

Indigenous and non-Indigenous Respondents to the *Health and Housing in Transition (HHiT) Study: An Intersectional Approach*

Fran Klodawsky, Carleton University

Rebecca Cherner, University of Ottawa

Tim Aubry, University of Ottawa

Susan Farrell, Royal Ottawa Health Care Group and University of Ottawa

Julie Parrell, Centre for Health Evaluation and Outcome Sciences

Barbara A. Smith, The University of British Columbia

Introduction

As noted in this section's opening essay, scholarship has begun to identify Indigenous¹-specific pathways and experiences in relation to housing and homelessness in urban centres (Belanger, Weasel Head, and Awosoga 2013; Belanger, Weasel Head, & Awosoga 2012; Belanger, Weasel Head, & Awosoga 2011; Menzies 2009; Peters & Robillard 2009; Peters 2012). Belanger et al. (2011) drew on Statistics Canada data to examine "the current state of urban Aboriginal housing in Canada" (p. iv), shedding new light on the extent to which home ownership had impacts on the extent of core housing need among various Aboriginal groups. They also explored gaps between Aboriginal and non-Aboriginal households with the former reporting levels of core housing need that were significantly higher than the latter (20.4% vs 12.7%)². In another recent publication, they estimated that "more than one in fifteen urban Aboriginal people are homeless, compared to one out of 128 non-Native Canadians... [and that] urban Aboriginal people are more than eight times likely to be or become homeless than non-Native urban individuals" (Belanger et al. 2013: 14). They also acknowledged the particular and challenging circumstances faced by many Aboriginal women and girls who they recognize as having been particularly "disadvantaged by social factors and structural inequalities" (p. 20).

¹ In this article, the term Indigenous is used to refer to the HHiT study participants who self-identified as Aboriginal in response to the question "To which racial or cultural group(s) do you belong to or identify with?" We have chosen this convention (the term Indigenous) in the context of the terminology favoured by the editors. The term Aboriginal is used when this terminology is used in the study under discussion.

² "A household is said to be in core housing need if its housing falls below at least one of the adequacy, affordability or suitability standards and it would have to spend 30% or more of its total before-tax income to pay the medium rent of alternative local housing that is acceptable" (Canada Housing and Mortgage Corporation 2014).

The recent Homeless Hub publication, *The State of Homelessness in Canada in 2013* (Gaetz et al. 2013), has highlighted the path breaking research of such scholars, including “the historical, social and economic context in which [Aboriginal homelessness] has emerged” (Gaetz et al.: 3). Importantly, the report reinforced Belanger et al.’s (2011) findings: as well as reporting the overrepresentation of homeless Aboriginal peoples in urban areas, the document recognized that addressing the “historical, experiential and cultural differences, as well as experiences of colonization and racism” is fundamental, and that “Aboriginal peoples must be part of any solutions to homelessness” (Gaetz et al. 2013: 7).

The objective of this paper is to contribute to and provide further insights about the specific health and housing situations of Indigenous peoples who have been homeless or vulnerably housed, in comparison to non-Indigenous Canadians in similar circumstances. Our goal is to assess whether quantitative survey data about a “general” representative sample of homeless and vulnerably housed adults in three Canadian cities is able to provide insights into the following question: among an already marginalized population of homeless and vulnerably housed adults, does Indigenous identity impact health and housing outcomes? We do so while fully acknowledging that “[t]he urban Aboriginal homeless experience differs from that of mainstream Canadians due to a convoluted policy environment predicated on assumptions of cultural inferiority and forced societal participation... An additional aggravating factor is the connection... to colonization” (Belanger et al., 2013: 15).

Exploring the links between complex social identities, health and homelessness has been inspired by recent discussions about how best to incorporate intersectionality into empirical studies (Scott and Siltanen 2012; Veenstra 2013; Veenstra 2011). Although Canadian researchers have greatly expanded the array of topics and groups under their purview, only a few studies have attempted to examine social identities in ways that reflect peoples’ complex realities and acknowledge that gender, race/ethnicity, class and so on, are not additive or independent characteristics but integrally implicated in each person’s life chances and circumstances. Intersectionality is a concept that promotes such recognition and encourages analysis that addresses social inequalities by looking beyond broad and often misleading categories. As Hankivsky et al. (2010) have noted in the area of women and health:

...the traditional foci of Canadian health research on women tends to essentialize the category of women (that is, assumes that all women, regardless of age, cultural background, geographic location, socio-economic status, religion, sexual orientation and other categories

of difference), share exactly the same experiences, views, and priorities, and further, gives too much primacy to gender over other key determinants and does not adequately address the interactions among all determinants of health. Consequently, the issues and priorities of many vulnerable women, including members of ethnic, racial and linguistic minorities, Aboriginal women, low-income women, lesbians, and women with disabilities are usually excluded from mainstream women's health research. (p.1)

The concept of intersectionality was articulated in the 1990s by Kimberle Crenshaw in the context of black women's experiences of both racism and sexism in the American legal system (1995). Since that time, its theoretical and methodological implications have been the focus of growing interest among feminist and other social science scholars. Although the majority of intersectionality analysis has been in the context of relatively small-scale, in-depth qualitative studies (Scott and Siltanen 2012), scholarship that draws on large scale, quantitative data sets is a growing trend.

Few scholars have used an intersectional lens to examine the interactions between housing or homelessness, health, and complex social identities, but the studies that have used this approach have yielded insightful albeit sometimes contradictory results. Benoit, Carroll, and Chaudhry (2003) explored the reflections of marginalized Aboriginal women in Vancouver's Downtown Eastside and concluded that various efforts to provide appropriate health care services to these women had not been successful. Thurston, Soo, and Turner (2013) compared the health conditions, among other characteristics, of Aboriginal and non-Aboriginal homeless individuals in Calgary, and found no statistically significant differences on the majority of health conditions except substance abuse, where Aboriginal respondents were more likely to report this as an issue than their non-Aboriginal peers. Monette et al. (2011) examined longitudinal data collected in Ontario through the *Positive Spaces, Healthy Places* study and concluded that: "compared to Caucasian participants living with HIV, Aboriginal participants were more likely to be younger, female or transgender women, less educated, unemployed, and homeless or unstably housed. They were also more likely to have low incomes and to have experienced housing-related discrimination" (p. 215). Greene et al. (2013) also drew on data from *Positive Spaces, Healthy Places* to investigate the housing experiences of African and Caribbean mothers with HIV. They demonstrated that this group of women: "have intersecting identities that result in multiple sites of marginalization and oppression and that this can have a detrimental impact on their housing experiences... [and that] policy interventions need to take such insights into

