

Impact of the COVID-19 pandemic on alcohol and drug use patterns among youth: A cross-sectional sample from British Columbia, Canada

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Research Highlights

- COVID-19 had an immediate impact on alcohol and drug use symptoms among youth
- COVID-19 was associated with higher odds of substance use service need among youth
- COVID-19 did not modify the magnitude or direction of effects of the risk and protective factors on substance use service need

Background

Alcohol and illicit drug use among youth is a global public health priority^{1,2}.

Public health responses to youth substance use commonly focus on modifiable individual, social, and environmental risk and protective factors for substance use³.

Given the COVID-19 pandemic's impact on risk and protective factors, there is concern about how the pandemic may have impacted youth substance use⁴.

Research Questions

- Did the COVID-19 pandemic have an impact on the past month average number of substance use symptoms?
- Did the COVID-19 pandemic modify the effect of risk and protective factors on youths' substance use service need?

Methods

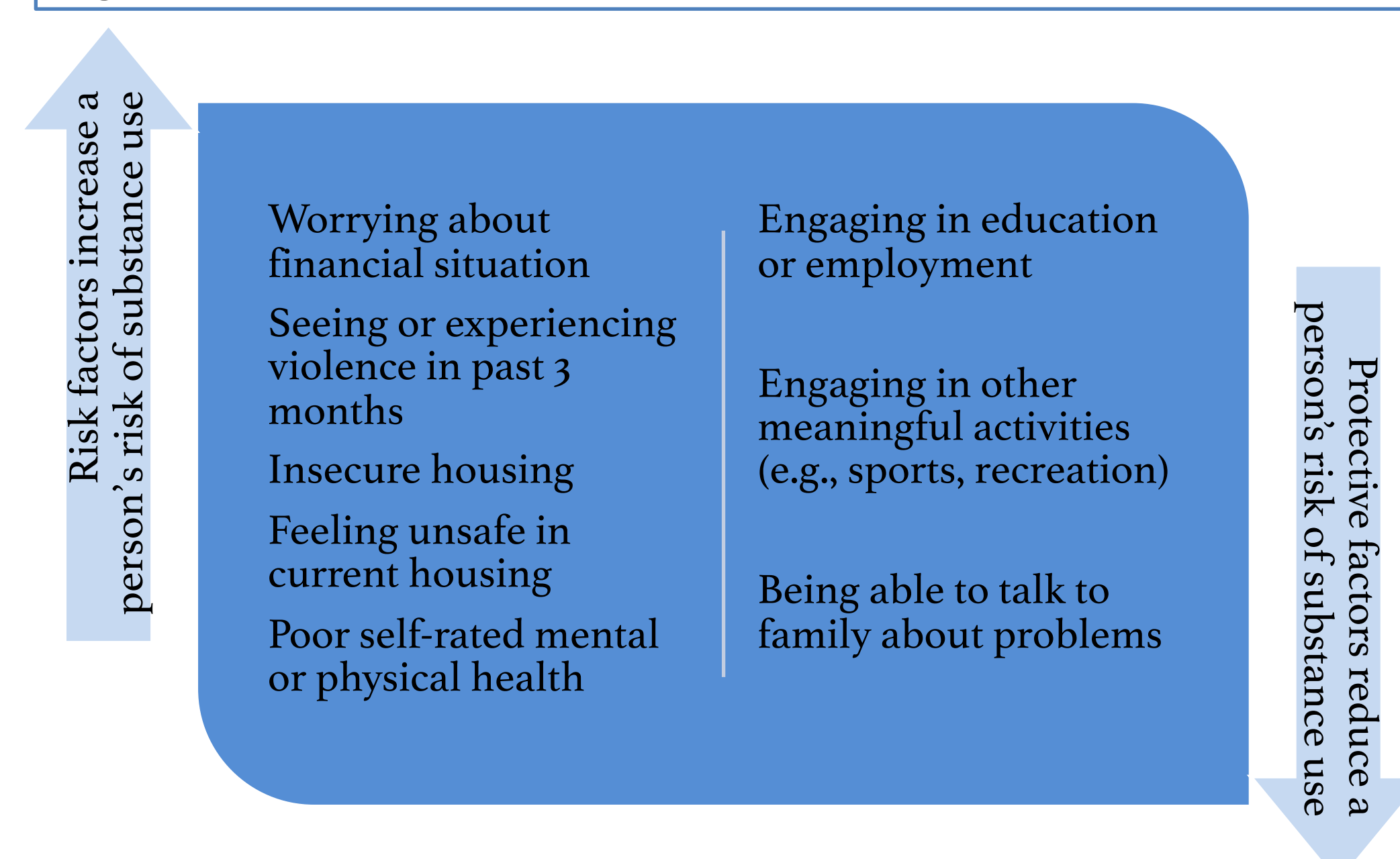
Design and Sample

Repeated cross-sectional sample of youth ages 10-24 (n=6,022) accessing a provincial network of integrated youth services (IYS) in British Columbia.

