

# Social Support is Associated with Lower Likelihood of HIV Treatment Interruptions in British Columbia, Canada

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## BACKGROUND

- In the age of modern HIV treatment there is a need to examine aspects of social and emotional health and well-being in people living with HIV (PLWH) as they continue to live with the disease.
- Research has demonstrated the importance of social support for enhancing psychosocial wellbeing within this population. Yet, further research is needed to understand the role of social connectivity in improving social outcomes.

**Research Question: What is the relationship between social support and HIV treatment interruptions in PLWH in British Columbia (BC)?**

## METHODS

We used the baseline questionnaire data from the **Stop HIV/AIDS Program Evaluation Study (SHAPE)**, a longitudinal cohort study of PLWH, aged 19 or older in BC, Canada.

## INCLUSION CRITERIA:

- On antiretroviral therapy (ART) at enrolment in SHAPE and  $\geq 1$  year of follow-up.

## MEASURES:

- **Exposure variable** – Social support was self-reported using the 19-item *Medical Outcomes Study Social Support Survey (MOS-SSS)*<sup>1</sup>; score range of 0-100.
- **Outcome variable** – *HIV Treatment Interruptions (TIs)*, defined as  $\geq 90$  days off ART based on prescription refill data obtained through linkage to the Provincial Drug Treatment Program (DTP).
- **Confounding variables** – All candidate confounders were self-reported at baseline interview, and were theorized to be independently associated with outcome and exposure variables<sup>2-3</sup>.

## STATISTICAL ANALYSIS:

- Multivariable logistic regression quantified the relationship between MOS-SSS scores and TIs while adjusting for confounding variables.
- A change-in-estimates approach determined the final confounding variables in the adjusted model.

## RESULTS

- Among 470 SHAPE participants who met the inclusion criteria, median MOS-SSS score was 64.5 (Q1-Q3: 43.4-84.2).
- For the 50 participants who experienced  $\geq 1$  TIs, median MOS-SSS score was 50 (Q1-Q3: 38.2-71.1), compared to a median score of 65.8 (Q1-Q3: 46.1-85.5) among those who did not experience any TIs.

**TABLE 1:** Baseline characteristics of SHAPE participants dichotomized by TI occurrence during follow-up.

Variables	Total N=470	Treatment Yes N=50	Interruption(s) No N=420	P-value
Gender				<b>0.006</b>
Male	358 (76%)	29 (58%)	329 (78%)	
Female	101 (23%)	19 (38%)	82 (20%)	
Other	11 (2%)	2 (4%)	9 (2%)	
Age				<b>0.001</b>
<30	17 (4%)	1 (2%)	16 (4%)	
30-39	76 (16%)	18 (36%)	58 (14%)	
40-49	132 (28%)	10 (20%)	122 (29%)	
$\geq 50$	245 (52%)	21 (42%)	224 (53%)	
Indigenous ethnicity (self-reported) <sup>1</sup>	106 (23%)	21 (42%)	85 (20%)	<b>0.001</b>
Employment status				<b>0.016</b>
Employed	172 (37%)	12 (24%)	160 (38%)	
Unemployed	185 (39%)	29 (58%)	156 (37%)	
Other	113 (24%)	9 (18%)	104 (25%)	
HIV risk group				0.074
Men who have sex with men (MSM) only	269 (57%)	21 (42%)	248 (59%)	
MSM and injection drug use (IDU)	26 (6%)	3 (6%)	23 (5%)	
IDU only	85 (18%)	15 (30%)	70 (17%)	
Neither MSM nor IDU	90 (19%)	11 (22%)	79 (19%)	
IDU history				<b>0.001</b>
Never	210 (45%)	11 (22%)	199 (47%)	
Yes, but not in the last year	102 (22%)	16 (32%)	86 (21%)	
Yes, in the last year	84 (18%)	16 (32%)	68 (16%)	
Prefer not to answer	74 (16%)	7 (14%)	67 (16%)	
In a relationship	165 (35%)	13 (26%)	152 (36%)	0.154
Sexually active in the last year	297 (63%)	31 (62%)	266 (63%)	<b>0.013</b>
Prefer not to answer	15 (3%)	5 (10%)	10 (2%)	
History of homelessness				<b>0.001</b>
Never	254 (54%)	15 (30%)	239 (57%)	
Yes, but not in the last year	155 (33%)	23 (46%)	132 (31%)	
Currently homeless or in the last year	61 (13%)	12 (24%)	49 (12%)	
Social support (MOS-SSS score)	64.5 (43.4, 84.2)	50 (38.2, 71.1)	65.8 (46.1, 85.5)	<b>0.012</b>

<sup>1</sup>The term 'Indigenous' is used here to describe participants who self-identified as Indigenous in the baseline survey instrument. 'Indigenous' is used to collectively describe the Indigenous peoples of Canada, inclusive of those who identify as 'Aboriginal' or First Nations, Métis and Inuit. This term is used while acknowledging the diversity of cultures, languages and traditions that exist among Indigenous Canadians.

**TABLE 2:** Multivariable logistic regression quantifying the relationship between social support (MOS-SSS score) and TIs among PLWH

Variables	Multivariable logistic regression Adjusted odds ratios (aOR) [95% confidence interval(CI)]
<b>Exposure</b>	
Social support (MOS-SSS score)	0.84 per 10-unit increase (0.75, 0.95)
<b>Confounders</b>	
Gender	Referent
Male	Referent
Female	1.80 (0.87, 3.72)
Other	2.35 (0.43, 12.75)
Indigenous ethnicity (self-reported)	2.19 (1.09, 4.40)
IDU history	Referent
Never	Referent
Yes, but not in the last year	2.82 (1.19, 6.69)
Yes, in the last year	2.77 (1.15, 6.65)
Prefer not to answer	1.53 (0.55, 4.29)
Sexually active in the last year	2.04 (0.99, 4.21)
Prefer not to answer	4.84 (1.34, 17.46)

## DISCUSSION AND CONCLUSIONS

- In this setting, social support is negatively associated with TIs (aOR= 0.842 per 10-unit increase, (95% CI= 0.75, 0.95).
- Future research should identify and evaluate interventions that foster social support for promoting optimal ART adherence.
- Additional research may examine social support success factors among specific population groups of PLWH.

**References:** 1) Sherbourne and Stewart 1991, *Soc Sci Med* 32:6 2) Samji 2015, *HIV Med* 16:2 3) Hawthorne 2008, *Soc Psychiatry Psych Epi* 43:2

**Acknowledgements:** We gratefully acknowledge all the participants who allowed their information to be part of the SHAPE study; the SHAPE team of peer research associated, co-investigators and collaborators; the BC Centre for Excellence in HIV/AIDS for operations and support; all partnering organizations that assisted recruitment and data collection; and the BC Ministry of Health for funding this project. **Conflicts of Interest:** None to declare.



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