account in how services are coordinated and delivered (Greene et al. 2013: 130).” Mair (2010) explored the intersectional interactions between ‘race’ (Black/White), social ties and depression for older American adults, using the most recent wave of the *Health and Retirement Study*. She concluded that “[there were] pronounced differences between Black women’s and White women’s friend and kin ties... [noted] the potential vulnerability of older Black men... [and] highlight[ed] the importance of catering community-based elder care support towards diverse aging populations” (Mair 2010: 667). Benbow, Forchuk, and Ray (2011) examined “the structural forces shaping the health of mothers with mental illness experiencing homelessness as well as their individual acts to overcome existing barriers” (2011: 687). Their findings “reveal[ed] the] complex and compounding nature of social locations as intersecting sites of discrimination” (2011: 692) and examined the implications for nursing practice. Marshall et al. (2008) explored the prevalence of HIV and associated risk factors in street-involved Aboriginal and non-Aboriginal youth in Vancouver. Unfortunately, other than Benoit et al. (2003), Thurston et al. (2013), Monette et al. (2011), and Marshall et al. (2008) we were unable to identify other studies that examined links between Aboriginal health and housing or homelessness using an intersectional lens.

The absence of additional literature is a noteworthy gap, especially given the numerous Canadian studies that focus on Aboriginal health (Bombak and Bruce 2012; Lix, Metge, and Leslie, 2009; Senese and Wilson 2013; Gionet and Roshanafshar 2013; Snyder and Wilson 2012; Tjepkema 2002; Veenstra 2011; Veenstra 2009; Wilson, Rosenberg, & Abonyi, 2011). A few of these studies have adopted an intersectional approach, including Veenstra (2009) who found that when socio-demographic variables and health behaviours were accounted for, the odds of Aboriginal Canadians reporting poor health outcomes compared to non-Aboriginal Canadians was reduced, although the odds were still greater for the Aboriginal group. Similarly, Tjepkema (2002) noted that when Aboriginal and non-Aboriginal Canadians with high incomes were compared, they had similar numbers of chronic conditions, whereas, Aboriginal people with low and middle-income households had more chronic conditions than other Canadians with similar incomes³. Socioeconomic status has also been found to account for some of the risk of diabetes⁴

³ Determination of whether household income was ‘high’, ‘medium’ or ‘low’ was calculated based on both household income and household size.

⁴ The study did not distinguish between Type I or Type II diabetes.

and poor health ratings for Aboriginal people (Veenstra 2009). Lix et al. (2009) reported that Aboriginal and non-Aboriginal women did not differ in the prevalence of osteoporosis in their examination of data drawn from rural and urban settings in Manitoba, Canada.

Generally though, within the Canadian population, off-reserve Aboriginal Canadians have been found to report poorer health outcomes than non-Aboriginal Canadians on a range of variables (Tjepkema 2002), including rating their health status as lower (O'Donnell and Tait 2003) and having a lower life expectancy (Statistics Canada 2003). In addition to reports of poorer overall health, off-reserve First Nations (56%) and Métis (55%) reported being diagnosed with one or more chronic conditions more frequently than non-Aboriginal people (48%) (Gionet and Roshanafshar 2013). Specific health conditions that have been reported more frequently by Aboriginal individuals included diabetes (Tjepkema 2002; Veenstra 2009), high blood pressure (Tjepkema 2002; Veenstra 2009), arthritis/rheumatism (Tjepkema 2002), HIV/AIDS in injection drug users (Wood et al. 2008), and a strain of *Streptococcus pneumoniae* (Vanderkooi et al. 2011). Aboriginal individuals were also more likely to report symptoms of a major depressive episode in the previous 12 months (Tjepkema 2002).

With respect to gender differences within Aboriginal populations, in the 2001 and 2006 Aboriginal Peoples Survey Canadian Aboriginal women were less likely to describe their health as excellent or very good compared to Aboriginal men (O'Donnell and Tait 2003; O'Donnell and Wallace 2011). Aboriginal women were also more likely to report being diagnosed with a chronic health condition compared to Aboriginal men (O'Donnell and Wallace 2011). The gender distribution of HIV/AIDS is such that when the gender distribution of HIV/AIDS is explored, women make up a greater proportion of individuals with HIV or AIDS in the Aboriginal population compared women in the non-Aboriginal (Public Health Agency of Canada 2007).

The Study

Our exploration is based on data from the Housing and Health in Transition (HHiT) Study, an ambitious longitudinal initiative that interviewed homeless and vulnerably housed adults living on their own at three different points in time between 2009 and 2011 in Toronto,

Ottawa and Vancouver⁵. At baseline (January 2009), 1192 individuals were interviewed in the three study sites. Overall, about 18% (n = 205) of the respondents indicated a First Nations or Aboriginal affiliation of at least one of their parents.

The HHiT study was motivated by three main objectives:

1. To determine the incidence of housing transitions... defined as (a) the rate at which homeless individuals exit homelessness, (b) the rate at which vulnerably housed individuals become homeless, and (c) the rate at which vulnerably housed individuals attain residential stability by the end of the follow-up period;
2. To identify risk factors and individual, interpersonal, and community-level resources associated with (a) the attainment of residential stability among homeless individuals, (b) the onset of homelessness among vulnerably housed individuals, and (c) the attainment of residential stability among vulnerably housed individuals; and
3. To ascertain whether changes in housing status are associated with subsequent changes in physical and mental health functioning and major health determinants (including access to health care, alcohol and drug use, food security, and social supports). (Hwang et al. 2011: 610)

While a comparison of Indigenous and non-Indigenous respondents was not a primary goal of HHiT, the study does provide a unique opportunity to further explore the similarities and differences of these populations' experiences over time. In this article, we examine health status and housing outcomes on the basis of self-reported ethnic affiliation/ancestry and country of birth. We compare three groups of respondents on the basis of self-reported identity: a) those who reported an Indigenous identity, b) those who were Canadian born and with a non-Indigenous identity, and c) those who were not born in Canada and with a non-Indigenous identity. The decision to distinguish the non-Indigenous participants on the basis of country of origin was made due to demonstrated differences between Canadian-born and foreign-born respondents to the Ottawa-based Panel Study on Homelessness (Klodawsky, Nemiroff and Aubry 2014).

i) Participants, Recruitment, Sampling Design

⁵ The HHiT Study completed its fifth and last iteration of surveys in 2013, together with a sub-study that conducted in-depth qualitative interviews with selected respondents in each of the study sites.

