

Obstructive Sleep Apnea and Risk for Adverse Dental Outcomes: A Real-World, Multicenter Cohort Study Using the U.S. TriNetX Network

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Objective

This study aimed to evaluate whether OSA independently increases the risk of adverse dental outcomes using a large-scale real-world dataset.

Methods

We conducted a retrospective cohort study using de-identified health records from the U.S. TriNetX network. Adults with polysomnography-confirmed OSA (ICD-10-CM G47.33) were compared with 1:1 propensity score-matched controls without OSA, excluding those with prior dental diseases or malignancies. The primary outcome was new-onset dental disorders within 365 days of index date. Cox proportional hazards models estimated adjusted hazard ratios (HRs) with 95% confidence intervals (CIs).

Results

A total of 164,974 matched pairs were included. During the one-year follow-up, patients with OSA exhibited a higher risk of adverse dental outcomes compared to controls (adjusted HR=1.82, 95%CI: 1.73–1.92, $p<0.001$). The association remained consistent across subgroups, with elevated risks observed in females (HR=2.04), older adults (≥ 65 years, HR=2.14), and patients with type 2 diabetes (HR=1.91). Sensitivity analyses at 3, 6, and 24 months confirmed the robustness of these findings.

Conclusion

After adjustment for measured covariates, OSA was associated with a higher hazard of all-cause dental disease in a real-world cohort. These findings support incorporating oral health assessment into comprehensive OSA management and highlight the potential value of interdisciplinary sleep and dental care.

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