

Smartphone-based evaluation of awake bruxism behaviours in a sample of healthy young adults: findings from two University centres

[Alessandra Zani](#)¹, [Frank Lobbezoo](#)², [Alessandro Bracci](#)¹, [Goran Djukic](#)³, [Luca Guardanardini](#)⁴, [Riccardo Favero](#)¹, [Marco Ferrari](#)⁵, [Ghizlane Aarab](#)², [Daniele Manfredini](#)⁵

Abstract

A smartphone-based ecological momentary assessment (EMA) strategy was used to assess the frequency of awake bruxism behaviours, based on the report of five oral conditions (ie relaxed jaw muscles, teeth contact, mandible bracing, teeth clenching and teeth grinding). One hundred and fifty-three (N = 153) healthy young adults (mean \pm SD age = 22.9 \pm 3.2 years), recruited in two different Italian Universities, used a dedicated smartphone application that sent 20 alerts/day at random times for seven days. Upon alert receipt, the subjects had to report in real-time one of the above five possible oral conditions. Individual data were used to calculate an average frequency of the study population for each day. For each condition, a coefficient of variation (CV) of frequency data was calculated as the ratio between SD and mean values over the seven recording days. Average frequency of the different behaviours over the seven days was as follows: relaxed jaw muscle, 76.4%; teeth contact, 13.6%; mandible bracing, 7.0%; teeth clenching, 2.5%; and teeth grinding, 0.5%. No significant differences were found in frequency data between the two University samples. The relaxed jaw muscles condition was more frequent in males (80.7 \pm 17.7) than in females (73.4 \pm 22.2). The frequency of relaxed jaw muscles condition over the period of observation had a very low coefficient of variation (0.27), while for the different awake bruxism behaviours, CV was in a range between 1.5 (teeth contact) and 4.3 (teeth grinding). Teeth contact was the most prevalent behaviour (57.5-69.7). Findings from this investigation suggest that the average frequency of AB behaviours over one week, investigated using EMA-approach, is around 23.6%.

Keywords: awake bruxism; bruxism; ecological momentary assessment; prevalence; smartphone.

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Conflict of interest statement

Authors D.M. and A.B. took part as non-paid advisors to the development of the BruxApp software. Other Authors do not have conflict of interests concerning this investigation.

Data subject to third party restrictions.

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