Individuals who were eligible to participate in HHiT included single adults over 18 years of age who were not living with a partner or a dependent child at the time of the baseline survey. The goal of the recruitment strategy was to capture a broadly representative sample of equal numbers (200 each) of single adults who were homeless and who were vulnerably housed at the onset of the study in each of the three study sites. Wherever possible, random samples were used at places such as shelters, rooming houses and meal programs, following guidelines developed by Ardilly and Le Blanc (2001). Participants were categorized as either homeless or vulnerably housed according to the following criteria:

Participants were considered homeless if they were currently living in a shelter, public place, vehicle, abandoned building, or someone else's place and did not have their own place. Participants were considered vulnerably housed if they reported living in their own room, apartment, or place and had been homeless in the past twelve months and/or had two or more moves in the past 12 months. Participants who were temporarily living with friends and family and were paying rent were considered vulnerably housed, while those who were not paying rent were considered homeless. Full-time students and individuals who were visiting the city for less than or equal to 3 months were excluded. (Hwang et al. 2011:614)

Further details about the recruitment strategy as well as follow-up procedures have been reported in Hwang et al. (2011).

The study was structured around the concept of housing transition because housing transitions were understood as “a valuable opportunity to better understand the complex connections between housing and health, and to answer certain intriguing and policy-relevant questions” (Hwang 2008: 12a). In each city, a similar sampling design and survey instrument was used. In addition to information about housing histories (where respondents had lived since the previous interview), social networks, health status and health and social service utilization, the baseline surveys collected a wealth of demographic data. Given the study's aim to recruit a representative population, substantially more men ($n = 781$, 65.7%) than women ($n = 389$, 32.7%) were enrolled in the study. In response to a question about ethnic background, 17.7% of the overall sample self-identified as First Nations/Aboriginal. Unique among all racial/cultural groups in the study, First Nations/Aboriginal respondents were almost twice as likely to be vulnerably housed as to be homeless in contrast to the study respondents overall for whom the proportions of being housed or homeless were much more similar (Hwang et al. 2011: 620).

ii) Study Setting

Toronto, Vancouver and Ottawa are Canada's first, third and fourth largest cities with 2011 populations of about 5,841,000, 2,426,200, and 1,255,900 in their metropolitan areas respectively (Statistics Canada 2013). While Toronto and Ottawa are both located in the province of Ontario in eastern Canada, Vancouver is located on the west coast and in the province of British Columbia. In all three cases, homelessness and risk-of-homelessness have been issues of growing severity since the early 1990s.

The profile and size of Aboriginal peoples in each of these cities vary, as is the case more generally. As Norris, Clatworthy, and Peters (2013) noted, "The significance of various factors affecting Aboriginal population growth varies between different cities and for different subgroups of the Canadian Aboriginal population" (p. 30). In 2006, Aboriginal peoples were estimated to be 1.8% (20,590) and 1.9% (40,310) of the urban population in Ottawa-Gatineau and Vancouver respectively and 0.5% (26,575) in Toronto (Norris et al. 2013). Based on a review of various homeless counts over the last decade, about 18%, 25% and 30% of the homeless populations of Toronto, Vancouver, and Ottawa, respectively, are estimated to be Aboriginal (Belanger et al., 2013).

iii) Measures

This study examined the results from the following sets of measures/questions. For further details about the types of questions used in each measure, see Hwang et al. 2011:

- a) The SF-12 is a 12-item measure of health status that includes the Physical Component Summary (PCS) score and the Mental Component Summary (MCS) score (Ware, Kosinski, and Keller 1996). The scales for the items of the SF-12 vary. For example, participants are asked to rate their health in general from 1 (*excellent*) to 5 (*poor*), and to indicate how much their health limits them from performing different types of activities, such as climbing several flights of stairs on a scale from 1 (*yes, limited a lot*) to 3 (*no, not limited at all*) on two items. The measure includes four yes/no questions regarding whether physical and mental health have interfered with activities during the past four weeks ("During the past 4 week, have you accomplished less than you would like as a result of your physical health?"). There was one item regarding how much pain interfered with work (inside and outside the home) during the past four weeks (1 [*not at all*] to 5 [*extremely*]). Three items (feeling calm, having energy, and feeling down in the past four weeks) were rated on a scale of 1 (*all of the time*) to 6 (*none of the time*). The final item asked how often physical or emotional

problems interfered with social activities in the past four weeks (1 [*all of the time*] to 5 [*none of the time*]). Scores on the PCS and MCS range from 0 to 100 with a higher score representing better health. For the PCS and the MCS, a score of 50 represents the mean for the general American population (Ware, Kosinski, and Keller, 1998). Normative SF-12 data for the Canadian population have not been established.

- b) The EQ-5D is a self-report measure of health status (The EuroQol Group 1990). Participants are asked to “Please let me know which of the statements I read to you best describes your own health state today.” The five areas that are explored include mobility, self-care, usual activities, pain/discomfort and anxiety/depression. For each aspect of health, participants indicate the level of difficulty they experience on a scale of 1 (e.g., *I have no problems walking about*) to 3 (e.g., *I am confined to bed*). The index score ranges from 0 to 1 with a higher score representing a better health status. The EQ-5D was included in addition to the SF-12 as they involve different timelines, with the EQ-5D focussed on “your own health state today”, versus health over the past four weeks, which is the timeline of 75% of the SF-12 items.
- c) The EQ-5D visual analogue scale score is a self-reported 1-item measure of current health status (“your own state of health today”) (The EuroQol Group 1990). The score ranges from 0 (*worst imaginable state of health*) to 100 (*best imaginable state of health*).
- d) Participants were surveyed about their experiences with various chronic health conditions (“Do you have any of the following medical conditions?) and other health conditions in the past year (“In the past 12 months, have you had any of the following medical conditions?”).
- e) Toro’s Housing Quality Instrument is a six-item measure of housing quality (Toro et al. 1997). Participants rate 6 aspects of their housing on a 7-point scale (1 [*very bad*] to 7 [*very good*]): comfort, safety, spaciousness, privacy, friendliness, and overall quality (e.g., “How would you rate the place where you currently live in terms of comfort?”).

