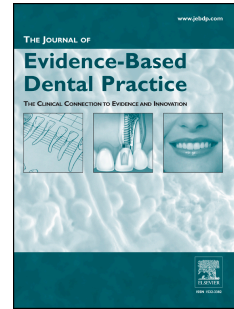


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The association between periodontitis and sleep duration

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Abstract

Aim: Due to its potential to influence systemic inflammation and oxidative stress, and to predispose to bacterial infections, sleep duration could potentially be a risk factor for periodontitis. The aim of this cross-sectional study was to evaluate if there was in 2012 an association between periodontitis and sleep duration in a representative sample of the South Korean population.

Materials and Methods: A total of 5812 subjects representative of 39.4 million of adults were examined. Multivariate logistic regressions were applied controlling for age, gender, education, smoking status, alcoholism and consumption frequency of coffee, tea, chocolate and red wine.

Results: Compared to the group sleeping ≤ 5 h/day, the adjusted odds ratios for periodontitis prevalence defined as Community Periodontal Index (CPI) = 4 were OR = 2.46 (95% CI: 1.20–5.06) in the 6 h/day sleepers group, OR = 2.66 (95% CI: 1.35–5.25) in the 7 h/day sleepers group, OR = 2.29 (95% CI: 1.13–4.63) in the 8 h/day sleepers group and OR = 4.27 (95% CI: 1.83–9.97) in the ≥ 9 h/day sleepers group. The association has shown to be highlighted in middle-aged people, females, non-smokers, lower educated, with lower lead and higher cadmium blood levels and with higher carotene dietary intake ones and to be partially mediated by lipid profile alterations, diabetes, serum Vitamin D levels and WBC count.

Conclusions: A novel, direct and independent association between sleep duration and the prevalence of periodontitis was found. However, it needs to be investigated how the factors influencing the sleep duration affect this association.

Key words: association; epidemiology; inflammation; Korea National Health And Nutrition Examination Survey (KNHANES); oxidative stress; periodontal diseases; periodontitis; risk factors; sleep

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Short sleep duration has been independently linked to several diseases, particularly to diabetes mellitus, metabolic syndrome, hypertension, stroke and coronary artery disease (Qureshi et al. 1997, Gottlieb et al. 2006, Yaggi et al. 2006, King et al. 2008, Kanagasabai & Ardern 2015, Kim et al. 2015). Although several mechanisms have been implicated,

both the increased systemic inflammatory status and oxidative stress were found to lie on the causal pathway between the short sleep duration and the relationship with these pathologies, particularly with cardiovascular diseases (Patel et al. 2009, Kanagasabai & Ardern 2015, DeMartino et al. 2016). Recently, also the association between short

sleep duration with the risk of systemic infections has been highlighted, explained by the experimental evidence of host immunity impairment (Irwin et al. 1996, Bolinger et al. 2009, Patel et al. 2012).

On the other side, epidemiological research has also highlighted how prolonged sleep duration is considerably associated with morbidity

Conflict of Interest and Sources of Funding Statement

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