

'Study drugs' shown to set the stage for other drug use and mental health decline

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Taking "study drugs" like Adderall without a diagnosis is not only dangerous in itself but can lead to other drug use and a decline in mental health, according to new research from Binghamton University, State University of New York.

Attention Deficit Hyperactivity Disorder (ADHD) medications are frequently used illicitly by college students as a study aid, but it's unknown what [psychoactive substances](#) are likely to be abused along with these drugs.

To explore this issue, a team of Binghamton researchers led by Associate Professor of Health and Wellness Studies Lina Begdache conducted a study of 702 undergraduate college students from across the U.S., asking about the most commonly used drugs used by students—including ADHD medications, cannabis, nicotine, alcohol, MDMA, and ecstasy—as well as questions on [academic performance](#) and physical and mental distress.

The researchers found several associations indicating that using one substance may lead to using others—as if the brain becomes primed for further substance use.

"Substance use promotes the release of the neurotransmitter dopamine, which is responsible for the initial euphoria and feelings of pleasure. These sensations act as a [positive reinforcement](#) for further substance use," said Begdache. "The continuous activation of the limbic system through [drug use](#) leads to dependence, in a sense that this substance is no longer producing pleasurable feelings. Individuals have to either increase the dose or resort to something more potent."

The researchers found that using one substance was associated with

generally poorer mental health and lower resilience to stress. Also, low frequency of use was negatively associated with mental distress, which potentially becomes a positive reinforcement for further use.

"Since the human brain continues developing into a person's mid/late 20s, substance use during young adulthood may have a strong negative impact on the quality of brain maturity and cognitive function," said Begdache.

"Additionally, those individuals are likely to continue using substances later in life, which means they are at risk of mental health decline as well. Our findings also indicated that substance use is linked to lower resilience to adversity. So we can speculate that the rise in mental health ailments may be mediated by a lower resilience to adversity, which impacts mood."

Begdache said that these findings are important because many students may use study drugs, not knowing their detrimental effects on the brain.

"Since these are prescribed medications to promote focus in individuals who actually have ADHD, students may think that they are safe to use and that the drug may give them an academic edge," she said.

Begdache leads the Binghamton Student Managed Adderall Research Team (B-SMART), which investigates the harmful effects of Adderall abuse on [college students](#) and is conducting further studies. She believes that college campuses need to take a stronger stance on educating their students about the dangers of drug use on the developing brain.

"The repeated feedback we receive from students is that they wish they knew this information earlier. Lack of education and [peer pressure](#) are the main drivers," said Begdache. "College campuses are struggling to deal with the [mental health](#) decline of their students. A preventative

approach is more cost-effective and may likely improve the quality of life of their students in the future."

The paper "[Association between ADHD Medication, Cannabis, and Nicotine Use, Mental Distress, and Other Psychoactive Substances.](#)" was published in the *International Journal of Psychological and Behavioral Sciences*.

More information: [Association between ADHD Medication, Cannabis, and Nicotine Use, Mental Distress, and Other Psychoactive Substances](#) , *International Journal of Psychological and Behavioral Sciences* (2024)

Provided by Binghamton University

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