iii) *Data Analysis and Results*

Given our interest in intersectional analysis as discussed above, we decided to compare Indigenous and non-Indigenous respondents on the basis of matched identity groups (Indigenous, non-Indigenous and Canadian-born, and non-Indigenous and foreign-born). At baseline, these matched sets consisted of 330 participants in three groups, for a total of 110 participants in each group. Participants were matched on city (Ottawa, Toronto, or Vancouver), gender (woman or man only; unfortunately, the 18 transgender respondents could not be included because of their very small numbers across identity groups), housing status (vulnerably housed or homeless), and age group (<30, 0-49, ≥50+). Forty-eight percent of the participants were from Toronto (48.2%),

28.2% from Vancouver, and 23.6% from Ottawa. The majority of participants were men (70.9%; 29.1% were women), 55.5% were homeless and 44.5% vulnerably housed at baseline. There were no group differences on age⁶. Two hundred and sixty-seven participants from these matched groups completed the second annual follow-up interview (e.g., third year of data collection). Participants who were homeless at baseline were less likely to complete the follow-up, and Indigenous participants were more likely to complete the follow-up. There were no gender or age differences in completing the follow-up interview.

Multivariate analyses of variance were used to look at group differences on health variables and housing quality at baseline and at the second follow-up interview. Follow-up univariate analyses were used to identify significant group differences. Repeated measures ANOVAs were used to explore changes on health variables and housing quality from baseline to follow-up. Interactions between change over time and identity group, change over time and gender, and the three-way interaction between change over time, gender, and group were explored for each variable. Chi-square analyses were used to explore differences in chronic health conditions, health conditions within the past 12 months, housing outcomes, and changes in housing status. Fisher's Exact Test was used when assumptions for chi-square analyses were not met. Baseline housing status was used as a covariate in the analyses of follow up data where it demonstrated an effect on the dependent variables. Partial eta squared (η_p^2) is presented as a measure of effect for ANOVA results, Cohen's *d* is used as a measure of effect size for *t*-tests, and Cramer's *V* is reported for chi-square analyses.

Health differences between Identity Groups

To begin, it is important to acknowledge that each of the identity groups reported significantly poorer physical health⁷ and mental health⁸ functioning than a normative sample of the general American population. Within this already marginalized population of homeless and

⁶ Indigenous $M = 42.21$ years old, $SD = 9.91$; non-Indigenous, Canadian-born $M = 41.60$, $SD = 10.78$; non-Indigenous, foreign-born $M = 42.49$, $SD = 10.90$

⁷ At baseline, Indigenous: $t(109) = -7.77$, $p < .001$, $d = -0.75$; non-Indigenous and Canadian-born: $t(109) = -3.33$, $p = .001$, $d = -0.33$; non-Indigenous, foreign-born, $t(109) = -3.28$, $p = .001$, $d = -0.33$.

⁸ At baseline, Indigenous: $t(109) = -9.40$, $p < .001$, $d = -0.99$; non-Indigenous and Canadian-born: $t(109) = -9.50$, $p < .001$, $d = -1.00$; non-Indigenous, foreign-born, $t(109) = -8.33$, $p < .001$, $d = -0.90$.

vulnerably housed adults, the scores illustrated a consistent trend of group differences on physical health⁹, with the Indigenous respondents reporting poorer physical health functioning compared to the non-Indigenous groups at both baseline (non-Indigenous, foreign-born : $p < .01$; non-Indigenous, Canadian-born: $p < .05$) and follow-up ($p \leq .01$). Mental health functioning was similar for all three identity groups at baseline and follow-up. However, mental health functioning scores increased significantly from baseline to follow-up¹⁰, indicating improvements in mental health functioning for all the groups at follow-up.

The groups also differed on the EQ-5D¹¹ Index score, indicating differences in their health¹² on the day of the interview. The Indigenous participants had a lower score than the non-Indigenous, foreign-born participants at baseline ($p < .01$), but, at follow-up, the EQ-5D Index score was similar for all three groups. The ratings on the EQ-5D visual analogue scale (state of your health today) at baseline did not differ by identity group. However, at follow-up, there was a group difference on the visual analogue scale¹³ and the Indigenous group had a lower score, and thus a lower rating of their health on that day, than did both non-Indigenous groups. EQ-5D visual analogue scores did not change significantly over time.

Gender and Health

When comparisons were made at baseline and at follow-up on the basis of gender, there were no significant differences in physical health or mental health functioning between men and women. The same was the case for the EQ-5D visual analogue scale. Intriguingly though, the results of the EQ-5D index score indicated a significant gender difference¹⁴, with women having a significantly lower EQ-5D index score than did men.

T-tests were used to explore gender differences within each identity group and several gender differences were found within the Indigenous ancestry group (see Table 1). Indigenous women reported significantly lower physical health¹⁵ and mental health¹⁶ at baseline and follow-

⁹ Baseline: $F(2, 323) = 6.91, p = .001, n_p^2 = .04$; Follow up: $F(2, 257) = 9.72, p < .001, n_p^2 = .07$

¹⁰ $F(1, 257) = 11.69, p = .001, n_p^2 = .04$

¹¹ $F(2, 323) = 5.08, p = .007, n_p^2 = .03$

¹² Physical and mental health both included in measure

¹³ $F(2, 257) = 7.25, p = .001, n_p^2 = .05$

¹⁴ $F(1, 261) = 4.50, p = .04, n_p^2 = .02$ (result of a repeated measures ANOVA with time, gender, and group as independent variables)

¹⁵ Baseline: $t(108) = -2.55, p = .01, d = -0.54$; Follow-up: $t(69.31) = -2.65, p = .01, d = -0.55$

up compared to Indigenous men. Indigenous women also had significantly lower EQ-5D index scores compared to Indigenous men at both time points¹⁷. Although there was no gender difference in the Indigenous group on the visual analogue scale (state of your health today) at baseline, women had a significantly lower score at follow-up¹⁸. Indigenous women also reported a greater number of chronic conditions compared to Indigenous men¹⁹. This was also the case within the non-Indigenous, Canadian-born group²⁰, whereas within the non-Indigenous, foreign-born group, the only significant gender difference was that women reported a greater score on the visual analogue scale (state of their health today) compared to men at follow-up²¹.

