

Upstream Determinants of Health and Housing are Major Contributors to Health-Related Quality of Life in HIV Infection

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Introduction

Housing is a determinant of health among persons living with HIV. People with inadequate or unstable housing report poorer health outcomes – including lower CD4 count, higher viral load, lower adherence to antiretroviral treatment, higher mortality, and poor physical and mental health-related quality of life (HRQOL) – than those who are adequately housed.

With HAART, people with HIV are now living longer so interventions should focus on improving their quality of life.

This study identifies housing factors associated with physical and mental HRQOL to guide interventions.

Methods

The study analyzed data from the Positive Spaces, Healthy Places (PSHP) study, a closed cohort of 602 adults (see table 1 for key characteristics) who:

- were recruited in 2006 through local AIDS service organizations (ASOs)
- are 18 years or older
- are HIV-positive
- were residents of Ontario, and
- provided informed consent.

Participants were interviewed face-to-face by peer research assistants. Data was collected at three points in time -- 2006, 2007 and 2009 -- using a quantitative questionnaire that consisted of several standard instruments such as:

- the Medical Outcome Study – HIV Health Survey (MOS-HIV)
- the Center for Epidemiologic Studies Depression Scale (CES-D)
- the Alcohol Use Disorder Identification Test (AUDIT)
- the Drug Abuse Screening Test (DAST-20)
- the Medical Outcome Study Social Support Survey (MOS-SS).

Data from all three observation points (i.e., 1,097 observations for PHS and 1,154 observations for MHS) were analyzed to identify determinants of health associated with health-related quality of life.

Table 1. Characteristics of Participants (N = 602)

Characteristics	N or Mean	% or SD
Sociodemographic		
Age (years)	43.1	8.6
Gender (male)	454	75%
Level of Education (< high school diploma)	133	22%
Employment (unemployed)	481	80%
Health Status and Addiction		
Time Since HIV Diagnosis (years)	11.2	6.5
Highest CD4 Count (cells/ml)	515	317
Diagnosed with AIDS Defining Condition (yes)	298	50%
Housing-Related Characteristics		
Live in the Greater Toronto Area (yes)	374	62%
Live in Unstable Housing (yes)	34	6%
Receive Rent Support of Subsidy (yes)	370	61%
Housing-Related Discrimination (yes)	211	35%
Satisfied with Residence as a Whole (yes)	358	60%
Health-related Quality of Life (HRQOL)		
MOS-HIV Physical Health Summary (PHS)	42.6	10.8
MOS-HIV Mental Health Summary (MHS)	43.3	11.9

Physical and mental HRQOL were measured using the Physical Health Summary (PHS) and Mental Health Summary (MHS) scores of the MOS-HIV Health Survey.

Bivariate linear generalized estimating equation (GEE) models were fitted to identify factors individually associated with PHS and MHS.

Factors significantly associated with PHS and MHS in bivariate analyses were entered in the multivariable GEE models

Key Findings

Our analyses showed that upstream determinants of health (i.e., employment) and housing factors (i.e., affordability, discrimination, satisfaction with residence and neighbourhood) were associated with health-related quality of life.

