

The Role of Stable Housing and Food Security in Treatment Success Among People on HAART

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Background

- The HIV epidemic in Canada is increasingly affecting marginalised groups. While highly active antiretroviral therapy (HAART) is freely available to those eligible, socioeconomic barriers too frequently prevent marginalised individuals from accessing therapy.
- There are known links between the physical and social attributes of neighbourhoods, perception of neighbourhood attributes, health status and health-related risk behaviours.
- The objective of this study was to determine the impact of stable housing, food security — two critical neighbourhood issues in British Columbia — along with other sociodemographic and clinical variables, on perception of neighbourhood among people receiving HAART.

Methods

- The Longitudinal Investigations into Supportive and Ancillary health services (LISA) cohort is a prospective study of HIV+ persons on antiretroviral (ARV) care. Participants were ≥18 years of age and ARV-naïve before initiating HAART.
- An interview-administered survey collected information on stable housing, food security, neighbourhood perception, sociodemographic, clinical, quality of life and other variables.
- Neighbourhood perception was evaluated using previously defined scales (Ellaway, et al., 2001, Urban Studies, 38:2299-2316). Three categories considered were perception of (1) neighbourhood problems, (2) neighbourhood cohesion and (3) relative standard of living within the neighbourhood.
- In univariable analysis, the Wilcoxon Rank-Sum Test, the Fisher Exact Test and the Mean Score Test were used to compare differences in neighbourhood perception. Variables found to be bivariately associated with food security and/or stable housing were included in multivariable regression model, using a confounder selection process (Maldonado And Greenland, 1993, Am. J. Epidemiol, 138:923-36)

Results

- Of the 457 participants, 25% were female, 33% were Aboriginal, 35% were gay, lesbian, bisexual or transgender, 29% were food secure, 65% had stable housing, 58% completed high school and 23% were employed.
- Univariable analyses shown in Table 1 reveal strong associations between perception of neighbourhood problems and cohesion, and almost all explanatory variables but few associations for relative standard of living.
- Table 2 shows results of multivariable confounder analyses. Having food security and stable housing decreased perception of neighbourhood problems by 9% and 11%, respectively, while increasing perceptions of cohesion by 6%.
- Other variables in the model were found to be confounders.
- We also observed an increased proportion of those without stable housing considering themselves to be better off than others in the neighbourhood. Although not significant, lack of food security showed an opposite tendency.

Conclusions

- This study confirms that food security and stable housing are critical issues for many individuals on HAART in British Columbia.
- While controlling for common confounders, having stable housing and food security were associated with how individuals on HAART perceive their neighbourhood.
- Lack of food security and stable housing were associated with poorer clinical outcomes in terms of CD4 count and/or viral load suppression.
- Findings strongly imply that targeted improvements in living conditions — with provisions of stable housing and food security as priority areas — are likely to lead to improvements in treatment outcomes for people on HAART.
- Role of having stable but inadequate housing may be an important issue for further consideration in terms of HAART success.
- Drug treatment programs should be developed in context of the serious socioeconomic issues faced by many people in need of therapy.

Table 1: Univariable analysis of neighbourhood perceptions and sociodemographic parameters among people on HAART in British Columbia (n=457)

Variable	Neighbourhood problems		Neighbourhood cohesion		Relative standard of living within neighbourhood		
	n	Mean (SE) ^a	n	Mean (SE) ^b	Better n (%)	Off Same n (%)	Worse Off n (%)
Food security							
No	324	41 (1.4) **	320	55 (0.9) **	82 (26)	157 (47)	87 (27) **
Yes	133	23 (1.9)	132	64 (1.5)	47 (36)	66 (50)	19 (14)
Stable housing							
No	155	49 (2.2) **	155	52 (1.3) **	51 (33)	75 (48)	30 (19)
Yes	297	29 (1.3)	297	60 (1.0)	77 (26)	141 (48)	176 (26)
Gender							
Female	115	43 (2.6) **	114	54 (1.7) *	34 (30)	49 (43)	30 (22.5)
Male	342	34 (1.4)	338	59 (0.9)	95 (28)	167 (49)	76 (22.5)
Aboriginal ethnicity							
No	307	34 (1.4) **	303	58 (1.0)	89 (30)	135 (44)	78 (26)
Yes	150	42 (2.2)	149	53 (1.4)	40 (27)	81 (54)	28 (19)
Currently employed							
No	351	39 (1.4) **	346	57 (0.9) *	100 (29)	162 (46)	86 (25)
Yes	106	27 (2.1)	106	60 (1.6)	29 (28)	54 (52)	20 (20)
Completed high school							
No	194	36 (1.9) *	192	54 (1.2) **	56 (29)	87 (45)	50 (26)
Yes	263	34 (1.6)	260	60 (1.1)	73 (28)	129 (50)	56 (22)
Income < \$15,000							
No	160	29 (2.0) **	160	61 (1.4) *	48 (31)	72 (46)	37 (24)
Yes	294	40 (1.5)	289	55 (1.0)	80 (28)	142 (49)	69 (24)
On illicit drugs							
No	241	26 (1.4) **	240	60 (1.2) **	66 (28)	113 (48)	58 (25)
Yes	216	47 (1.8)	212	54 (1.0)	63 (30)	103 (48)	48 (22)
Depressive symptoms							
No	196	27 (1.7) **	222	61 (1.1) **	62 (32)	97 (51)	33 (17) **
Yes	261	43 (1.6)	283	54 (1.0)	67 (26)	119 (46)	73 (28)
CD4 > 200							
No	132	43 (2.3) **	129	56 (1.4)	32 (31)	45 (43)	28 (27)
Yes	325	33 (1.4)	323	58 (1.0)	89 (28)	160 (50)	72 (22)
Suppressed viral load							
No	135	45 (2.2) **	132	55 (1.6) *	35 (26)	67 (50)	31 (23)
Yes	307	33 (1.4)	305	59 (1.0)	90 (30)	143 (47)	70 (23)

*p = 0.001 * p = 0.001- 0.05; ** p < 0.001; SE = standard error; ^a Higher score means more problems; ^b Higher score means better cohesion.

Table 2: Multivariable confounder model for the association between neighbourhood perception variables and food security and stable housing

Variable	Neighbourhood problems	Neighbourhood cohesion	Relative standard of living
	Coefficient (95% CI)	Coefficient (95% CI)	Adjusted OR (95% CI)
Food security	-8.9 (3.0) *	6.1 (2.2) *	1.31 (0.81-2.12)
Stable housing	-11.0 (2.7) **	5.9 (1.8) **	0.62 (0.41-0.94)*
Gender	-5.95 (2.6) *	5.1 (1.9) **	-
Currently employed	-	-2.9 (2.1)	-
Completed high school	1.3 (2.4)	3.5 (1.7) *	-
On illicit drugs	13.4 (2.5) **	-	-
Depressive symptoms	5.0 (2.5) **	-	0.84 (0.54-1.32)
QoL – Financial worries	0.44 (0.51)	0.52 (0.36)	1.20 (1.10-1.32)**
QoL – Provider trust	-	1.59 (0.50) **	-
QoL – Overall function	-1.8 (0.6) **	-	0.93 (0.84-1.03)
QoL – Life satisfaction	-	-	1.13 (1.01-1.27)*

* p = 0.001- 0.05; ** p < 0.001; SE = standard error; CI = confidence interval; QoL = quality of life