Measures

Clinical and patient reported outcome (PROs) measures collected from youth at intake between May 1, 2018, to February 23, 2022. Select risk/protective factors are shown in Figure 1.

Fig 1. Select Risk and Protective Factors for Substance Use



Research Question 1 Analysis

Interrupted time series to analyze if the pandemic was associated with a change in average number of substance use symptoms (GAIN-SS substance use subscale score, ranging from 0-5; higher score indicates worse symptoms).

Research Question 2 Analysis

Multivariable logistic regression, adjusted by age, gender, and race, estimating the association between select risk/protective factors on moderate/high vs. low likelihood of substance use service need, stratified by pre-pandemic and pandemic samples.

Results

Effect of COVID-19 on substance use symptoms

Figure 2 and Table 1 indicate that the COVID-19 pandemic was associated with a significant level change in average past month substance use symptoms in the month immediately after the pandemic only.

Fig 2. Monthly time series of average substance use symptoms

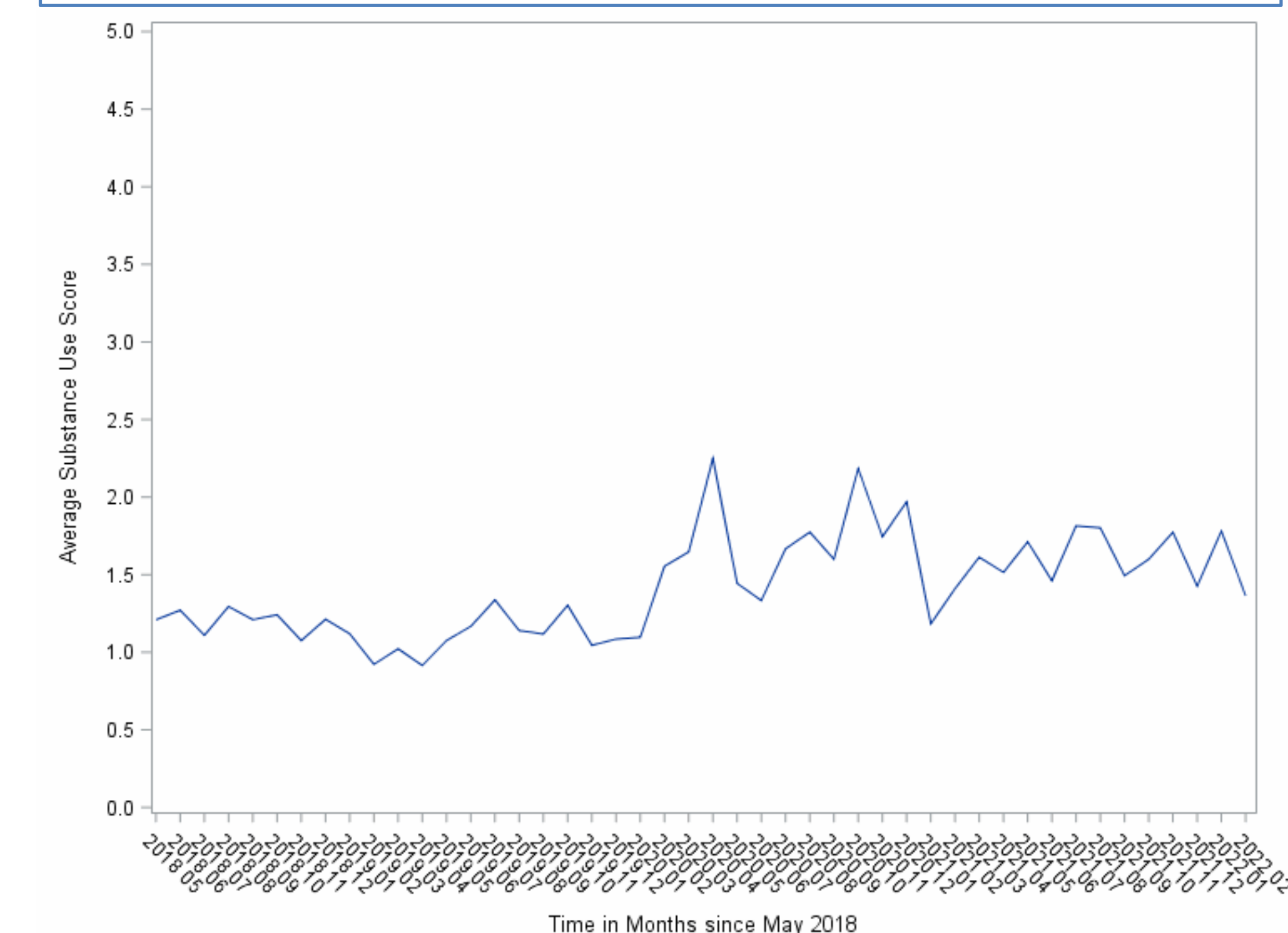


Table 1. Interrupted time series model predicting average monthly substance use symptoms per youth over time

	Coef.	SE	t-statistic	P-value
Intercept	1.102	0.101	10.89	<0.0001
Pre-pandemic trend	0.006	0.007	0.88	0.384
Level change in month immediately after the pandemic	0.770	0.286	2.69	0.01
Trend change after the pandemic	-0.012	0.010	-1.19	0.242

Association between risk/protective factors and substance use service need by pandemic period (Table 2)

The odds of moderate/high substance use service need were significantly higher during the pandemic period. The direction and magnitude of the adjusted associations for the risk/protective factors in the overall and pre-pandemic samples remained consistent. However, the strength of these adjusted associations decreased during the pandemic period, except for poor physical health.

