Bedtime and electronics are a poor combo for teens, study finds

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Middle schoolers who spend time on smart phones, laptops and tablets in the hour before bed are likely to sleep poorly and be more tired the next day, leading them to use media devices at bedtime even more.

Those are among the findings of a study published by the *National Sleep*

Foundation by three UO researchers who studied the effects of screen time at bedtime among 345 12-to-14-year-olds over a six-month period.

Heather Leonard and Mark Hammond, doctoral students in the College of Education's Department of Counseling Psychology and Human Services, along with Atika Khurana, an associate professor in the department, found that not only did spending time on media devices before going to bed disrupt sleep but that it had a "bidirectional" effect such that poor sleep led to more bedtime media use.

"So it creates this vicious cycle where engaging in bedtime media use can result in poor quality sleep, which over time fuels more bedtime media use" said Khurana, who also serves as a research scientist at the Prevention Science Institute.

"Just having access to screen-based media devices in bedrooms has been associated with poor sleep quality and quantity among adolescents," which over time can result in difficulties with attention control, said Leonard, the study's lead author.

Access to devices was pervasive, with nearly three out of four seventh- and eighth-graders taking part in the study reporting exclusive access to a smartphone.

"That's pretty high for middle schoolers, but consistent with national trends," Khurana said. "And it's tricky for parents to navigate this because of peer pressure."

Adolescents with access to media devices in the bedroom are more likely to engage in bedtime media use, which can have a negative impact on their sleep and health, the study found. The time spent scrolling or texting takes the place of time that otherwise might have been spent sleeping.

Watching videos or playing games also might overstimulate young brains when they should be winding down, as does the devices' blue light. During the day, students who reported bedtime media use experienced more sleepiness and struggled to maintain attention.

The National Sleep Foundation and the American Academy of Pediatrics recommends eliminating screen time in the hour before going to bed. As for steps parents and guardians can take, Leonard said it helps to establish ground rules for logging on or using a phone and keeping media devices outside of bedrooms.

Khurana added that restricting media access tends to work better with younger than older adolescents.

"I think in those younger years, you have a better chance as a parent to put down some ground rules and consistently enforce them," Leonard said. "You have an opportunity to build good habits and establish healthy sleep hygiene early on that they'll carry forward with them."

One other step parents can take is to model healthy behaviors when it comes to using their smartphone or laptop, as well as sleep hygiene, the researchers said.

"If parents are going to be on their phones in the bedroom, then it's hard to convince children that they shouldn't do that," Khurana added.

Sleep plays a critical role at that age. The potential long-term effects of poor sleep are wide ranging, contributing to conditions such as chronic inflammation and obesity, among others. Understanding how modern interactive forms of media can affect adolescent health and behavior is an important area of research, Khurana noted.

More information: Heather Leonard et al, Bedtime media use and

sleep: evidence for bidirectional effects and associations with attention control in adolescents, *Sleep Health* (2021). DOI: 10.1016/j.sleh.2021.05.003