Signs point to reduced drinking by pregnant women

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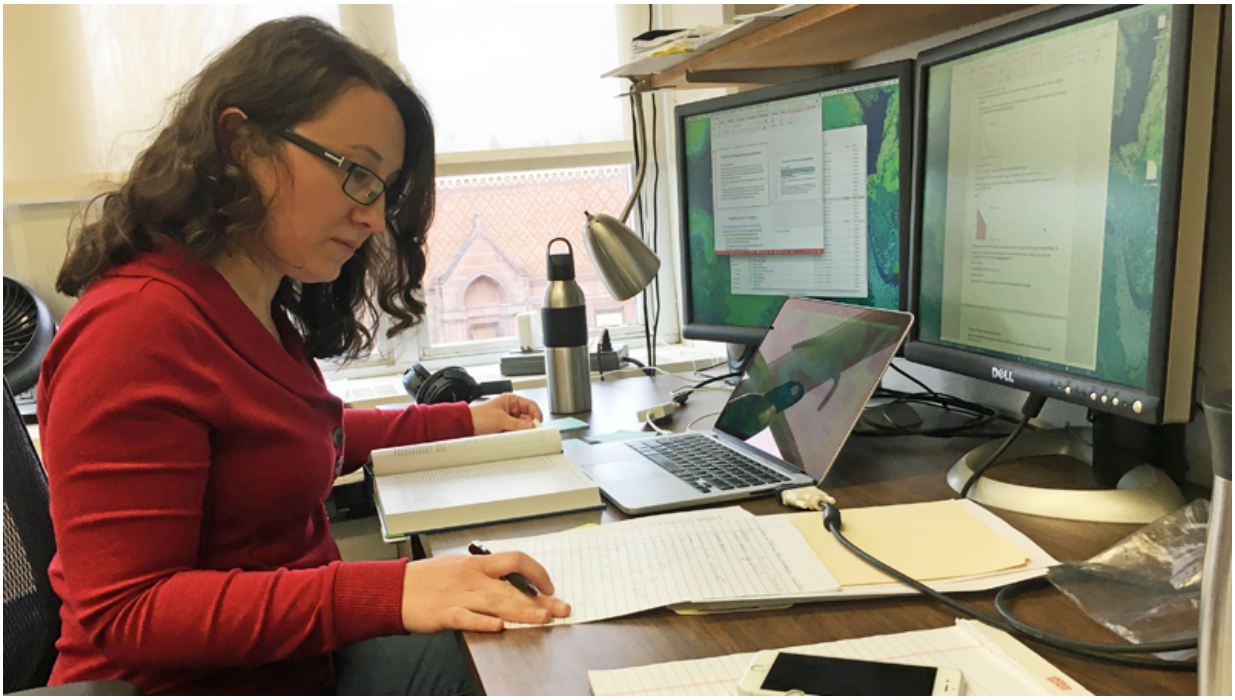

Gulcan Cil, health economist at the University of Oregon, saw state-mandated warning signs meant to discourage pregnant women from drinking alcohol. As part of her doctoral dissertation, she turned to available national databases to see if she could find evidence that such policies work. Credit: University of Oregon

The signage varies but the message is working. Drinking by pregnant women is down 11 percent in states requiring point-of-sale warning signs, says a health economist at the University of Oregon.

The benefits to heeding the warnings show up in fewer extremely premature births (less than 32 weeks gestation) and very-low-birth-weight babies (less than 3.5 pounds), reports Gulcan Cil in a paper published in the May issue of the *Journal of Health Economics*. The biggest effects are seen among those with the most drinking behavior—women 30 and older.

Her complex breakdown of extensive data, she said, indicates reduced drinking by pregnant women associated with signage and suggests a likely causal relationship between drinking while pregnant and birth outcomes.

"The signage is working," said Cil, a visiting instructor in the Department of Economics and postdoctoral fellow in the department's Mikesell Environmental and Resource Economics Research Lab. "Drinking alcohol while pregnant has been an issue that many policies have tried to address over the last few decades. An 11 percent change in the prevalence of drinking is not trivial. It is big enough to show up in the birth outcomes."

The study involved regression analyses of data available in two national sources and information from the 23 states and Washington, D.C., which have adopted such signage, and a group of states that have not. The study's control group included women who had lived in non-adopting states and women who lived in adopting states before signage requirements were implemented.

The primary data source was the National Vital Statistics Natality Detail Files, a collection system based on information obtained on birth certificates. The focus was on data from 1989, when information on alcohol consumption during pregnancy was required, to 2010.

Data also came from the Behavioral Risk Factor Surveillance System,

1985-2010. The system, Cil said, gathers information that women were likely to freely share about their drinking patterns during the previous 30 days before taking the telephone-based survey.

Her analytic approach to compare data from sign-adopting states and states not using signage allowed Cil to identify the direct relationship between drinking while pregnant and birth outcomes, reducing the likelihood that other factors such as cigarette smoking, drug abuse, nutritional deficiencies and other risky life choices were at play in behavioral changes.

"It's very hard to isolate one thing from another," she said. "One thing that we do in empirical economics, in general, or applied econometrics is to try to find something that changes one variable at a time."

The study examined data on drinking in general terms. It was not able to sufficiently probe effects related to heavy drinking, which is known to contribute fetal alcohol spectrum disorders. The failure to find statistical significance for behavioral change related fetal alcohol disorders, Cil noted, may reflect the fact that the disorders are rarely diagnosed at birth and reported on birth certificates.

Point-of-sale signage, she said, appears to be an effective, low-cost approach to protect the health of pregnant women and the babies they carry.

"Some people never get exposed to these kinds of educational campaigns," Cil said, adding that the signage that she saw at a Eugene grocery store, which sparked her study, reinforced what she already knew about drinking while pregnant. "I found that the issue has never been studied and evaluated as a public education program or public awareness program."

Cil noted that the signage used in Oregon contain an eye-catching graphic depicting a pregnant woman, while signs used in other states do not. All contain similar language. A future study might explore whether variations in signage—graphics, fonts, colors and language—may best influence behavioral change.

More information: Gulcan Cil, Effects of posted point-of-sale warnings on alcohol consumption during pregnancy and on birth outcomes, *Journal of Health Economics* (2017). DOI: 10.1016/j.jhealeco.2017.03.004

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