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STAB—A response to the commentary “Questions on the clinical applicability on the international consensus on the assessment of bruxism” by Skarmeta and Hormazabal Navarrete

Jari Ahlberg¹ | Daniele Manfredini² | Frank Lobbezoo³

¹Department of Oral and Maxillofacial Diseases, University of Helsinki, Helsinki, Finland

²Department of Biomedical Technologies, School of Dentistry, University of Siena, Siena, Italy

³Department of Orofacial pain and Dysfunction, Academic Centre for Dentistry Amsterdam (ACTA), University of Amsterdam and Vrije Universiteit Amsterdam, Amsterdam, The Netherlands

Correspondence: Jari Ahlberg, Department of Oral and Maxillofacial Diseases, University of Helsinki, Helsinki, Finland.
Email: jari.ahlberg@helsinki.fi

The recently published commentary by Skarmeta and Hormazabal Navarrete¹ questions the clinical applicability of the consensus paper by Lobbezoo and colleagues.² Interestingly, the authors seem to refer to the 2013 consensus as they do not cite its 2018 update.³

Whilst noting that our recent consensus paper² has evoked great interest among bruxism professionals, it appears that the points raised by the authors of the commentary reflect limited insight into the scope of the paper and the background scenario leading to its preparation. The basic premise of our response is that the consensus defines bruxism without any reference to aetiology or consequence. Namely, it aims to be “straightforward, respectful towards its circadian characteristics, unbiased with purported underlying etiological mechanisms, and stripped of possible associations and co-morbidities.” In accordance with that, even the proposed grading (viz., possible, probable, definite) was done merely to better label research results according to the method used, bearing in mind that a single method cannot be feasible for all studies, nor better suited than another method for all clinical or research purposes. The consensus sums up the clinical and research experiences and discussions of recognised dental and medical experts over recent decades. We agree that it is inevitably a compromise with respect to each individual's “ideal” thinking and, even more important, a “work in progress.” As the authors of the updated consensus paper, we did in fact clarify this in the title.³ Any external observer's criticism should take these

premises into account, which was not the case in the commentary by Skarmeta and Hormazabal Navarrete.

According to the 2013 definition,² which the authors cite only at the end of their commentary,¹ “Bruxism is a repetitive jaw-muscle activity characterized by clenching or grinding of the teeth and/or by bracing or thrusting the mandible. Bruxism has two distinct circadian manifestations: it can occur during sleep (indicated as sleep bruxism, SB) or during wakefulness (indicated as awake bruxism, AB).” But why do the authors totally ignore the updated definitions published by the expert group in 2018?³ In that update, it was emphasised that both SB and AB definitions begin with “masticatory muscle activity,” a phrase intended to highlight the role of the masticatory muscles during sleep and wakefulness. The issue of masticatory muscle activity (MMA) that may differ in nature, recognise different aetiology, and be the source of potential positive or negative consequences, has also been addressed in another highly cited paper co-authored by some of the experts panels.⁴ Within these premises, the commentary by Skarmeta and Hormazabal Navarrete¹ lists four points of criticism, which are answered below.

1 | SLEEP BRUXISM DEFINITION STATUS

The authors of the commentary report that, according to the expert group, bruxism behaviours may or may not be harmful, and then

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interpret this to mean that “when sleep bruxism meets a certain degree of frequency or intensity, individuals are more prone to develop unfavorable oral health consequences.”¹

This implication is no more than the commentary authors' own interpretation, since the consensus does not suggest any notion of when sleep bruxism meets a degree of frequency or intensity that leads to unwanted oral health conditions. At present, it is simply not possible to determine a clear-cut link between bruxism activity and any consequence. We made this issue quite clear in the consensus paper as well as in several other publications, including the discussion of bruxism management strategies.^{4,5} In particular, another recent paper included the suggestion that when evaluating possible negative outcomes of MMA it would be important to take a look at muscle work, which may be more or less constantly present with a changing pattern, rather than muscle force itself or the number of SB events.⁴ It is further noted that SB, defined as rhythmic masticatory muscle activity (RMMA) for over two decades, is just one piece in the bruxism behaviour puzzle. It should also be mentioned that RMMA diagnosed by polysomnography has been shown to have very little to do with muscle pain in the orofacial area.^{6,7}

In short, the aims of the two consensus papers were to shift the literature focus away from a limited view of bruxism as something that may occur only during sleep in association with arousals, and to avoid any preconceived ideas when proposing a definition.

