

Critique of Screen Use at Bedtime and Sleep Duration and Quality Among Youths

Introduction

Published in *JAMA Pediatrics* in 2024, the study by Bradley Brosnan and colleagues investigates how objectively measured screen use before and during bedtime affects sleep duration and quality in adolescents. The authors aim to advance research in this area by relying on objective measures rather than self-reports, using wrist-worn accelerometers and video recordings to capture nightly behavior and sleep outcomes in 79 youths aged 11 to 14 years. This design strengthens the reliability of the findings and offers new insights into the relationship between screen habits and sleep health.

Study Summary

Participants' screen use was recorded during the two hours leading up to bedtime and while in bed, with high inter-rater reliability reported for coding. Sleep was measured night-by-night using accelerometers. Analyses adjusted for weekends showed that total evening screen use was not strongly associated with most sleep metrics. However, interactive use and in-bed screen behavior were consistently linked to shorter sleep duration and delayed sleep onset. Every 10 minutes of interactive screen use corresponded with approximately 9 minutes less sleep, with gaming and multitasking producing even greater effects.

Evaluation of Methods and Findings



The study benefits from objective measures of both behavior and sleep, reducing reliance on self-report bias. Its repeated-measures approach allows for within-subject comparisons across nights, improving the strength of the conclusions. Nonetheless, the relatively small and demographically narrow sample limits generalizability. The authors present the statistical findings clearly but devote little attention to why specific types of screen use, such as gaming, produce greater disruptions than passive viewing. The absence of long-term follow-up also prevents conclusions about cumulative sleep effects.

Strengths

The research design reflects real-world conditions and provides reliable data on adolescent screen use. By distinguishing between interactive and passive use, the study moves beyond the simplistic assumption that all screen time is equally harmful. The evidence that timing and type of activity matter more than total screen duration is an important contribution to current sleep research.

Limitations

The study's narrow sample restricts the extent to which findings can be applied broadly. Explanations of underlying mechanisms remain limited, and the authors stop short of exploring why interactive use is more disruptive. Without stronger demographic diversity and a deeper exploration of behavioral factors, the findings cannot fully inform clinical or educational guidelines.

Conclusion



Brosnan and colleagues provide important evidence that in-bed screen use, particularly interactive activities, is linked to measurable reductions in adolescent sleep duration. The use of objective methods strengthens confidence in the results, but gaps remain in terms of broader applicability and explanation of mechanisms. Further studies with larger, more diverse samples and longer follow-up are needed. For now, the article adds weight to the recommendation that limiting interactive screen use in bed is a practical way to protect adolescent sleep health.