

Sleep Regularity and Working Memory in First-Year Undergraduates

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First-year undergraduates report irregular sleep more often than any other group on campus, yet most advice they receive concerns how long to sleep rather than when. Halvorsen and Reyes (2023) found that students whose bedtimes varied by more than 90 minutes across the week scored lower on a digit-span task than consistent sleepers, even when total sleep time was the same. Earlier work on consolidation suggests why: memory traces are strengthened during specific sleep stages, so shifting bedtime shifts which stages a night contains (Okafor, 2021). This paper asks whether sleep regularity, independent of duration, predicts working memory performance in a first-year sample, and whether the popular guidance students actually read reflects that distinction (Sleep Research Collective, 2024).

Method

Participants

Forty-eight first-year students (29 women, 19 men; M age = 18.4 years) took part in exchange for course credit. All reported normal or corrected-to-normal vision and no diagnosed sleep disorder.

Materials

Sleep Diary

Participants logged bedtime and wake time each morning for 14 consecutive days. Regularity was defined as the standard deviation of bedtime across the two weeks, and duration as the mean time in bed.

Working Memory Task

Working memory was measured with a computerized digit-span task following the procedure of Halvorsen and Reyes (2023). Each participant completed the task on Day 1 and Day 15.

Results

Bedtime regularity predicted Day 15 digit span after controlling for duration, $b = -0.41$, $SE = 0.13$, $p = .003$. Duration alone was not a significant predictor, $p = .21$, which matches the pattern reported by Halvorsen and Reyes (2023) and the consolidation account summarized by Okafor (2021).

Discussion

The results extend earlier findings to a smaller and more homogeneous sample: when students slept mattered more than how long. The guidance most widely circulated to first-year students still leads with duration (Sleep Research Collective, 2024), so the practical recommendation is to anchor wake time first and let total sleep follow. Limitations include the self-report diary and a single campus; future work should use actigraphy and a larger sample.

References

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