted through searches in the PubMed, SciELO, and Wiley Online Library databases, using the descriptors “bullying,” “bruxism,” “sleep bruxism,” “awake bruxism,” “dental trauma,” “child abuse,” and “dentist role,” isolated and combined, in Portuguese, English, and Spanish. Observational studies (case-control and cross-sectional), systematic reviews, and review articles published in indexed journals were prioritized, with emphasis on the production of the research group at the Universidade Federal de Minas Gerais (UFMG), responsible for the main original studies on the subject. The synthesis was organized qualitatively and narratively, without the methodological exhaustiveness typical of systematic reviews.

3 DISCUSSÃO E RESULTADOS

3.1 School bullying as a psychosocial stressor in adolescence

School bullying is characterized by the repetition of aggressive behaviors, physical or psychological, practiced by one or more students against another, in a context of power imbalance and without apparent motivation, according to a definition widely adopted in the international literature. Brazilian studies indicate a significant prevalence of involvement in episodes of verbal bullying among adolescents, whether as victims, aggressors, or in a mixed role (victim-aggressor), with males being more frequently involved in these episodes.

The impact of bullying is not restricted to the immediate emotional sphere: chronic exposure to this type of stressor is associated with lower life satisfaction scores, especially in domains related to self, school, and self-efficacy, as well as lower scores in the non-violence domain, according to validated quality-of-life instruments for adolescents. This picture of chronic psychosocial stress constitutes the proposed pathophysiological substrate to explain the increased masticatory parafunctional activity observed in this population, and is consistent with the broader psychological literature showing that peer victimization is prospectively associated with internalizing symptoms and impaired psychosocial adjustment (REIJNTJES, et al., 2010; MOORE, et al., 2017).

3.2 Sleep bruxism and verbal bullying

The reference study on the subject, conducted by Serra-Negra et al., evaluated 103 adolescents aged 13 to 15 years with probable sleep bruxism (self-reported or reported by parents) and 206 adolescents without this condition, in the city of Itabira (Minas Gerais). The results showed that adolescents with probable sleep bruxism had six times greater odds of being involved in episodes of verbal school bullying, as victim, aggressor, or both (odds ratio = 6.20; 95% confidence interval: 3.67–10.48), regardless of economic class.

Reports in the specialized press that disseminated this study highlighted that adolescents aged 13 to 15 exposed to verbal intimidation at school had a prevalence of probable sleep bruxism of 65%, compared to 17% among those not exposed — a figure consistent with the magnitude of association reported in the original article.

In a complementary study by the same group, Fulgêncio et al. demonstrated that the diagnosis of sleep bruxism can assist in the detection of cases of verbal school bullying, while also allowing the measurement of adolescents' life satisfaction, reinforcing the value of the clinical finding as a screening tool, and not merely as an isolated consequence of stress.

3.3 Awake bruxism and bullying

Alonso et al. extended this investigation to awake bruxism in children and adolescents aged 8 to 11 years, showing an association between diurnal parafunction and involvement in bullying, with structural equation modeling indicating that verbal bullying is influenced, among other variables, by the presence of pronounced overbite and untreated dental caries — suggesting a feedback pathway in which the unfavorable oral condition itself may become a target of stigmatization and victimization among peers.

A more recent cross-sectional study, conducted by Bolsson, Knorst, Menegazzo, and Ardenghi, corroborated the association between bullying related to dental characteristics (“dental bullying”) and the occurrence of both awake and sleep bruxism, associated with poorer sleep quality in school-age adolescents, reinforcing the robustness and reproducibility of the finding across different Brazilian samples and contexts.

3.4 Clinical consequences: dental wear and fracture

Bruxism, regardless of its etiology, produces repetitive biomechanical overload on teeth, restorations, periodontal tissue, and the temporomandibular joint. Among the clinical signs most frequently described in the literature are incisal and occlusal wear incompatible with the

patient's age, dental hypersensitivity and mobility, fracture of cusps and restorations, and, in more severe cases, fracture of dental elements and loss of periodontal support.