Table 2. Stratified multivariable logistic regression on association between risk/protective factors and odds of substance use service need

Risk/Protective Factor	Overall (n=6022)	Pre-pandemic (n=3066)	Pandemic (n=956)
Pandemic vs. Pre-pandemic	2.39 (2.04, 2.80)	-	-
In education and/or employment (ref: No)	0.91 (0.77, 1.07)	0.83 (0.70, 1.00)	0.84 (0.70, 1.00)
I can talk to someone in family if I have problems (ref: Yes)			
Sometimes	1.15 (1.01, 1.31)	1.21 (1.05, 1.40)	1.21 (1.05, 1.40)
No	1.07 (0.89, 1.29)	1.05 (0.86, 1.28)	1.05 (0.86, 1.40)
Feel safe in current living situation (ref: Yes)			
1.00 (0.82, 1.23)	0.98 (0.790, 1.22)	0.98 (0.79, 1.22)	
Seen or experienced violence in last three months (ref: No)	2.64 (2.33, 2.99)	3.06 (2.67, 3.52)	3.04 (2.65, 3.49)
Time per week doing meaningful activities (ref: > 16 hours)			
11-15 hours	0.97 (0.80, 1.18)	0.98 (0.79, 1.21)	0.98 (0.79, 1.21)
6-10 hours	0.82 (0.69, 0.98)	0.78 (0.65, 0.94)	0.78 (0.65, 0.94)
2-5 hours	0.84 (0.71, 0.99)	0.84 (0.70, 1.00)	0.84 (0.70, 1.00)
<2 hours	0.86 (0.72, 1.04)	0.86 (0.80, 1.05)	0.86 (0.71, 1.05)
Self-rated health (ref: Excellent/Very good)			
Good	1.27 (1.06, 1.52)	1.28 (1.04, 1.56)	1.28 (1.04, 1.56)
Fair	1.63 (1.34, 1.98)	1.74 (1.40, 2.15)	1.73 (1.40, 2.14)
Poor	2.0 (1.54, 2.58)	1.95 (1.47, 2.58)	1.94 (1.46, 2.57)
Self-rated mental health (ref: Excellent/Very good)			
Good	0.99 (0.70, 1.41)	0.93 (0.64, 1.36)	0.93 (0.64, 1.35)
Fair	1.33 (0.95, 1.86)	1.29 (0.90, 1.84)	1.28 (0.90, 1.83)
Poor	1.66 (1.18, 2.34)	1.57 (1.09, 2.25)	1.56 (1.08, 2.24)

Table Notes: Bold values are significant effects at p<0.05; all models adjusted by age, race, gender.

Discussion

We showed that the pandemic had an immediate effect on substance use symptoms, and youth seeking services during the pandemic period had a higher need for substance use services. These findings are crucial to estimating the scale of service need among youth.

Contrary to our hypothesis, the relationship between the select risk/protective factors and likelihood of service need was relatively homogeneous across the pre- and pandemic-periods. Accordingly, service providers may routinely assess these factors over time to identify opportunities for early intervention of substance use.

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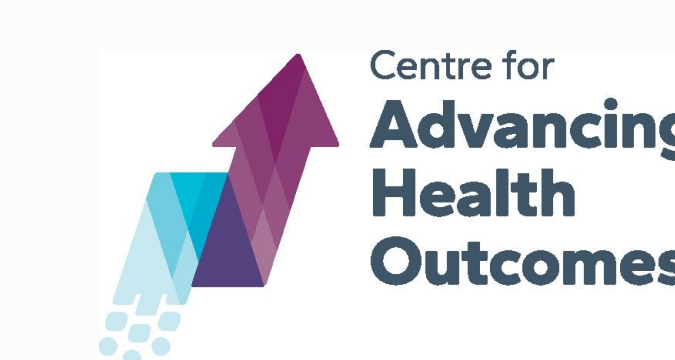
This research takes place on the stolen, traditional, and ancestral lands of the Coast Salish Peoples, including the territories of the x̱m̱əθkw̱əy̱əm (Musqueam), Skwxwú7mesh (Squamish), and seɬiɬwɪtulh (Tsleil-waututh) Nations.

The authors have no conflicts of interest to declare.

Funders



Canadian Institutes of Health Research / Instituts de recherche en santé du Canada



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