

New studies on student alcohol use can inform interventions to reduce blackouts

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College students who drink alcohol don't typically intend to drink to the point that they "black out," and they also don't fully grasp what specific drinking behaviors present the greatest risk of blackouts, a new series of studies finds.

Prior research has found that between 30 and 50 percent of young adults who drink regularly report that they have experienced alcohol-related memory impairment in the past year, whether full "blackouts," where they can't remember anything for some period of time, or "brownouts"—episodes of on-and-off [memory loss](#), where memories may be recovered with reminders.

"We don't yet know what long-term effects having a [blackout](#) or repeated blackouts has on the brain," said Kate Carey, a professor with the Center for Alcohol and Addiction Studies at Brown's School of Public Health. "We do know that having alcohol-related memory impairment is associated with other negative consequences."

Those consequences can range from hangovers or missed classes to fights, overdoses, mental health problems or sexual assault. Given the seriousness

of those risks, Carey and her colleagues conducted a series of [focus groups](#) to better understand [college students'](#) knowledge of what causes blackouts, understanding of the distinctions between blackouts and brownouts, and perspectives on the consequences of both. Their findings were published in three recent papers.

"Studies like these, addressing attitudes toward blackout drinking as well as what students know and do not know about blackouts, give us clues about how we might intervene to reduce this high-risk outcome," said Jennifer Merrill, an assistant professor of behavioral and social sciences at Brown who was involved in the studies. "This work helps us to identify where there is room to correct any misconceptions students have about the causes and consequences of blackouts."

Focus on focus groups

Each of the three studies was based on analyzing transcripts from a series of eight single-gender focus groups of college students who had reported a blackout in the prior six months. The focus groups included a total of 50 students, 28 women and 22 men, from four-year colleges and universities in the Providence, Rhode Island, area.

In the first paper, the researchers report that students were aware that drinking hard liquor, drinking large quantities of alcohol and drinking quickly increased the risk of blackouts. However, Carey said, many students didn't understand that biological factors—things like biological sex and genetics—play a role in the risk of blackouts, or that mixing alcohol use with other drugs could increase risk as well.

"The kind of drinking that results in alcohol-related memory impairment is common, but it's also not typically done with the intent of blacking out," Carey said. "And those who regularly drink and report blackout experiences don't have a full

understanding of what causes them. The interesting thing is that regardless of how much you drink, there are ways to drink so that you don't blackout."

Specifically, drinking in smaller quantities or pacing drinks across a longer period of time can prevent the rapid rise in blood alcohol concentration that is known to cause blackouts, she said.

The focus groups also provided other insights into how best to draw college students' attention to the consequences of blackouts.

The second paper analyzed perspectives from students who were asked: "What is a person's typical reaction when he/ she blacks out?" and "Overall, what makes a blackout a negative, neutral or positive experience?"

Generally, students described blackouts negatively, using terms such as "embarrassing," "annoying" and "scary." But some described the experience as exciting.

"You're a little nervous cuz [sic] you definitely could have done something really stupid, but you don't know and it's kind of like a little bit of fear, but at the same time, you're kind of excited that you did something awesome," a 19-year-old male participant said of blackouts.

The researchers found that social factors—whether a student's friends thought blackouts were common or acceptable and who they were with during the blackout period—influenced their perspective. The severity of the memory loss, and learning whether they did anything embarrassing during the blackout, also affected their opinions, Carey said.

In the third study, the researchers found that college students used the phrase "blackout drinking" hyperbolically to describe drinking very heavily, yet without the intent to lose memories. On the other hand, "a blackout" more precisely meant an episode with periods of as much as an hour of complete memory loss. The students called shorter periods of missing memory or fuzzy memories "brownouts," Carey said.

While the free-form conversations gave the

researchers new insights into nuances of the blackout experience and the language students use, the focus groups were not designed to provide quantitative data on how common blackouts and brownouts were. For that reason, the research team also conducted an online survey of 350 full-time college students from across the U.S. who reported lost memory after drinking in the past year.

The survey found that students experienced brownouts more frequently than blackouts. Specifically, 49 percent of those surveyed had experienced both blackouts and brownouts in the past month, 32 percent had experienced only brownouts, 5 percent experienced only blackouts, and 14 percent hadn't experienced any alcohol-related memory impairment in the past month.

The surveyed students also voiced less concern about brownout experiences compared to blackouts.

"We found that brownouts were indicators to the students that they were drinking in a manner that could lead to a blackout someday," Carey said. "But they were discounting the earlier signs of memory loss, suggesting that they weren't serving as red flags or even as a yellow light."

Education and interventions

General education on the consequences of heavy alcohol use hasn't been shown to be effective for anyone, including college students, Carey said, but personalized feedback can reduce the riskiest kinds of drinking.

She hopes to use insights from these studies to develop additional education modules for alcohol prevention programs that specifically address the risks of the high-volume, fast-paced drinking that is likely to lead to blackouts. Particularly, that behaviors like "pregaming"—drinking before attending a larger event or activity where alcohol will be available—participating in drinking games and "chugging" increase the risk of blackout.

The role that biological factors play in the risk of blackout is another area that needs to be addressed with better education, she said.

Walking students through their blackout experiences to reframe them as risky rather than inconsequential and sharing statistics that illustrate that blackouts aren't actually the norm among peers are other targeted ways to reduce behaviors that lead to blackouts, Carey said.

"We hope that focusing in on this one particular consequence of a certain style of [drinking](#) will provide lots of opportunities for interventions," she said.

More information: Mary Beth Miller et al, College student knowledge of blackouts and implications for alcohol intervention: A qualitative analysis., *Psychology of Addictive Behaviors* (2018). [DOI: 10.1037/adb0000419](#)

Jennifer E. Merrill et al. How do college students subjectively evaluate "blackouts"?, *Addictive Behaviors* (2018). [DOI: 10.1016/j.addbeh.2018.09.022](#)

Mary Beth Miller et al. Distinctions in Alcohol-Induced Memory Impairment: A Mixed Methods Study of En Bloc Versus Fragmentary Blackouts, *Alcoholism: Clinical and Experimental Research* (2018). [DOI: 10.1111/acer.13850](#)

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