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SLEEP DURATION AND MORTALITY IN THE ELDERLY: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Increasing evidence suggests an association between both short and long duration of habitual sleep with adverse health outcomes. Although sleep problems are prevalent among the elderly, the association between sleep duration and mortality in this population is scarcely described to date.

Objective: To summarize the evidence from population-based longitudinal data about the association between either short or long sleep duration and mortality in elderly individuals.

Methods: Cohort studies published between 1980 and 2011, without language restriction, were independently identified by two reviewers, in PubMed, Embase, LILACS, and IBECs electronic databases. Unpublished studies were identified in the Brazilian electronic database of PhD theses and Master's dissertations (CAPES). Eligible studies met all the following criteria: (a) participants: age greater or equal 60 years; (b) exposures: assessment of sleep duration as 24-hour, nighttime and daytime sleep; (c) outcomes: evaluation of all-cause and cause-specific mortality; (d) design: population-based cohort studies, conducted on representative samples. Data were extracted serially in a standardized manner and analyzed using random effect models in the second version of the Comprehensive Meta-Analysis™ software. Heterogeneity and consistency were evaluated through Cochran's Q and the I² statistics, respectively. We also conducted sensitivity analyses and assessed publication bias.

Results: Overall, 17 cohort studies were selected, comprising 44,522 elderly individuals, followed-up for 5 to 35 years. Sleep duration was assessed by questionnaire and outcomes through death certificate. In a pooled analysis, long sleep duration was associated with increased all-cause mortality (RR: 1.36; 95%CI 1.21-1.52), compared to the reference category (seven hours in most of the studies), with moderate heterogeneity among studies (I² = 67.6%). Short sleep duration and daytime sleep duration greater or equal two hours were not associated with all-cause mortality (RR: 1.07; 95%CI 0.99-1.14 and RR: 1.34; 95%CI 0.95-1.90, respectively). For cardiovascular mortality, the pooled RRs were 1.25 (95%CI 0.73-2.16) for short sleep, and 1.33 (95%CI 0.95-1.79) for long sleep.

Conclusions: Long sleep duration is a predictor of mortality in elderly individuals, but short and daytime sleep duration were not.