

# Recent Incarceration Correlated with Reduced Access to HIV Prevention in a Longitudinal Study of Sex Workers Who Inject Drugs in a Canadian Urban Centre

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## Background

- Evidence suggests that criminalized approaches to both sex work and drug use intersect with heightened exposure to violence, other criminalized activities, and exposure to correctional facilities among female sex workers who inject drugs (SW-IDU).
- Research consistently demonstrates the critical importance of HIV prevention efforts for individuals with involvement with the criminal justice.
- Given the high vulnerability to HIV among SW-IDU, we sought to investigate the impact of recent incarceration on access to HIV prevention supplies among SW-IDU in Vancouver, Canada.

## Methods

- Longitudinal data (baseline and six bi-annual follow-up questionnaires) were drawn from an ongoing prospective cohort of more than 700 SWs recruited through street, indoor and online outreach across Metropolitan Vancouver (“An Evaluation of Sex Workers’ Health Access” [AESHA]) between 01/2010–08/2013.
- To account for repeated measures, logistic regression using generalized estimated equations (GEE) with a logit link for dichotomous variables were performed
- To model the independent effect of exposure to recent incarceration (e.g. jail/detention/prison in the last 6 months) on difficulty accessing sterile syringes and male condoms in the same period among FSW-IDU, the multivariable confounding model was constructed using a variable selection process described by Maldonado and Greenland.<sup>1</sup>

## Results

- Of 720 female sex workers included in this analysis, 338 (46.9%) reported injection drug use in the last 6 months (FSW-IDU) over the 44-month study period, contributing 1047 observations.
- In bivariate analysis, there was no statistically significant association between recent incarceration and difficulty accessing condoms (OR=1.48 (0.88–2.47)). Therefore, no further analysis was undertaken for this outcome.

Table 1. Baseline characteristics of FSW-IDU, Vancouver, Canada (01/2010 - 08/2013)

Characteristic	n (%)
<b>Outcomes of interest</b>	
Difficulty accessing sterile syringes*	99 (29.3)
Difficulty accessing condoms*	68 (20.1)
<b>Main explanatory variable</b>	
Recent incarceration*	72 (21.3)
<b>Individual covariates</b>	
Age, median (IQR)	33 (27-41)
Sexual/gender minority	121 (35.8)
Aboriginal ancestry	160 (47.3)
HIV-positive	68 (20.1)
HCV-positive	263 (77.8)
Non-injection drug use*	322 (95.3)
<b>Contextual covariates</b>	
Unstable housing*	315 (93.2)
Primary place of servicing clients*	
Formal sex work establishment (“in-call”)	16 (4.7)
Informal indoor venue (e.g. bar, hotel)	119 (35.2)
Outdoor/public space	195 (57.7)
Physical/ sexual violence by clients*	111 (32.8)
Threatened by community residents or businesses*	74 (21.9)
Police harassment without arrest*	163 (48.2)

\* Time-updated variable using last 6 months as a reference point

Table 2. Bivariate GEE logistic regression of factors associated with difficulty accessing syringes among FSW-IDU

Characteristic	Difficulty accessing syringes
	Odds Ratio (95% CI)
<b>Recent incarceration*</b>	
(yes vs. no)	<b>1.89 (1.18 – 3.03)</b>
<b>Age ≤33</b>	
(yes vs. no)	1.34 (0.87 – 2.06)
<b>Sexual/gender minority</b>	
(yes vs. no)	1.33 (0.85 – 2.09)
<b>Aboriginal ancestry†</b>	
(yes vs. no)	<b>2.00 (1.50 – 3.00)</b>
<b>HIV status*</b>	
(positive vs. negative)	0.62 (0.31 – 1.21)
<b>HCV status*</b>	
(positive vs. negative)	0.88 (0.46 – 1.65)
<b>Non injection drug use*†</b>	
(yes vs. no)	2.93 (0.97 – 8.81)
<b>Unstable housing*</b>	
(yes vs. no)	1.65 (0.70 – 3.89)
<b>Physical/sexual violence by clients*†</b>	
(yes vs. no)	1.49 (0.98 – 2.24)
<b>Threatened by community residents/business*†</b>	
(yes vs. no)	<b>2.07 (1.23 – 3.49)</b>
<b>Primary place of solicitation*</b> (Ref: formal sex work establishment)	
Outdoor	2.01 (0.52 – 7.79)
Informal indoor	1.22 (0.31 – 4.80)
<b>Police harassment without arrest*†</b>	
(yes vs. no)	<b>1.75 (1.21 – 2.55)</b>

\* Time-updated variable using last 6 months as a reference point  
† p-value <0.20, and considered as potential confounder in the multivariable model selection process.

Table 3. Confounder GEE model investigating the independent effect of recent incarceration on difficulty accessing syringes

	Difficulty accessing syringes
	Adjusted Odds Ratio (95% CI)†
<b>Recent incarceration*</b>	1.65 (1.02–2.66)

\* Self-report incarceration in the last 6 months.  
† Adjusted for police harassment without arrest, time-updated to refer to the past 6 months. Aboriginal ancestry, non-injection drug use, client perpetrated violence, and threatened by community residents were included in the full model, but removed in the backwards selection approach.

## Conclusions

- We observed alarming high levels of incarceration among FSW-IDU in Vancouver.
- Recent incarceration had an independent effect on reduced access to sterile syringes.
- Despite efforts to reduce barriers, these findings suggest that women may have limited access to harm reduction supplies while in prison, or transition periods during entry or release from jail detention or prison.
- These findings further support national and international calls for the decriminalization of sex work and drug use in order to facilitate access to safer harm reduction supplies and reduce vulnerability to HIV

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## References

1- Maldonado G, Greenland S. Simulation study of confounder-selection strategies. Am J Epidemiol 1993; 138(11): 923-36.