2 | IN OTHERWISE HEALTHY INDIVIDUALS HEALTH CUT: SECONDARY SLEEP BRUXISM?

The authors of the commentary hypothesise that the specification of SB “in otherwise healthy individuals” was “most likely coined based on the assumption that sleep bruxism may be secondary to other health disorders.” Again, we note that that the consensus endeavours to depict the whole spectrum of bruxism activities as a behaviour. The 2013 definition does not apply to “otherwise healthy individuals”—this appears only in the 2018 report.³ However, we consider that bruxism is not a parafunction or disorder, as proposed in the earlier specifications by Raphael et al⁸ and Manfredini et al⁹. So, the authors' speculation that SB may be initiated by other disorders, implying that SB itself is a disorder (ie a pathological condition), is incorrect. There are other constructs similar to bruxism that may initiate MMA, not to mention the amount of prolonged, tonic SB or AB activity that is associated with the psychological state of an individual. Thus, SB is no longer considered to be generated by sleep arousals only. The association between sleep-disordered breathing and RMMA is just an example of a topic that must be addressed in future research.

In short, whilst the bruxism definition does not recognise secondary bruxism, the consensus paper lists a series of exogenous/external (permanent or transient) risk or trigger factors.³

The authors also speculate that “If the pathogenesis of SB is multifactorial, could the genesis between episodes be variable as well?”.

The answer is a simple: why not? And what does this have to do with the aims of the consensus paper? Regarding the request for a more clinical and pragmatic approach to define bruxism behaviours, we suggest consulting the recently published paper on the Standardized Tool for the Assessment of Bruxism (STAB).¹⁰ In addition, it was concluded already in 2013 that the definition and grading system could become widely adopted by researchers as well as clinicians. Further development of the definition was also called for.

3 | IS AWAKE BRUXISM NOT A DISORDER?

The only point where the authors speculate about awake bruxism is the question “Where is the limit to clinically discriminate if the motor activity presented by the patient corresponds to a movement disorder?” According to our definitions, the clear-cut answer is that there is no clinical instrument at present to allow any such limit. And, again, this was clearly not a target for the consensus paper.

As indicated earlier, there is an ambitious road map under construction to resolve the issue: the Standardized Tool for the Assessment of Bruxism (STAB).¹⁰

4 | THE GRADING SYSTEM

The final concern raised by the authors is the possible absence of clinical applicability of the diagnostic grading system. Any speculation about the lack of a clinical test goes far beyond the concept of proposing a grading system, which by definition was just a suggestion. The consensus paper describes the methods that have been used and may be used to assess bruxism. Further developments of this concept have led to the above-cited STAB, which underlines the need to favour the term “assessment” over a more pathology-oriented “diagnosis”.¹⁰

5 | CONCLUSION

The authors of the commentary conclude with: “We are not entirely sure, and although we acknowledge that this is a work in progress, we may well be more confused than before.” Whilst the authors are encouraged to make their own contributions to ongoing bruxism clinical research, we note that it is better to be confused for the right reasons than to act on the basis of impaired assumptions.

CONFLICT OF INTEREST

None.

ORCID

Jari Ahlberg  <https://orcid.org/0000-0002-6052-0441>

Daniele Manfredini  <https://orcid.org/0000-0002-4352-3085>

Frank Lobbezoo  <https://orcid.org/0000-0001-9877-7640>

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