Table 1. Health functioning and within-group gender differences on health variables at baseline and follow up

Measure	Indigenous M (SD)		Non-Indigenous and Canadian-born M (SD)		Non-Indigenous and non-Canadian born M (SD)	
	Women	Men	Women	Men	Women	Men
Baseline						
SF-12 Physical Component Summary	38.63 (9.60)^a	43.97 (10.14)^a	44.03 (11.31)	47.55 (10.66)	47.37 (10.11)	46.37 (11.55)
SF-12 Mental Component Summary	34.94 (12.58)^b	40.25 (12.36)^b	35.43 (10.93)	39.87 (13.08)	41.25 (14.62)	38.68 (13.04)
EQ-5D Index Score	0.64 (0.22)^c	0.77 (0.19)^c	0.73 (0.24)	0.78 (0.21)	0.79 (0.22)	0.79 (0.20)
ED-5D VAS (State of health today)	56.25 (21.39)	60.33 (20.97)	60.86 (21.91)	63.46 (21.28)	68.13 (22.11)	62.68 (24.85)
Number of chronic conditions	4.47 (2.34)^b	3.35 (2.17)^b	3.41 (2.73)^d	2.10 (1.80)^d	1.81 (1.66)	1.94 (1.83)
Follow up 2						
SF-12 Physical Component Summary	37.49 (10.24)^a	43.77 (12.46)^a	47.30 (10.26)	46.93 (11.87)	48.63 (9.31)	47.30 (10.74)

¹⁶ Baseline: $t(108) = -2.04, p = .04, d = -0.43$; Follow-up: $t(99) = -2.29, p = .02, d = -0.51$

¹⁷ Baseline: $t(50.10) = -2.88, p = .006, d = -0.63$; Follow-up: $t(48.48) = -2.65, p = .01, d = -0.59$

¹⁸ $t(44.10) = -2.24, p = .03, d = -0.51$

¹⁹ $t(108) = 2.41, p = .02, d = 0.50$

²⁰ $t(42.45) = 2.49, p < .05, d = 0.57$

²¹ $t(80) = 2.31, p < .05, d = 0.61$

SF-12 Mental Component Summary	37.38 (10.99) ^b	43.37 (12.59) ^b	39.31 (10.73)	42.95 (12.66)	46.86 (10.71)	43.14 (13.19)
EQ-5D Index Score	.64 (.24)^c	.77 (.20)^c	.72 (.24)	.78 (.22)	.79 (.25)	.77 (.22)
ED-5D VAS (State of health today)	50.23 (30.84) ^b	63.95 (22.02) ^b	64.85 (21.54)	66.13 (22.03)	79.25 (19.75) ^e	64.60 (24.25) ^e

Note. Bold face indicates significant gender differences within an identity group. Indigenous: baseline $n = 110$, follow-up $n = 101$; non-Indigenous, Canadian-born: baseline $n = 110$, follow-up $n = 82$; non-Indigenous, foreign-born: baseline $n = 109$, follow-up $n = 80$.

^a $p = .01$ gender difference for Aboriginal participants. ^b $p < .05$ gender difference for Aboriginal participants. ^c $p < .01$ gender difference for Aboriginal participants. ^d $p < .05$ gender difference for non-Indigenous, Canadian-born participants. ^e $p < .05$ gender difference for non-Indigenous, foreign-born participants.

Chronic Health Conditions and Health Conditions within the Past 12 Months at Baseline²²

The extent of frequently reported chronic health conditions differed between the identity groups²³. The Indigenous group reported significantly more chronic health conditions than the other identity groups ($p < .001$), and the non-Indigenous, foreign-born participants had fewer chronic conditions than non-Indigenous, Canadian-born participants ($p = .01$). We explored identity group differences on individual health conditions. The findings on health conditions that were endorsed by a minimum of 20% of the Indigenous sample are included in Tables 2 and 3²⁴. More Indigenous participants reported the following health conditions than expected: bronchitis, Hepatitis B or C, arthritis, back problems, migraine headaches, head injury, and hearing problems. Non-Indigenous, non-Canadian born participants reported fewer of the following conditions than expected: Hepatitis B and C, arthritis, back problems, migraine headaches, head injury, and hearing problems. In terms of health conditions within the past 12 months,

²² Information about chronic health conditions was not collected in the follow-up survey.

²³ $F(2, 323) = 21.06, p < .001, \eta_p^2 = .12$.

²⁴ In other cases, more Indigenous respondents than the respondents from the others groups reported specific health conditions (e.g., HIV/AIDS ($\chi^2(2, N = 329) = 13.06, p = .001$, Cramer's $V = .20$), exposure to tuberculosis (TB)/positive TB test ($\chi^2(2, N = 328) = 9.80, p = .01$, Cramer's $V = .17$), fetal alcohol syndrome or fetal alcohol spectrum disorder ($\chi^2(2, N = 316) = 7.48, p = .02$, Cramer's $V = .15$)); however, when less 20% of Indigenous group reported the condition, it was not included in Table 2.

Indigenous participants were also more likely to report pneumonia, and non-Indigenous, foreign-born participants were less likely to report pneumonia.

Table 2. Chronic conditions reported at baseline by group

Health Condition	Indigenous (%)	Non-Indigenous and Canadian-born (%)	Non-Indigenous and non-Canadian born (%)
High blood pressure	20.4	18.4	18.7
Asthma	28.2	19.3	17.4
Chronic bronchitis ^a	27.4	15.6	4.6
Hepatitis B or C ^b	40.4	22.2	12.1
Arthritis ^c	44.9	30.8	20.4
Back problems ^d	53.2	41.7	25.2
Problems walking, lost limb, other physical handicap	31.2	22.7	24.1
Migraine headaches ^e	33.0	19.6	12.8
Head injury ^f	69.1	59.1	44.0
Hearing problems ^g	24.5	15.4	4.6
Mood disorder	38.5	39.8	40.6
Anxiety disorder	27.8	23.1	30.2

Note. Significant differences are indicated in bold.