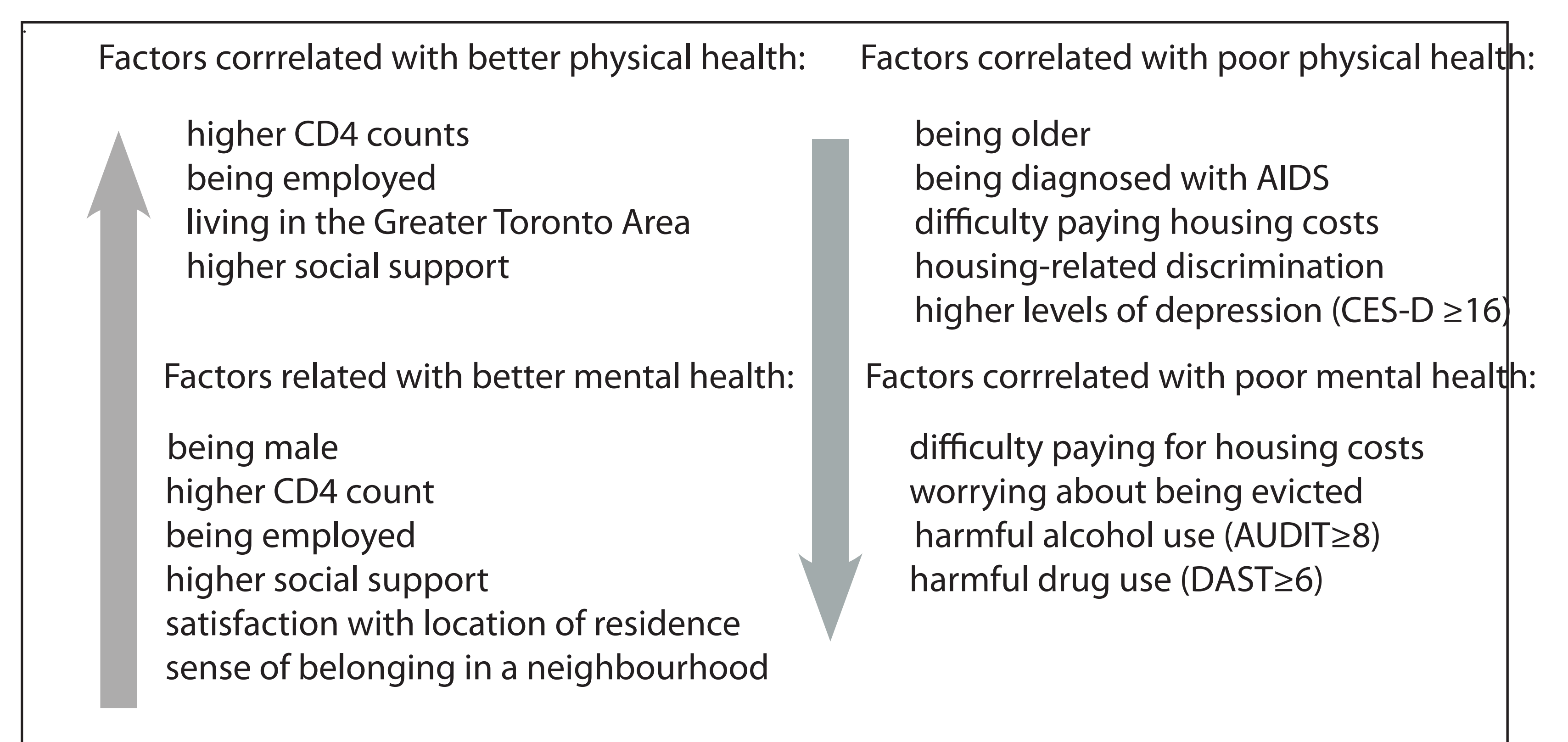


Table 2. Results of linear Generalized Estimating Equations (GEE) model with Physical Health Summary (PHS) and Mental Health Summary (MHS) as dependent Variables

Variable	Physical Health Summary (# of obs = 1,097)		Mental Health Summary (# of obs = 1,154)	
	b	p	b	p
Intercept	51.16	<0.001	30.59	<0.001
Age (years)	1.36	<0.001	0.69	0.009
Gender (male)	0.33	0.578	-0.10	0.653
Level of Education (< high school diploma)	-0.06	0.769	0.91	<0.001
Employment (employed)	0.91	<0.001	0.08	0.600
Monthly Income (\$)	0.08	0.571	0.49	0.0049
CD4 Count (cells/ml)	0.77	<0.001	-0.33	0.096
AIDS defining condition (present)	-0.58	0.002	0.19	0.292
Receiving Antiretroviral Treatment (yes)	0.33	0.053	0.32	0.128
Time Since HIV Diagnosis (years)	-0.03	0.875	-0.33	0.051
Housing-related Discrimination (yes)	-0.42	0.007	0.21	0.279
Live in the Greater Toronto Area (yes)	0.59	<0.001	-0.21	0.406
Live in Unstable Housing (yes) ^a	-	-	-0.17	0.281
Receive Rent Support/Subsidy ^b	-0.23	0.096	-0.01	0.967
History of Homelessness (yes)	-0.19	0.268	0.28	0.093
Rent is > 30% of income (yes)	0.23	0.128	-0.52	0.001
Paying Rent is Very Difficult/Difficult (yes)	-0.56	<0.001	-0.09	0.557
Moved in the Past Year (yes)	-	-	0.40	0.031
Home is at a Good Location (yes)	0.12	0.465	-0.80	<0.001
Worry About Being Forced to Move Out (yes)	-0.25	0.082	0.50	0.006
Feel That I Belong in My Neighbourhood (yes)	-0.07	0.675	0.24	0.170
Satisfied with Residence as a Whole (yes)	0.16	0.310	-0.62	0.001
Harmful Drug Use (yes) ^c	-0.24	0.153	-0.34	0.047
Harmful Alcohol Use (yes) ^d	-	-	0.07	0.737
History of Incarceration (yes)	-0.08	0.673	-	-
Significant Depression (yes) ^e	-1.43	<0.001	2.02	<0.001
Social Support	0.49	0.002	-	-

^a Includes those living in motels, shelters, couch-surfing, streets, parks, etc. ^b Includes Rent-Geared-to-Income (RGI) housing or cash subsidy. ^c DAST ≥ 6. ^d AUDIT ≥ 8. ^e CESD ≥ 16. Note: Two separate regression models were fitted for PHS and MHS.

Implications for Policy and Practice

Housing-related factors – such as housing affordability, perceived housing-related discrimination, location of residence, and sense of belonging in a neighbourhood -- affect physical and mental health.

To improve quality of life, we must develop interventions that make housing more affordable for people with HIV and enable them to live in places where they are satisfied with their residence and feel part of their community.

Employment, depression and social support also affect both physical and mental health. Programs and services for people with HIV should provide more job opportunities and more social support. They should also help people recognize and manage depression.

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