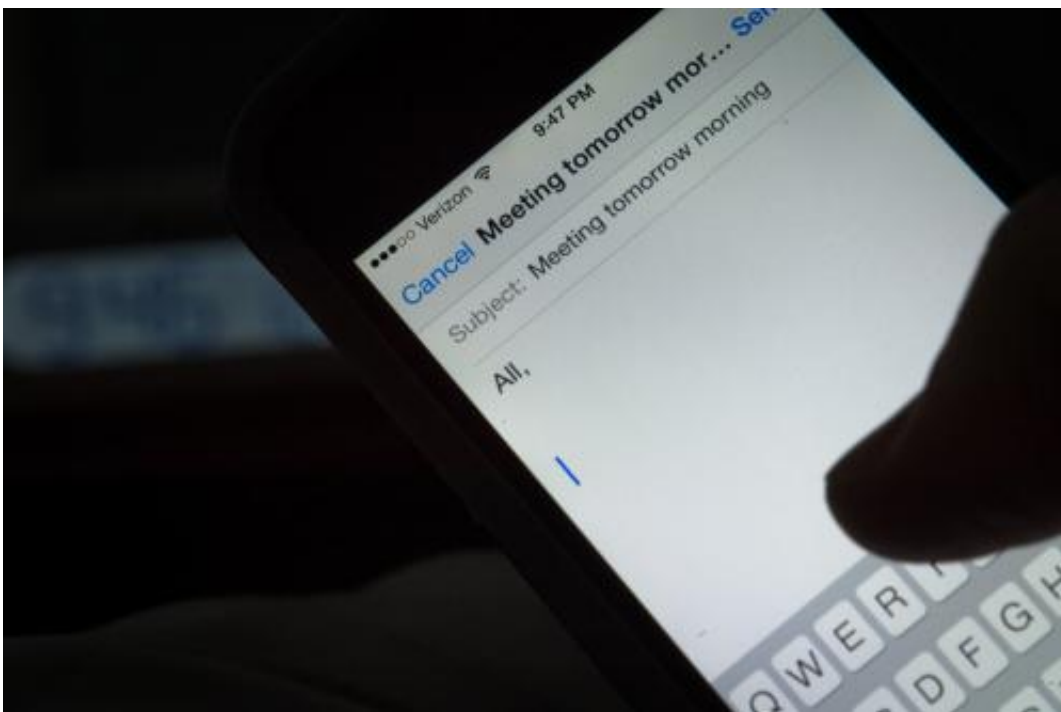


Nighttime smartphone use zaps workers' energy

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Using a smartphone to cram in more work at night results in less work the next day, indicates new research by a team of current and former Michigan State University researchers. Credit: Michigan State University

Using a smartphone to cram in more work at night results in less work the next day, indicates new research co-authored by a Michigan State University business scholar.

In a pair of studies surveying a broad spectrum of U.S. workers, Russell

Johnson and colleagues found that people who monitored their smart phones for [business](#) purposes after 9 p.m. were more tired and were less engaged the following day on the job.

"Smartphones are almost perfectly designed to disrupt [sleep](#)," said Johnson, MSU assistant professor of management who acknowledges keeping his [smartphone](#) at his bedside at night. "Because they keep us mentally engaged late into the evening, they make it hard to detach from [work](#) so we can relax and fall asleep."

More than half of U.S. adults own a smartphone. Many consider the devices to be among the most important tools ever invented when it comes to increasing productivity of knowledge-based work, Johnson said.

Yet at the same time, the National Sleep Foundation says only 40 percent of Americans get enough sleep on most nights and a commonly cited reason is smartphone usage for work.

For the first study, the researchers had 82 upper-level managers complete multiple surveys every day for two weeks. The second study surveyed 161 employees daily in a variety of occupations – from nursing to manufacturing and from accounting to dentistry.

Across both studies, the surveys showed that nighttime smartphone usage for business purposes cut into sleep and sapped workers' energy the next day in the office. The second study also compared smartphone usage to other electronic devices and found that smartphones had a larger negative effect than watching television and using laptop and tablet computers.

In addition to keeping people mentally engaged at night, smartphones emit "[blue light](#)" that seems to be the most disruptive of all colors of

light. Blue light is known to hinder melatonin, a chemical in the body that promotes sleep.

"So it can be a double-edged sword," Johnson said. "The nighttime use of smartphones appears to have both psychological and physiological effects on people's ability to sleep and on sleep's essential recovery functions."

One potential solution is turning off the smartphone at night. But Johnson said that isn't always practical in today's business world.

"There may be times in which putting off work until the next day would have disastrous consequences and using your smartphone is well worth the negative effects on less important tasks the next day," he said. "But on many other nights, more sleep may be your best bet."

The study appears online the research journal *Organizational Behavior and Human Decision Processes*. Johnson's co-authors are two doctoral graduates from MSU's Broad College of Business: Klodiana Lanaj, now an assistant professor at the University of Florida, and Christopher Barnes, now an assistant professor at the University of Washington.

Provided by Michigan State University

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