^a $\chi^2(2, N = 324) = 21.01, p < .001$, Cramer's V = .26. ^b $\chi^2(2, N = 324) = 23.60, p < .001$, Cramer's V = .27. ^c $\chi^2(2, N = 322) = 14.91, p = .001$, Cramer's V = .22. ^d $\chi^2(2, N = 324) = 17.75, p < .001$, Cramer's V = .23. ^e $\chi^2(2, N = 325) = 13.46, p = .001$, Cramer's V = .20. ^f $\chi^2(2, N = 329) = 14.24, p = .001$, Cramer's V = .21. ^g $\chi^2(2, N = 323) = 17.27, p < .001$, Cramer's V = .23.

Table 3. Health conditions within past 12 months by group

Health condition	Indigenous (%)	Non-Indigenous and Canadian-born (%)	Non-Indigenous and non-Canadian born (%)
Bed bug bites	48.1	40.6	45.9
Pneumonia ^a	22.2	13.9	6.4
Foot problems	41.3	28.2	31.8

^a $\chi^2(2, N = 325) = 11.16, p = .003$, Cramer's V = .19.

Housing Status, Changes in Housing Status and Housing Quality at Follow-up

Given the HHiT study's interest in housing transitions and health, we investigated three characteristics of the participants' housing situations over time. The first had to do with housing status at follow-up, the second examined changes in housing status between baseline and follow-

up, and the third had to do with the perceived quality of the place in which the respondent was living at baseline and at follow-up.

On the basis of the statistical analyses performed on these data, the participants in each identity group were equally likely to be housed at follow-up²⁵ (see Table 4). When the identity group differences were examined separately for men and women (e.g., women were compared across identity groups and men compared in the same way) using Fisher’s Exact Test, there were no significant identity group differences in whether participants were housed at follow-up (see Table 4). However, when men and women within each identity group were compared, more non-Indigenous, foreign-born women were housed compared to non-Indigenous, foreign-born men ($p = .05$). There were no differences in housing status between men and women for the Indigenous group or for non-Indigenous, Canadian-born participants. When group differences on housing outcome were explored by city, there were no differences between the housing statuses of the Indigenous identity groups in each city at follow-up. However, when scanning across the results, it is noteworthy that in each case investigated, the proportion of Indigenous identity group participants who were housed was lower than was the case for the other groups, although not in a manner that was deemed to be statistically different.

Table 4. Housing status at follow-up

Group	Indigenous (N = 97) %		Non-Indigenous and Canadian-born (N = 78) %		Non-Indigenous and non-Canadian born (N = 78) %	
	Housed	Homeless	Housed	Homeless	Housed	Homeless
All	72.2	27.8	80.8	19.2	80.8	19.2
Women	72.4	27.6	84.6	15.4	95.5	4.5
Men	72.1	27.9	78.8	21.2	75.0	25.0
Vancouver	69.6	30.4	85.0	15.0	88.9	11.1
Toronto	74.5	25.5	80.0	20.0	80.5	19.5
Ottawa	69.6	30.4	77.8	22.2	73.7	26.3

Note. Groups did not differ on housing outcomes in a statistically significant manner.

Group differences in housing status between the baseline interview and the follow-up interview were explored (see Table 5). It is important to note that in this analysis we were not able to include information about changes in housing status between these two interviews (e.g., a respondent who became homeless for a period between the interview dates, but was housed on

²⁵ $\chi^2 (1, N = 253) = 2.54, p = .28, \text{Cramer's } V = .10.$

the interview dates). There were no statistically significant group differences in changes in housing status for the three identity groups. When identity group differences were examined separately for men and women using chi-square analysis, no identity group differences were found. When gender differences for each identity group were explored using Fisher’s Exact Test, women in the non-Indigenous, foreign-born group were more likely to have been housed compared to men in that group ($p < .05$). There were no other gender differences within the three identity groups. Identity group differences were also examined within each city using Fisher’s Exact Test. No statistically significant differences were found. However, when scanning across the results, it is noteworthy that when comparing the outcomes for Indigenous and Non-Indigenous Canadians, the proportion of Indigenous identity group participants that stayed or became homeless was always higher, and the proportion of this group that stayed or became housed was always lower than was the case for Non-Indigenous Canadians.

Table 5. Changes in housing status from baseline to follow up

Group	Indigenous (N = 97)				Non-Indigenous, Canadian-born (N = 78)				Non-Indigenous, foreign-born (N = 78)			
	Homeless		Housed		Homeless		Housed		Homeless		Housed	
	Stayed %	Became %	Stayed %	Became %	Stayed %	Became %	Stayed %	Became %	Stayed %	Became %	Stayed %	Became %
All	19.6	8.2	39.2	33.0	12.8	6.4	39.7	41.0	14.1	5.1	43.6	37.2
Women	24.1	3.4	27.6	44.8	15.4	0	30.8	53.8	4.5	0	31.8	63.6
Men	17.6	10.3	44.1	27.9	11.5	9.6	44.2	34.6	17.9	7.1	48.2	26.8
Vanc.	21.7	8.7	30.4	39.1	10.0	5.0	40.0	45.0	11.1	0	33.3	55.6
Tor.	13.7	11.8	49.0	25.5	10.0	10.0	47.5	32.5	12.2	7.3	58.5	22.0
Ottawa	30.4	0	26.1	43.5	22.2	0	22.2	55.6	21.1	5.3	21.1	52.6

Note. Groups did not differ on changes in housing status in a statistically significant manner.

A repeated measures ANOVA found that mean ratings of housing quality on Toro’s Housing Quality Instrument did not differ significantly between Indigenous identity groups, or men and women at baseline or follow-up (see Table 6). There was no significant interaction between identity group and gender on housing quality ratings. However, the ratings of housing quality increased overall from baseline to follow up²⁶, indicating greater self-reported housing quality at the time of the follow-up interview compared to baseline.