These findings are particularly relevant from a clinical screening standpoint because they constitute objective signs, verifiable on routine oral examination, and do not depend exclusively on the patient's report — which is especially important in children and adolescents who, out of fear, shame, or lack of awareness, often do not spontaneously report the bullying situation they are experiencing. Fracture of restorations and dental structures without a history compatible with acute trauma, associated with other signs of bruxism (masseter hypertrophy, pain on muscle palpation, morning headache reported by parents/guardians), should therefore alert the dentist to actively investigate underlying psychosocial factors, among which school bullying is a hypothesis to be considered.

3.5 The dental office as a privileged space for observation

The oral cavity and orofacial region concentrate a large part of the clinical manifestations of violence against children and adolescents, with the face, head, and neck accounting for a significant proportion of the physical signs of maltreatment identified by health professionals. In addition, dental visits often occur at regular intervals and in a relatively private setting, which gives the dentist a privileged — and, in many cases, unique — position to observe behavioral changes and subtle clinical signs over time.

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3.6 Clinical and behavioral warning signs

Among the signs that should raise clinical suspicion of school bullying are: pathological dental wear or fracture of restorations without a history of acute trauma; reports by parents/guardians of nocturnal tooth grinding, morning headache, or pain on mouth opening; hypertrophy or pain on palpation of the masticatory musculature; behavioral changes reported by parents/guardians (withdrawal, refusal to attend school, decline in school performance); and, when associated, signs of low self-esteem or dissatisfaction with one's own body or dental image, especially in patients with visible malocclusions, who may be a preferential target of stigmatization among peers.

3.7 Approach, welcoming care, and referral

When suspicion arises, it is recommended that the dentist adopt a welcoming approach, avoiding direct and leading questions that might embarrass the child or adolescent, prioritizing open-ended questions included in the routine history-taking about sleep, stress, and school relationships. Confirmed or well-founded suspicion of bullying, especially when associated with signs of significant psychological distress, should prompt referral for specialized psychological evaluation, in coordination with the school and, when applicable, with the child and adolescent protection network, within a logic of interprofessional and intersectoral care.

3.8 Ethical and legal aspects

In Brazil, the Child and Adolescent Statute (Law No. 8,069/1990) establishes the duty of every citizen, including health professionals, to safeguard the dignity and integrity of children and adolescents, reporting to the competent authorities situations of violence or neglect of which they become aware. The Federal Dentistry Council reinforces, through its resolutions, the ethical responsibility of the dentist in identifying and reporting suspected cases of maltreatment, including school bullying when it constitutes repeated psychological violence. However, the national literature highlights that gaps in academic training on the subject still limit the ability of many professionals to recognize and report such cases, reinforcing the need for more systematic incorporation of this content into dentistry curricula.

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4 FINAL CONSIDERATIONS

Available evidence, although concentrated in a still limited number of research groups, consistently points to a relevant association between school bullying — especially in its verbal form — and the occurrence of sleep and awake bruxism in children and adolescents, with objective clinical consequences such as atypical dental wear and fracture of restorations and dental structures. This clinical picture unfolds against a much broader backdrop documented by the psychological and psychiatric literature, in which bullying victimization is causally linked to depression, anxiety, psychosomatic complaints, and impaired long-term mental health (GINI; POZZOLI, 2013; MOORE, et al., 2017; ARSENEAULT, 2018). This body of findings positions the dentist as a potential health surveillance agent, capable of identifying, during routine clinical examination, indirect signs of bullying victimization that may not be spontaneously reported by the child or adolescent, and reinforces the value of an

interprofessional dialogue between dentistry and psychology in the early recognition of this phenomenon.

It is recommended that pediatric dental history-taking protocols systematically incorporate questions related to sleep, stress, and school life, and that undergraduate dentistry courses expand training for their graduates regarding the recognition of signs of psychological violence and the ethical-legal pathway for referral and reporting, strengthening the role of the dentist within the intersectoral network for the protection of children and adolescents.

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