

Bruxism: Causes And Complications Among The Saudi Population, A Cross-Sectional Study

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Abstract

Background: Bruxism is a parafunctional activity characterized by involuntary clenching or grinding of teeth during wakefulness or sleep. It is frequently underdiagnosed despite its significant dental and psychosocial consequences.

Objectives: To assess the prevalence of bruxism among Saudi adults and identify associated risk factors and complications.

Methods: A cross-sectional study was conducted among 430 Saudi adults using a structured questionnaire incorporating demographic variables, lifestyle factors, Perceived Stress Scale (PSS), Pittsburgh Sleep Quality Index (PSQI), bruxism symptoms, and complications.

Results: Bruxism prevalence was 27.4%. Female gender, high stress levels, poor sleep quality, caffeine consumption, and smoking were significantly associated with bruxism. Tooth wear (61.9%) and headache (48.3%) were the most common complications.

Conclusion: Bruxism is prevalent among Saudi adults and closely linked to psychosocial and lifestyle factors, highlighting the importance of early screening and multidisciplinary care.

Keywords: Bruxism, Saudi Arabia, Stress, Sleep Disorders, Tooth Wear

Introduction

Bruxism involves involuntary clenching or grinding of teeth during sleep or wakefulness and has a multifactorial etiology. Psychological stress, sleep disturbances, and lifestyle habits are recognized contributors. In Saudi Arabia, rapid urbanization and occupational stress may increase bruxism prevalence. However, local data remain scarce. This study aims to evaluate the prevalence, causes, and complications of bruxism among Saudi adults.

Methods

Study Design: Cross-sectional quantitative study.

Population: Saudi adults aged ≥ 18 years.

Sample Size: 430 participants.

Tool: Structured questionnaire including PSS and PSQI.

Analysis: SPSS v25, descriptive and inferential statistics (Chi-square, logistic regression).

Results

Among the 430 participants, 56.3% were females and 43.7% males, with a mean age of 32.8 ± 9.4 years. Self-reported bruxism prevalence was 27.4% ($n=118$). Females reported higher bruxism prevalence than males (31.8% vs 21.8%, $p=0.01$).

Table 1. Demographic characteristics of participants (n=430)

Variable	Frequency	Percentage
Male	188	43.7%
Female	242	56.3%
Age 18–30	176	40.9%
Age 31–45	167	38.8%
Age >45	87	20.3%

Table 2. Association between gender and bruxism

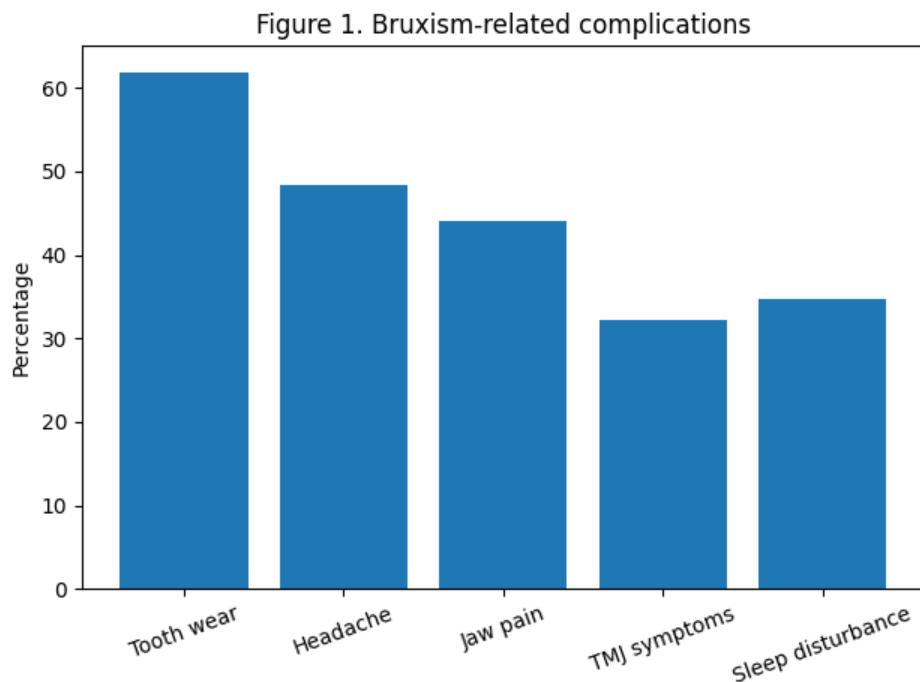
Gender	Bruxism n (%)	OR	p-value
Male	41 (21.8%)	1.0	—
Female	77 (31.8%)	1.7	0.01

Table 3. Risk factors associated with bruxism

Risk factor	Bruxism (%)	OR	p-value
High stress	48.3%	2.3	<0.001
Poor sleep quality	41.5%	1.9	0.002
Caffeine intake	37.2%	1.6	0.01
Smoking	33.1%	1.4	0.03

Table 4. Complications among participants with bruxism (n=118)

Complication	Frequency	Percentage
Tooth wear	73	61.9%
Headache	57	48.3%
Jaw pain	52	44.1%
TMJ symptoms	38	32.2%
Sleep disturbance	41	34.7%



Discussion

This study demonstrates that more than one-quarter of Saudi adults experience bruxism, which aligns with previously reported regional and international prevalence rates. The higher prevalence observed among females may be attributed to greater psychological stress exposure and sleep disturbances. Stress emerged as the most significant predictor, supporting the hypothesis that bruxism is predominantly centrally mediated. The association between caffeine consumption, smoking, and bruxism may be explained by their stimulatory effects on the central nervous system and sleep architecture. The high frequency of dental and musculoskeletal complications underscores the clinical burden of untreated bruxism and the need for early intervention.

Conclusion

Bruxism is a prevalent condition among Saudi adults, strongly associated with stress, sleep quality, and lifestyle habits. Preventive screening, public awareness, and multidisciplinary management strategies are recommended.

References

1. Lobbezoo F, et al. J Oral Rehabil. 2019;46:709–13.
2. Manfredini D, et al. J Oral Rehabil. 2020;47:728–36.
3. Melo G, et al. J Clin Med. 2022;11:185.
4. Tamimi D, et al. Int J Environ Res Public Health. 2022;19:7403.

5. AlOtaibi H, et al. *J Contemp Dent Pract.* 2020;21:667–72.
6. Basyuni S, et al. *Int J Dent.* 2022;2022:9541284.
7. Salameh A, et al. *J Dent Sleep Med.* 2023;10:1–7.
8. Wieckiewicz M, et al. *Brain Sci.* 2023;13:268.