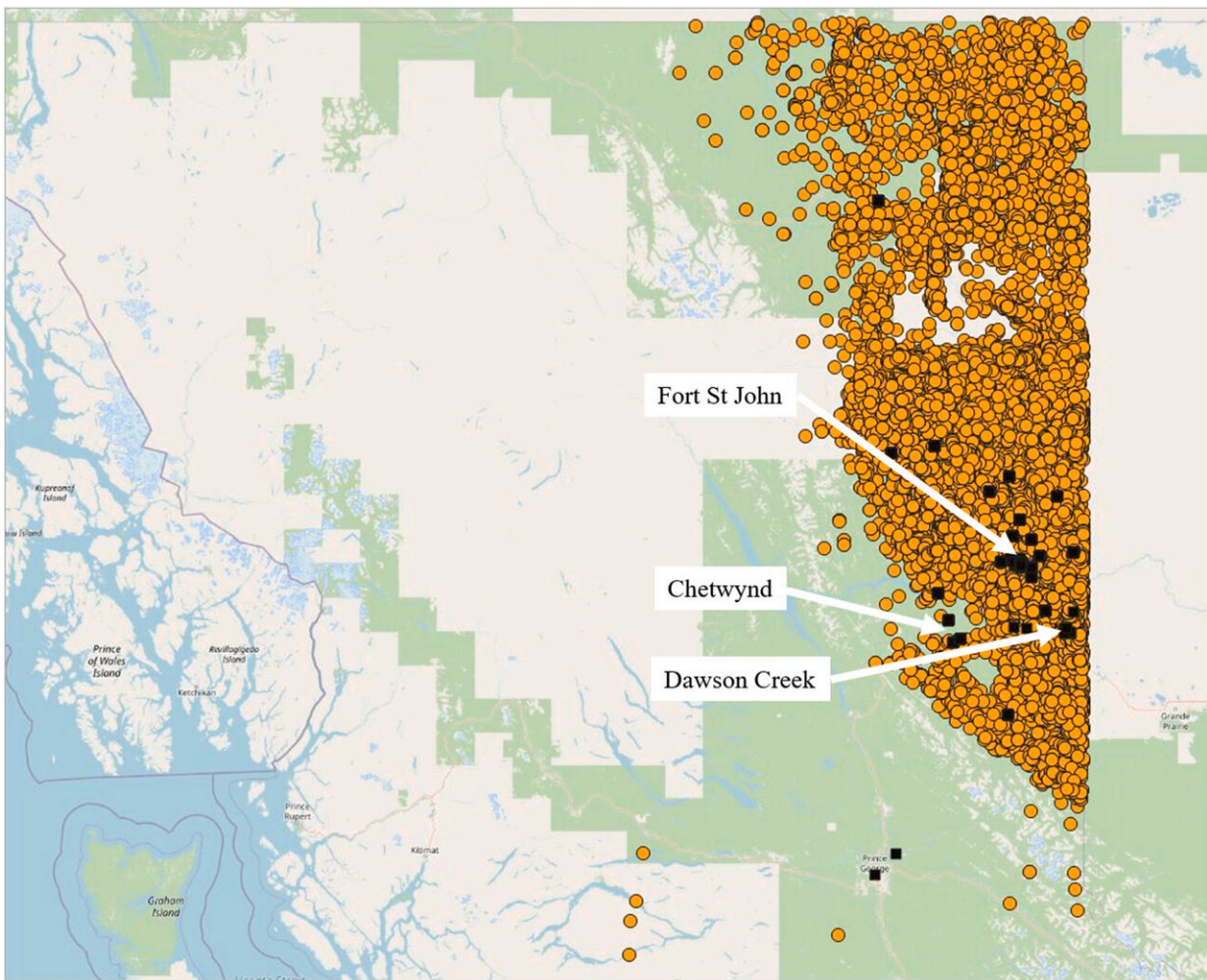


Pregnant women living near natural gas sites may experience higher rates of depression, substance use

April 27 2022, by Don Campbell



Map of British Columbia with oil and gas wells (yellow circles) located in Northeastern British Columbia and postal code centroids (black squares) in 2016 (Open Data from BC Oil and Gas Commission). Credit: *International Journal of*

Women living close to natural gas operations—as well as the economic boom towns that often spring up around them—experienced higher rates of depression and substance use during pregnancy, according to a new study.

The study, published in the *International Journal of Hygiene and Environmental Health*, focused on more than 6,300 women who gave birth in northeastern British Columbia, an area known for its natural gas industry.

"Living near natural gas operations has been associated with an array of negative health outcomes, but little is known about the potential impact on maternal mental health," says Élyse Caron-Beaudoin, an assistant professor in the department of health and society and one of the study's authors.

"This adds to a growing body of evidence that living near unconventional natural gas operations is linked to adverse health outcomes."

The study included women who gave birth at Fort St. John Hospital, the largest hospital in northeastern British Columbia, over a 10-year period. Mental health data came from the local health network while information about [substance use](#) came from a self-reported questionnaire.

The research team estimated exposure to natural gas operations by using the distribution of wells in four zones around the participants' postal codes that extended 2.5, 5, 10 and 50 kilometers, respectively.

Caron-Beaudoin says there are many potential reasons why living close to these operations can lead to higher rates of depression and substance use. While exposure to chemicals might be a factor, she says natural gas operations in general are highly disruptive to a community.

The area of B.C. involved in the study was once predominantly known for agriculture but has since been transformed by the oil and gas boom. This has resulted in a flood of people moving into the community, which has driven up the cost of living.

Caron-Beaudoin points to research done on oil and gas boom towns in the U.S. that experienced increases in [violent crimes](#), alcohol and substance use, as well as other community health crises. Many of the communities were not equipped to handle these challenges due to a lack of social services, she says.

"There is a big disturbance in the social fabric of those communities," she says. "Studies in the U.S. identified higher levels of anxiety and a loss of community cohesion among residents because their communities were upended."

In northeastern B.C., natural gas is extracted using a technique called hydraulic fracturing, often referred to as "[fracking](#)." It involves using high amounts of liquid pressure to create cracks underground to force natural gas to escape into wells (it's a technique also used to extract oil). However, some of the chemicals used in fracking operations are toxic and can contaminate the surrounding air, water and soil.

Caron-Beaudoin is one of a few researchers actively looking at the potential health impacts associated with natural gas exploitation in Canada. As one of the largest global producers of natural gas, she says more work needs to be done on the health effects of fracking operations in Canada.

Recently, a study from the [University of Calgary](#) found that proximity to fracking operations was associated with greater risk of preterm [birth](#) in Alberta. This echoes [findings on birth outcomes in northeastern B.C.](#) published last year by Caron-Beaudoin.

"It's concerning that important policy decisions are being made with such a blatant lack of knowledge and information," she says.

The area of northeastern B.C. where the study participants were located will also be home to a massive new gas plant that could significantly increase the number of wells in the near future.

"Fracking operations in particular have completely changed the landscape of oil and gas extraction, but we don't have a lot of Canadian-based research on the public health impacts of this industry. It's time for that to change."

More information: Amira M. Aker et al, Proximity and density of unconventional natural gas wells and mental illness and substance use among pregnant individuals: An exploratory study in Canada, *International Journal of Hygiene and Environmental Health* (2022). [DOI: 10.1016/j.ijheh.2022.113962](#)

Provided by University of Toronto

Citation: Pregnant women living near natural gas sites may experience higher rates of depression, substance use (2022, April 27) retrieved 27 April 2024 from <https://medicalxpress.com/news/2022-04-pregnant-women-natural-gas-sites.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.