

Associations of Self-Reported Sleep Duration and Sleep Quality with Metabolic Syndrome in a Taiwanese Health Check-Up Cohort

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Objective: Short sleep is associated with metabolic syndrome (MetS), but the contribution of self-reported sleep quality alongside duration remains unclear. We examined their associations with prevalent and incident MetS in a Taiwanese health check-up cohort. **Methods:** We analysed each participant's first health check-up in the MJ Health Database during 2009–2023 (n = 124,530). Sleep duration comprised six ordinal categories; quality items covered sleep initiation, hypnotic use, night waking, dreaming and sound sleep. Logistic and Cox models adjusted for age, sex, sociodemographic and lifestyle factors, and questionnaire version. Body size was excluded from primary models and included in sensitivity analyses. **Results:** Short sleep was associated with prevalent MetS (odds ratio [OR] 1.107, 95% confidence interval [CI] 1.061–1.156; n = 92,472) and incident MetS among return attendees (hazard ratio 1.139, 95% CI 1.059–1.226). Estimates remained similar after adjustment for sleep quality (1.119) or diet (1.061–1.141), and after excluding hypnotic users (1.145). Duration associations did not differ across questionnaire versions (p = 0.28). Reporting any sleep disturbance was inversely associated with MetS (OR 0.876, 95% CI 0.842–0.910), but respondents reporting disturbance had body mass index 0.6–0.8 kg/m² lower. The association disappeared after body mass index adjustment (OR 1.020, p = 0.39). Reporting sound sleep was associated with higher MetS odds (OR 1.098, 95% CI 1.055–1.142). Quality estimates varied across questionnaire versions (p < 0.001). **Conclusion:** Short sleep showed a small, consistent association with MetS that was not explained by reported sleep quality, diet or hypnotic use. The inverse association with reported sleep disturbance was accounted for by body mass index, while quality associations varied with questionnaire version. These findings underscore the importance of distinguishing sleep duration from perceived quality when interpreting metabolic associations. Observational data establish neither causation nor clinical utility.

中文題目：自陳睡眠時數及睡眠品質與代謝症候群的關聯：美兆健康資料庫分析

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