²⁶ $F(1, 261) = 9.02, p < .01, \eta_p^2 = .03$

Table 6. Housing quality by city and gender

Group	Housing Quality					
	Indigenous		Non-Indigenous and Canadian-born		Non-Indigenous and non-Canadian born	
	Baseline <i>M (SD)</i>	Follow-up <i>M (SD)</i>	Baseline <i>M (SD)</i>	Follow-up <i>M (SD)</i>	Baseline <i>M (SD)</i>	Follow-up <i>M (SD)</i>
Vancouver	24.47 (7.74)	29.41 (8.18)	28.52 (7.59)	30.29 (8.59)	26.00 (8.27)	29.09 (9.91)
Toronto	27.83 (8.73)	28.02 (8.58)	27.15 (7.84)	30.13 (8.32)	29.09 (9.25)	29.90 (7.63)
Ottawa	26.31 (6.78)	29.35 (9.04)	27.54 (7.65)	30.26 (7.51)	26.96 (7.48)	28.79 (9.20)
Men	25.97 (8.18)	28.59 (8.04)	28.03 (7.45)	30.23 (8.13)	26.77 (8.73)	28.43 (8.53)
Women	27.88 (7.81)	28.94 (9.65)	26.66 (8.25)	30.15 (8.26)	30.03 (8.01)	32.18 (8.27)

Note. Groups did not differ on housing quality in a statistically significant manner.

Discussion

This study contributes to knowledge about the health of homeless and vulnerably housed Indigenous peoples in Ottawa, Toronto and Vancouver relative to those without Indigenous ancestry. The study also contributes to knowledge about differences in gendered health status among those with Indigenous ancestry in this population. In the analyses discussed above, physical health status was poor for all groups, but it was particularly poor for the Indigenous identity group in comparison to those without Indigenous ancestry. This was not the case with regard to mental health status where all of the identity groups exhibited relatively similar poor mental health in comparison to a normative sample. Notably though, when gender differences were explored within each identity group, Indigenous women exhibited poorer physical health status and mental health status than did their male peers. Comparisons among the identity groups about the presence of specific health conditions provided further insights: the Indigenous group reported significantly more chronic health conditions and higher rates in many cases in comparison with the other groups. The finding that non-Indigenous, foreign-born participants endorsed fewer health conditions than the non-Indigenous, Canadian-born participants was consistent with the results reported in Klodawsky et al. (2014) where foreign-born respondents to the Panel Study on Homelessness in Ottawa reported significantly fewer chronic health conditions than did their matched, Canadian-born peers.

These results reinforce some other studies about the health of Indigenous peoples. Some evidence has already been presented about off-reserve First Nations, Métis and Inuit peoples' poorer physical health, although typically these analyses have not been focused specifically on

homeless or vulnerably housed populations nor gender differences within these populations (Gionet and Roshanafshar 2013; Tjepkema 2002; Veenstra 2009; Vanderkooi et al. 2011). We are not aware of other studies that have used the SF-12 or EQ-5D with Indigenous Canadians, so it is not possible to compare the scores on the SF-12 or EQ-5D from this study to those of other Indigenous Canadians. More generally, evidence about gender differences in health status or chronic health conditions within Indigenous populations has been limited (Veenstra 2009; Wilson et al. 2011; O'Donnell and Wallace 2011).

Some of our findings on specific chronic conditions were consistent with previous research whereas others were not. This study found a higher rate of HIV/AIDS among Indigenous participants, as has other research (Wood et al. 2008). Similar to our study, Thurston et al. (2013) reported no significant differences on mobility limitations, brain injury, or mental health when they compared Aboriginal and non-Aboriginal homeless individuals. The conclusion of no group differences with regard to asthma in our study was consistent with Thurston et al. (2013), but these findings conflict with the higher rates of respiratory conditions in the Aboriginal population reported in other research (Gionet and Roshanafshar 2013). One respiratory condition that was more prevalent in the Indigenous group in our study was chronic bronchitis. So too was the reporting of Hepatitis B or C. Yet, Thurston et al. (2013) did not find such differences in relation to Hepatitis C. Tjepkema's (2002) conclusion that arthritis was more common among Aboriginal groups also was consistent with our findings but the lack of difference in the prevalence of hypertension or mood disorder in our study was not.

One possible reason that our study did not find group differences in the prevalence of certain chronic conditions that were identified in other research might be due to extent to which the whole of the HHIT study population was low income and thus likely to be in relatively poor health overall. Although Tjepkema (2002) found that low income was related to greater health differences between Aboriginal and non-Aboriginal individuals, perhaps at very low levels of income some health differences are less present. Thurston et al. is one exception: their study focused on a similar population to our study but found fewer differences in chronic conditions between Aboriginal and non-Aboriginal respondents. One possible reason why our study did find some group differences on health might be the inclusion of vulnerably housed as well as homeless respondents: the HHIT study sample might have had slightly more access to financial resources relative to Thurston et al.'s sample overall.

The study also highlights the particularly poor mental health and physical health status of Indigenous women even as compared to Indigenous men in Canada. The finding of a greater number of chronic conditions in Indigenous women compared to Indigenous men is consistent with other research (O'Donnell and Wallace 2011). The poorer health outcomes of women provide additional support for the growing calls to urgently address this group's complex and multiple unmet health needs within a framework that also addresses the particular situations of marginalized Indigenous peoples more generally (Belanger et al. 2013).

Another, albeit very preliminary, contribution of this article is the examination of interactions between identity group and housing outcomes over time. Our analyses were unable to discern any statistically significant trends between identity group and housing status, changes in housing status, and changes in perceived housing quality over time, despite the evidence that the Indigenous homeless and vulnerably housed respondents had poorer physical health and more chronic health conditions than their non-Indigenous peers.

A third contribution is methodological and has to do with an approach to intersectional analysis that is quantitative but does not require the very large sample sizes needed to explore complex social identities through regression analysis (Scott and Siltanen 2002). This study's approach to analysis has demonstrated the utility of examining similarities and differences between carefully matched samples that take into account multiple aspects of identity (such as age, country of origin, locale) within a study population.

Limitations

In his landmark article on intergenerational trauma among homeless Aboriginal men, Menzies (2009) asserted that:

I did not use a non-Aboriginal comparison group to identify differences in their experiences. My concern with research on homelessness is the assumption of a generalized "homeless" population. I wanted this study to focus on the experience of Aboriginal men, as I believe their issues should not be compared to those of another group. I believe their experiences warrant singular attention and should not be weighed against the experiences of other "subpopulations." (p. 20)

Menzies' approach certainly raises important questions about the utility of investigating Indigenous/non-Indigenous differences in the context of the HHIT study. Comparative studies

may incorporate implicit and unwarranted assumptions about what similarity or difference may or may not infer. For example, the outcome reported above about similar low levels of mental health functioning among Indigenous and non-Indigenous Canadian participants to HHIT should not be taken as an indication that the mental health challenges of these populations are the same or that they stem from similar histories, experiences and/or policy contexts. As always, drawing appropriately informed and circumspect inferences from comparative quantitative studies is an important strategy for linking such results to policy implications.

