College enrollment does not lead to problem drinking in adulthood

March 13 2013

(Medical Xpress)—Despite the high levels of binge drinking that take place on college campuses, college enrollment does not lead to substance abuse problems later in adulthood, and it may actually prevent adult substance abuse amongyouth who would not be expected to attend college, according to researchers at Penn State.

"College is often perceived as a risky environment for problem drinking, but seldom have people looked at the long-term consequences of attending college on substance-use patterns," said Stephanie Lanza, research associate professor of health and human development.

To investigate the effects of attending college on future substance-use patterns, Lanza and her colleagues asked two questions: "If all youth in the United States could go to college, what impact would that have on substance use behavior in adulthood?" and "Among kids who went to college, did college hurt them or protect them in terms ofadult substance abuse?"

The team examined data from 1,092 high-school seniors who participated in the National Longitudinal Youth Survey 1979. The survey assessed the participants' college enrollment a year later, in 1980. In 1994, when the participants were approximately 33-years-old, they were asked about their alcohol, tobacco and drug use.

The researchers analyzed this data using a combination of latent class analysis and causal inference, both of which they pioneered.

"The approach of applying these methods in combination is fairly novel and provides us with an opportunity to discover fascinating patterns in the data that otherwise would not be obvious," Lanza said.

According to Lanza, latent class analysis is a way of organizing people in a population into subgroups of people who have similar characteristics—in this case substance-use behaviors.

"Without latent class analysis, we would end up with hundreds of subgroups—for example, regular smokers who do not use hard drugs but engage in some alcohol use, or individuals who are beginning to exhibit signs of dependence in their behavior patterns," she said. "Latent class analysis narrows down the number of subgroups to a manageable size."

The researchers applied latent class analysis to the data and came up with two subgroups: low-level users characterized by very low probabilities of binge drinking, cigarette use, marijuana use and crack/cocaine use, and heavy drinkers characterized by having an elevated probability of reporting binge drinking and being as likely to engage in occasional or daily smoking as not.

After identifying these subgroups, the team applied another statistical tool, called causal inference.

"One of the biggest problems in studies involving humans is the frequent inability to assign people to different treatment groups," Lanza said. "For example, we can't randomly assign certain individuals to attend college and others to not attend college. Causal inference is a way of dealing with the non-random nature of human studies. In this study, it allowed us to balance the data so that it mimicked what we would have seen had we randomly assigned high-school seniors to either go to college or not."

The researchers found that college enrollment may actually prevent adult

substance abuse among youth who might not be expected to attend college due to factors such as low household income and low maternal education. Specifically, they found that adults would be over six times more likely to engage in problem drinking at age 33 if they did not attend college, compared to if they did attend.

The results will appear in the March 2013 issue of the journal *Structural Equation Modeling*.

"Hypothetically, if we couldsend everyone in the United States to college, that would be protective overall and would significantly reduce problematic substance use in adulthood," Lanza said. "But because it's not the reality that everyone in the United States goes to college, we had to apply our statistical techniques to balance the data. After doing that, we found that college enrollment does not protect against problem drinking, nor does it place individuals at risk for future problem drinking."

The National Institute on Drug Abuse and the National Institute on Diabetes andDigestive and Kidney Diseases provided funding for this work. Other authors on the paper include Donna Coffman, research assistant professor of health andhuman development, and Shu (Violet) Xu, former postdoctoral fellow at Penn State and current assistant research scientist at the New York University College of Dentistry.

Provided by Pennsylvania State University