

# A Commentary on “Association Between Oral Behaviors and Painful Temporomandibular Disorders: A Cross-Sectional Study in the General Population” [Letter]

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## Dear editor

We have carefully reviewed the article titled “Association Between Oral Behaviors and Painful Temporomandibular Disorders: A Cross-Sectional Study in the General Population” by Sun et al.<sup>1</sup> This research explores the link between oral behaviors and painful temporomandibular disorders (PT), revealing significant correlations that could inform treatment strategies for PT. While we appreciate the insights provided, we would like to offer suggestions for further consideration.

Firstly, the reliability of self-reported data may impact the study's accuracy. The research relies on self-reported oral behaviors, which could introduce bias due to variations in participants' self-awareness and memory accuracy. For instance, it is challenging for patients to ascertain whether they grind their teeth while asleep. Additionally, the study lacks objective measurements, such as electromyography, to validate self-reported data, potentially affecting the reliability of the correlation between oral behaviors and PT.

Secondly, the study has limitations in inferring causality. As a cross-sectional study, it cannot establish a causal relationship between oral behaviors and PT, as the temporal sequence between the behaviors and the onset of PT is not considered, which is crucial for understanding causal mechanisms. For example, it may be that PT occurs first, leading to conditions such as bruxism and sleep position pressure on the jaw. The possibility of reverse causality and bidirectional causality still exists within this context, and these potential causal relationships require further investigation through additional research.

Thirdly, there is a possibility of unaccounted confounders in this study. Despite the control of demographic factors, additional unmeasured confounders such as genetic predispositions, psychological factors, or occupational habits not analyzed could influence the relationship between oral behaviors and PT, potentially biasing the study's accuracy.

Lastly, the pain assessment method requires further consideration and improvement. The pain is a complex, multi-dimensional experience that encompasses sensory, emotional, and cognitive aspects. Consequently, a single pain assessment tool may not be sufficient to fully evaluate the pain experience. The study uses the 5 major TMD symptoms (5Ts) checklist to identify temporomandibular disorders (TMDs), which, though sensitive, may not capture the full spectrum of TMD symptoms. In addition, variations in the perception and expression of pain among individuals can lead to biases in research outcomes. Relying on self-reported pain could introduce subjectivity, affecting the accuracy of the prevalence and severity of PT.

In conclusion, while Sun et al's research provides valuable insights into the association between oral behaviors and PT, caution is needed when interpreting the results due to the mentioned issues. We recommend that future studies address these limitations by incorporating objective physiological measurements like electromyography<sup>2</sup> to enhance the objectivity of data collection, conducting prospective studies or randomized controlled trials to explore the causal relationship between oral behaviors and TMD,<sup>3</sup> and employing multimodal pain assessment methods to improve pain evaluation.<sup>4</sup> These measures could enhance the reliability and generalizability of research findings.

## Disclosure

The authors report no conflicts of interest in this communication.

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