

Pain and substance abuse interact in a vicious cycle

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Emily Zale is an assistant professor of psychology at Binghamton University, State University of New York. Credit: Binghamton University, State University

of New York

Pain and substance use interact in a vicious cycle that can ultimately worsen and maintain both chronic pain and addiction, according to a research team including faculty at Binghamton University, State University of New York.

Binghamton University Assistant Professor of Psychology Emily Zale, along with Joseph Ditre and Lisa LaRowe of Syracuse University, looked at results from over 100 studies on pain and substance use. The team then integrated these two lines of empirical inquiry into a reciprocal model in which pain and [substance abuse](#) interact in the manner of a positive feedback loop, resulting in greater pain and the maintenance of addiction.

"Research studies usually examine either how substance use affects pain or how pain affects substance use. Our reciprocal model puts these two different types of research together to understand how pain and substance use affect each other," said Zale. "On one hand, substance use can be a risk factor for chronic pain and may worsen pain over time. On the other hand, experiencing pain can motivate people to use substances and might make it harder to quit. We propose that the two conditions interact in the manner of a positive feedback loop, which means that they can increase each other over time. Another way to think about this relationship is as a vicious cycle: substance use can worsen pain, pain can motivate escalations in substance use or make it harder to quit, and these repeated cycles can result in more severe pain and worsening addiction."

Zale said that clinicians who treat [substance use disorders](#) should assess their patients for [chronic pain](#), and consider addressing pain during their treatment.

"We have evidence that pain may get worse when people go into withdrawal; clinicians treating addiction should be prepared to help their patients manage pain during withdrawal," said Zale. "We also know that people use substances beyond opioids to self-medicate or cope with pain. Clinicians trying to help their patients quit smoking cigarettes, drinking alcohol or using cannabis should help their patients replace substance use with healthy strategies to cope with pain."

Zale and her collaborators are pursuing multiple avenues of research, including studies to better understand the reasons that pain and substance use get caught in a [vicious cycle](#), and studies to develop treatments that can help break the cycle. She has established the Substance Use, Pain, and Health Research Lab, and is collaborating with other Binghamton researchers to better understand the development of pain and substance use in adolescents and young adults.

"When people think of pain and [substance use](#), it's common for opioids to come to mind," said Zale. "While the [opioid crisis](#) has rightfully garnered considerable attention, our research suggests that non-opioid substances, like nicotine/tobacco, alcohol, and cannabis, are also very important to consider in relation to pain. Nicotine/tobacco, alcohol, and cannabis are the most commonly used substances in the US, and research into associations between [pain](#) and these non-opioid [substances](#) is continuing to increase in popularity."

More information: Joseph W. Ditte et al, A Reciprocal Model of Pain and Substance Use: Transdiagnostic Considerations, Clinical Implications, and Future Directions, *Annual Review of Clinical Psychology* (2018). [DOI: 10.1146/annurev-clinpsy-050718-095440](https://doi.org/10.1146/annurev-clinpsy-050718-095440)

Provided by Binghamton University

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