

## ORIGINAL RESEARCH

## 07. Sleep Quality in First- to Third-Year Medical Students at Universidad de San Carlos de Guatemala: Prevalence and Associations with Daytime Sleepiness and Perceived Stress

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▶ <https://www.youtube.com/watch?v=hJlcIJ1w8oM&list=PLhqNq3xJClbafO0Y5bvBcgMmXpgzJxd44&index=5&t=10563s>

**Background:** Sleep quality is fundamental for learning, emotional regulation, and long-term health. Medical students often face heavy workloads and irregular schedules that can disrupt sleep and increase stress and daytime sleepiness. Based on our literature search, we found no previous reports examining sleep quality and its associations with daytime sleepiness and perceived stress among Guatemalan medical students; therefore, this study represents an initial contribution to this field. Establishing the magnitude of sleep problems in this context is essential to guide student well-being initiatives and institutional policies.

**Aim:** To determine the prevalence of poor sleep quality among first- to third-year medical students at the Universidad de San Carlos de Guatemala and to evaluate its association with daytime sleepiness and perceived stress.

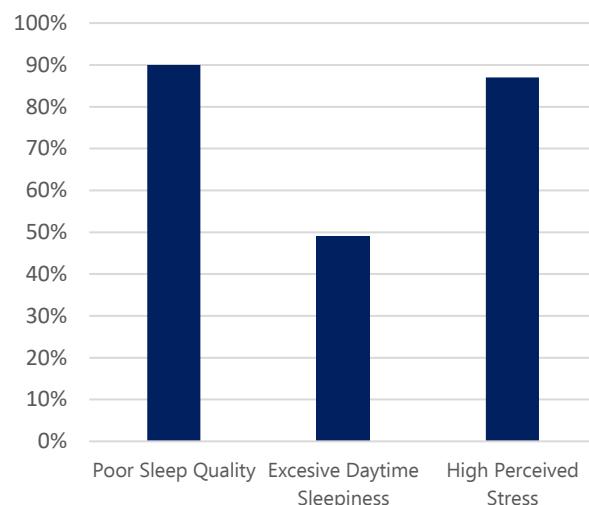
**Methods:** We conducted a cross-sectional survey of first- to third-year medical students at the Universidad de San Carlos de Guatemala during June-July 2024. Participants filled out an online questionnaire that included the Pittsburgh Sleep Quality Index (PSQI), Epworth Sleepiness Scale (ESS), and the Spanish Perceived Stress Scale (EPS). Poor sleep was defined as PSQI > 5. Demographic data included sex, age, and academic year. Categorical variables were compared with chi-square tests, and associations among PSQI, ESS, and EPS scores were assessed with Spearman correlations. Analyses were performed in R with  $\alpha = 0.05$ .

**Results:** A total of 100 students participated (mean age  $21.7 \pm 1.6$  years; 61% women), who reported an average nightly sleep duration of  $4.9 \pm 1.05$  hours (mode = 5 hours) over the previous month. The mean PSQI score was  $9.2 \pm 2.8$ , with 90.0% (95% CI 83.5–94.6) classified as having poor sleep quality (PSQI > 5). Excessive daytime sleepiness (ESS  $\geq 10$ ) was found in 49% of students (mean ESS  $8.8 \pm 3.6$ ). High perceived stress was present in 87% of participants, with a mean score  $32.1 \pm 6.8$  which corresponds to the high-stress category (27–40) on the 0–56 PSS/EPS scale. Poor sleep was not significantly associated with sex ( $\chi^2 = 0.17$ ,  $p = 0.68$ ) or academic year ( $\chi^2 = 3.33$ ,  $p = 0.19$ ). PSQI scores correlated positively with daytime sleepiness ( $\rho = 0.31$ ,  $p = 0.0017$ ) and perceived stress ( $\rho = 0.31$ ,  $p = 0.0020$ ).

**Conclusion:** Poor sleep quality is highly prevalent among early-year medical students at the Universidad de San Carlos de Guatemala and

is associated with greater daytime sleepiness and perceived stress. These findings point to the need for both institutional and individual interventions—such as sleep-hygiene education, stress-management programs, and structural measures to reduce chronic sleep restriction—to help protect students' health and academic performance.

**Figure 1.** Percentage of Students.



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