

# North-South Differences in the Experiences of HIV Related Stigma for Women Living with HIV in Canada CHIWOS

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## BACKGROUND

In Canada, individuals living in Northern regions report increased barriers to health care along with significantly poorer health outcomes and increased mortality. For people living with HIV, these barriers may be exacerbated by experiences of HIV-related stigma. To further understand the impact of living in Northern regions on shaping social contexts of health and wellbeing among women living with HIV, we assessed geographic differences in HIV-related stigma experiences among women residing in Ontario and British Columbia enrolled in the Canadian HIV Women's Sexual & Reproductive Health Cohort Study (CHIWOS).

## METHODS

CHIWOS' baseline peer-administered questionnaire data was used to compare HIV-related stigma among participants in Northern Canadian regions to participants in Southern regions. Northern regions were defined by healthcare delivery jurisdiction.

The **primary outcome** was the shortened 10-item HIV Stigma Scale (sHSS) score which ranged from 0 to 40, with higher scores indicating greater HIV-related stigma.

Multivariable linear regression assessed the association between region of residence and sHSS. Demographic characteristics were compared between Northern and Southern populations. Covariates that lead to a  $\geq 10\%$  change in the parameter estimate for Northern region were included in the multivariable model.

**Table 1:** Participant characteristics for overall, Northern and Southern participants

Characteristic	Total	Northern	Southern	p value
<b>Shortened HIV Stigma Scale score, mean (SD)*</b>	23.6 (8.0)	25.4 (8.0)	23.4 (7.9)	0.014
Personalized stigma subscale*	7.8 (3.4)	8.0 (3.4)	7.8 (3.4)	0.655
Disclosure subscale*	5.9 (2.1)	5.7 (2.2)	6.0 (2.1)	0.314
Negative self-image subscale**	4.5 (3.4)	6.2 (3.7)	4.3 (3.3)	<0.001
Concern with public attitudes about people with HIV subscale*	5.3 (1.9)	5.5 (1.9)	5.3 (2.0)	0.310
<b>Province, n (%)</b>				0.316
British Columbia	342 (32.8)	39 (37.1)	303 (32.3)	
Ontario	701 (67.2)	66 (62.9)	635 (67.7)	
<b>Age in years, mean (SD)*</b>	42.0 (10.5)	42.6 (10.1)	41.9 (10.6)	0.518
<b>Number of years living with HIV, n (%) (missing = 35)</b>				0.47
<6	278 (27.6)	33 (32.7)	245 (27.0)	
6-14	399 (39.6)	38 (37.6)	361 (39.8)	
>14	331 (32.8)	30 (29.7)	301 (33.2)	
<b>Ethnicity, n (%)</b>				<0.001
Indigenous	303 (29.0)	71 (67.6)	232 (24.7)	
African/Caribbean/Black	246 (23.6)	1 (0.9)	245 (26.1)	
Caucasian	413 (39.6)	30 (28.6)	383 (40.8)	
Other	81 (7.8)	3 (2.9)	78 (8.3)	
<b>Household annual income, n (%) (missing = 34)</b>				0.38
Less than \$20,000	669 (66.3)	73 (70.2)	596 (65.9)	
\$20,000 or higher	340 (33.7)	31 (29.8)	309 (34.1)	
<b>Marijuana history, n (%) (missing = 16)</b>				<0.001
Never	534 (52.0)	30 (28.6)	504 (54.7)	
Ever	493 (48.0)	75 (71.4)	418 (45.3)	
<b>Injection drug use history, n (%) (missing = 21)</b>				<0.001
Never	675 (66.0)	31 (29.5)	644 (70.2)	
Ever	347 (34.0)	74 (70.5)	273 (29.8)	
<b>Hepatitis C history, n (%) (missing = 4)</b>				<0.001
No	699 (67.3)	49 (46.7)	650 (69.6)	
Yes	340 (32.7)	56 (53.3)	284 (30.4)	

Note: SD: standard deviation; variables compared with Chi Square test unless otherwise stated.

\*Continuous normally distributed variable with equal variance compared with pooled Student's t-test

\*\*Continuous normally distributed variable with unequal variance compared with Satterthwaite Student's t-test

**Table 2:** Univariate and multivariable linear regression modelling of shortened HIV Stigma Scale score

Characteristic	Unadjusted Beta coefficient (95% CI)	Standard Error	p value	Adjusted Beta coefficient (95% CI)	Standard Error	p value
<b>Northern region</b>	2.03 (0.41, 3.65)	0.83	0.014	1.97 (0.20, 3.73)	0.90	0.029
<b>Years living with HIV</b>						
<6 years	Reference			Reference		
6-14 years	-0.97 (-2.19, 0.24)	0.62	0.116	-0.04 (-1.32, 1.25)	0.66	0.957
>14 years	-2.18 (-3.45, -0.91)	0.65	<0.001	-0.89 (-2.26, 0.47)	0.69	0.200
<b>Ethnicity</b>						
Indigenous	1.81 (0.62, 3.00)	0.61	0.003	1.20 (-0.13, 2.52)	0.68	0.076
ACB	0.98 (-0.30, 2.24)	0.65	0.131	0.15 (-1.38, 1.70)	0.78	0.849
Other	1.91 (-0.00, 3.82)	0.97	0.050	1.99 (-0.01, 4.00)	1.02	0.051
Caucasian	Reference			Reference		
<b>Household income &lt;20000</b>	-1.83 (-2.87, -0.78)	0.53	<0.001	-1.89 (-3.02, -0.75)	0.58	0.001
<b>History of marijuana use</b>	-0.72 (-1.70, 0.26)	0.50	0.152	-0.53 (-1.73, 0.67)	0.61	0.389
<b>History of IDU</b>						
No use	Reference			Reference		
Former IDU	-1.11 (-2.29, 0.07)	0.60	0.065	-1.16 (-2.99, 0.67)	0.93	0.214
Current IDU	-0.05 (-1.73, 1.62)	0.85	0.949	-0.66 (-2.91, 1.59)	1.14	0.564
<b>History of hepatitis C</b>	-0.87 (-1.92, 0.16)	0.53	0.099	-0.84 (-2.49, 0.81)	0.84	0.318

Note: CI: confidence interval; ACB: African, Caribbean, Black; IDU: injection drug use

## RESULTS

Of 1043 women included in the analysis, 105 (10%) were from Northern regions and 938 (88%) were from Southern regions.

**Mean sHSS scores** were high in Northern regions compared to Southern regions (25.4 vs. 23.4,  $p=0.014$ ).

Adjusted analyses, **Northern region of residence was associated with a 1.97 point increase in sHSS score (95% confidence interval: 0.20, 3.73). Additional independent correlates of high sHSS included annual household income <\$20,000.**

## CONCLUSIONS

This study identified higher rates of perceived HIV-related stigma in Northern regions of Ontario and British Columbia in comparison to Southern regions. This highlights the need for region-specific programs to support people living with HIV especially those living in Northern communities in Ontario and British Columbia.

Importantly, rates of substance use were higher among women living in Northern Ontario and British Columbia. HIV-related stigma can intersect with other stigmas including stigma related to substance use, programs that address HIV-related stigma should also consider the impact of intersectionalities.

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## FOR MORE INFORMATION ON CHIWOS

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