

Upstream determinants of health and housing are major contributors to health-related quality of life in HIV infection: Findings from the Positive Spaces, Healthy Places study

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Background

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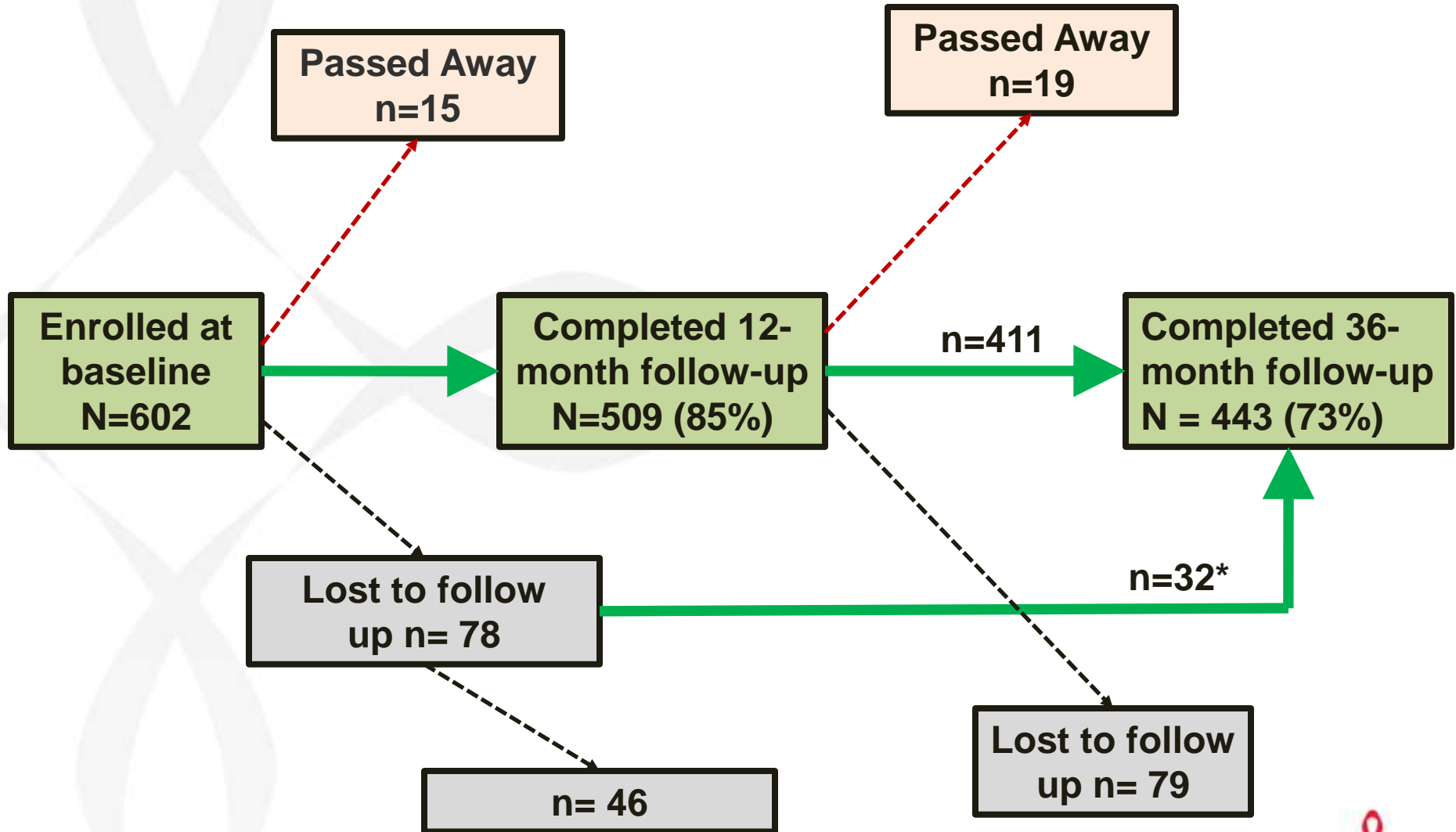
- Research in the general population links housing and health outcomes ([Dunn & Hayes, 2000](#); [Dunn & Hayes, 1999](#))
- In the context of HIV, housing is linked with both risk of HIV infection ([Aidala et al, 2005](#); [Kipke et al, 2007](#); [Wenzel et al, 2007](#)) and health outcomes ([Leaver et al, 2007](#))
- Cross-sectional data from the **Positive Spaces, Healthy Places** confirm the association between housing factors and health outcomes
- We were interested to examine the longitudinal relationship between upstream (e.g., employment, housing) and down stream determinants (e.g., depression, social support) of health and health outcomes

Methods

Methods (1)

- We used data from PSHP study collected at three points in time:
 - Baseline (2006) – 602 persons
 - 12-month follow-up (2007) – 509 persons
 - 36-month follow-up (2009) – 443 persons
- We used summary measures for physical health quality of life (PHS) and mental health quality of life (MHS) as health outcome measures
 - Total number of observations:
 - 1,097 observations for physical health quality of life (PHS)
 - 1,154 observations for mental health quality of life (MHS)

PSHP study follow-up



* 32 Participants lost at 12-month follow-up were found and completed the 36-month follow-up

Methods (2)

