Association between sleep quality and non-communicable disease in Mexico: a national representative cross-sectional study

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Introduction:
The decreased sleep quality has become a global health problem. Mexican population has reported the highest prevalence of overweight and obesity (75.2%), hypertension (47.8%) and diabetes (18.3%) in his history. Therefore, this study aims to evaluate the association between sleep quality and overweight, obesity, hypertension, and diabetes in a national representative survey.

Methods:
We use data from a national representative survey (ENSANUT 2016) to perform a cross-sectional study, with a sample of 8,649 adults and a representativeness of 71.1 million. Sleep quality was assessed by asking the hours of sleep, perception of the sleep quality, difficulties initiating or maintaining sleep, and early-morning awakening and the Berlin survey, stratifying in three categories. We used glycosylated hemoglobin, glycemia, insulin, blood pressure, weight, and height measurements. HOMA index and BMI were calculated. Diagnosis of diabetes, hypertension and obesity were obtained using international criteria. Biochemical and anthropometric measurements were compared and associated with sleep quality and Berlin survey.

Results:
Mean hours of sleep were 7.5, percentage of people sleeping less than recommended was 23.98%, and 37.35% with difficulties to initiate or maintain sleep. In Berlin survey, Category 1 was 30.74%, second 20.95%, and third 16.93%. Comparing the mean of people without positive categories (n=3,014) versus people with three positive categories (n=471) in Berlin survey, higher glycemia (108.2 vs 114.4), HBA1C (5.6 vs 5.9), insulin (11.4 vs 16.3), HOMA index (2.2 vs 4.7), systolic blood pressure (116 vs 126) diastolic blood pressure (70 vs 76), BMI (25 vs 34), and waist circumference (87 vs 106) were observed.

Conclusions:
People who have worse sleep quality tend to have higher levels of BMI, blood pressure, glycemia, insulin, glycosylated hemoglobin values than those with better sleep quality.

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