- We used generalized estimating equations (GEE) method to identify determinants of health (DOH) independently associated with physical health summary (PHS) and mental health summary (MHS)
- Bivariable GEE was used, first, to identify factors individually associated with PHS and MHS
- Variables significantly ($p < 0.05$) associated with PHS and MHS in bivariable GEE were, then, entered into the multivariable GEE models
- Focus of analyses were to determine the association longitudinally (over 3 years period)

Participants

Baseline Characteristics

	n (%)
Sociodemographic	
Age (mean)	43.1 years
Male	454 (75%)
Gay, lesbian, or bisexual	384 (64%)
Caucasian	441 (73%)
Aboriginal	79 (13%)
Education (\geq high school)	469 (78%)
Employed	121 (20%)
Monthly Income (\leq CAD\$1,500)	418 (69%)
HIV markers	
Time since HIV diagnosis (mean)	11.2 years
On antiretroviral treatment	446 (74%)
Diagnosed with AIDS	298 (50%)

Baseline Characteristics (2)

	n (%)
Housing	
Homeless/live in inadequate housing [†]	34 (6%)
Ever been homeless	254 (42%)
Ever experienced housing discrimination	211 (35%)
Moved ≥ 2 times in the past 12 months	73 (12%)
Paying for housing is very difficult/fairly difficult	276 (46%)
Incarceration and substance use	
Ever incarcerated	189 (31%)
Used non-medicinal drugs [‡] in the past 12 months	287 (48%)
Harmful drug use (DAST-20 ≥ 6)	161 (27%)
Had alcoholic drinks in the past 12 months	435 (72%)
Harmful alcohol use (AUDIT-10 ≥ 8)	123 (20%)

[†] Includes homeless (i.e., living on the street, parks, outdoor) or inadequately housed (i.e., living in motels, shelters, couch-surfing)

[‡] Use of prescribed or over the counter drugs in excess of the directions and any non-medical use of drugs.

Findings

Significant independent predictors of physical health QOL (PHS)

Determinants of health	B*	95% CI	P
Age (yrs)	-1.36	(-1.78, -0.93)	<0.01
Employment (employed)	0.91	(0.61, 1.22)	<0.01
CD4 count (cells/ml)	0.77	(0.47, 1.08)	<0.01
AIDS defining condition	-0.58	(-0.95, -0.22)	<0.01
Live in GTA	0.59	(0.24, 0.93)	<0.01
Housing Discrimination	-0.42	(-0.73, -0.12)	<0.01
Paying rent is very difficult/difficult	-0.56	(-0.84, -0.27)	<0.01
Home is at a good location	0.12	(-0.21, 0.45)	0.46
Worry about being forced to move	-0.25	(-0.53, 0.03)	0.08
I belong in my neighbourhood	-0.07	(-0.39, 0.26)	0.68
Harmful Drug Use	-0.24	(-0.56, 0.09)	0.15
Significant Depression	-1.43	(-1.71, -1.14)	<0.01
Social Support	0.49	(0.18, 0.80)	<0.01

* Estimates are adjusted for sexual orientation, education, income, ARV, history of homelessness, rent and rental support, moving in the past year, and alcohol use

Significant independent predictors of mental health QOL (MHS)

Determinants of health	B*	95% CI	P
Gender (male)	0.69	(0.17, 1.21)	<0.01
Employment (employed)	0.91	(0.58, 1.24)	<0.01
CD4 count (cells/ml)	0.49	(0.15, 0.81)	<0.01
AIDS defining condition	-0.33	(-0.71, 0.06)	0.10
Live in GTA	0.21	(-0.17, 0.58)	0.28
Housing Discrimination	-0.33	(-0.67, 0.00)	0.05
Paying rent is very difficult/difficult	-0.52	(-0.84, -0.21)	<0.01
Home is at a good location	0.40	(0.04, 0.76)	0.03
Worry about being forced to move	-0.80	(-1.11, -0.50)	<0.01
I belong in my neighbourhood	0.50	(0.14, 0.86)	<0.01
Harmful Drug Use	-0.62	(-0.97, -0.27)	<0.01
Harmful Alcohol Use	-0.34	(-0.67, -0.01)	0.047
Social Support	2.02	(1.68, 2.36)	<0.01

* Estimates are adjusted for sexual orientation, education, income, ARV, history of homelessness, rent and rental support, moving in the past year, and alcohol use.

Factors associated with physical health quality of life (PHS)

Poor health

- Older age
- Lower CD4 count
- Diagnosis of AIDS
- Unemployment
- **Difficulty paying for housing**
- **Housing-related discrimination**
- Depression

Better health

- **Living in Greater Toronto Area (GTA)**
- Higher social support

Factors associated with mental health quality of life (MHS)

Poor health

- **Difficulty paying for housing**
- **Worrying about being forced to move out**
- Harmful alcohol use
- Harmful substance use

Better health

- Being male
- Working for pay
- Higher CD4 count
- **Sense of belonging in a neighbourhood**
- **Location of housing**
- Higher social support

Implications for Policy and Practice

Conclusions and Implications

- Upstream determinants of health such as unemployment and housing characteristics contribute to HRQOL
 - Housing variables, particularly housing affordability, sense of belonging, location of residence, and housing-related discrimination are strongly associated with physical and mental health
- Downstream determinants of health such as social support depression play a significant role in influencing HRQOL
- Interventions that can address unemployment and housing issues can play a vital role in improving HRQOL of persons living with HIV
- Support programs targeted in increasing social support and reducing stigma and discrimination can improve health outcomes of persons living with HIV

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