With regard to the HHIT study in particular, reflecting on the centrality of the concept of ‘transition’ does provide an opportunity to assess the potential challenges involved in comparative studies of homelessness and housing vulnerability. As Peters and Christensen (2013) have noted:

the emphasis on absolute homelessness in urban settings in both popular and academic discourse neglects the often less visible forms of homelessness that take place in rural or reserve settings (see Peters 2012; Tester 2009), while at the same time obscuring linkages between urban ‘street’ homelessness and dynamics at the rural community or reserve scale (see Christensen 2012; Peters and Robillard 2009). (p.1)

The authors highlight a unique feature of transitions among Indigenous peoples in Canada, having to do with the culturally normative nature of movement between reserve and city. This feature raises questions about the appropriate scale of examination as well as the meaning and motivation for transitions. As Peters and Robillard (2009) note, “There is very little work that explores whether First Nations’ ability to access housing on reserve affects rates of homelessness in urban areas” (p. 668). These culturally informed insights highlight the limitations of the more typically generic approach to housing transitions in scholarly work on homelessness: as a code word for instability but without much attention to the particular circumstances and pathways through which vulnerable people move and/or stay in place. Simultaneously though, the open-endedness of HHIT’s approach and its efforts to draw upon a broad ‘representative’ sample, does present a unique opportunity for analysis. Interrogating the implicit assumptions in the use of transition in HHIT is an entry point for recognizing the critical importance of culture and histories of colonialism. Taking such limitations into account in conjunction with the study’s strengths might provide a particularly powerful basis for further analysis.

Another limitation of this study is that the health data were based on self-reports. The self-reported nature of the data could have adversely affected the reported findings if participants

were unaware that they have specific health conditions. Moreover, as noted by Bombak and Bruce in their review of published studies (2012), “differences in how SRH [self-rated health] is assessed by ethnicities have been detected” (p. 1). Their research raises questions about the utility of comparing Indigenous and non-Indigenous respondents with regard to self-reports.

Conclusions and Recommendations

The goal of this paper was to assess whether quantitative survey data about a “general” representative sample of homeless and vulnerably housed adults in three Canadian cities was able to provide insights into the following question: among an already marginalized population of homeless and vulnerably housed adults, does Indigenous ancestry impact health and housing outcomes? This question was investigated through an intersectional lens, given the recognition that social identities are complex. To this end, participants were sorted into three equal size groups based on Indigenous ancestry and citizenship and also matched on the basis of city, age, and gender. The analyses presented above provide some evidence that Indigenous ancestry does have impacts on health. On measures having to do with physical health status and chronic conditions, there were statistically significant differences between the Indigenous identity group and others, and within the Indigenous identity group, gender differences also were statistically significant with regard to mental health functioning, physical health functioning and the extent of chronic conditions. With regard to housing outcomes, none of the analyses conducted thus far revealed any statistically significant differences but there were some intriguing trends that warrant further investigation.

The limitations of using a comparative, quantitative approach have been noted as well. Given the breadth of the HHiT study however, these limitations also point out how further analyses might proceed. One potentially productive examination will be to explore the detailed housing histories of the matched participants to compare patterns of transitions over time together with the reasons given for each move. In addition, further insights might be garnered through a comparative examination of the qualitative responses of interviews in a side-study now underway with a sub-sample of HHiT participants (ten women and ten men in each of the three cities).

References

- Belanger, Yale D., Olu Awosoga, and Gabrielle Weasel Head. "Homelessness, Urban Aboriginal People, and the Need for a National Enumeration." *aboriginal policy studies* 2 (2013): 4-33.
- Belanger, Yale, D., Ola Weasel Head, and Gabrielle Awosoga. "Housing and Aboriginal People in Urban Centres: A Quantitative Evaluation." *aboriginal policy studies* 2 (2012): 4-25.
<http://dx.doi.org/10.5663%2Faps.v2i1.17705>
- Belanger, Yale. D., Gabrielle Weasel Head and Ola Awosoga. (2011). "Assessing urban Aboriginal housing and homelessness in Canada." Final Report prepared for the National Association of Friendship Centres (NAFC) and the Office of the Federal Interlocutor for Métis and Non-Status Indians (OFI), Ottawa, Ontario. March 30, 2012
- Benbow, Sarah, Cheryl Forchuk, and Susan L. Ray. "Mothers with Mental Illness Experiencing Homelessness: A Critical Analysis." *Journal of Psychiatric and Mental Health Nursing* 18 (2011): 687-695. doi: 10.1111/j.1365-2850.2011.01720.x
- Benoit, Cecilia, Dena Carroll, and Munaza Chaudhry. "In search of a healing place: Aboriginal women in Vancouver's Downtown Eastside." *Social Science & Medicine* 56 (2003): 821-833. doi: [http://dx.doi.org/10.1016/S0277-9536\(02\)00081-3](http://dx.doi.org/10.1016/S0277-9536(02)00081-3)
- Bombak, Andrea E., and Sharon G. Bruce. "Self-Rated Health and Ethnicity: Focus on Indigenous Populations." *International Journal of Circumpolar Health* 71 (2012): 1-10. doi: [10.3402/ijch.v71i0.18538](http://dx.doi.org/10.3402/ijch.v71i0.18538)
- Canada Mortgage and Housing Corporation. "Housing in Canada online." (2014).
http://cmhc.beyond2020.com/HiCODefinitions_EN.html#_Core_Housing_Need_Status
- Christensen, Julia. (n.d., n.p.). Indigenous Peoples in Canada and Colonial Legacies.
- Crenshaw, Kimberle. "Mapping the Margins: Intersectionality, Identity Politics and Violence Against Women in Colour." *Stanford Law Review* 6 (1991): 1241-99.
- Gaetz, Stephen, Jesse Donaldson, Tim Richter, and Tanya Gulliver. *The State of Homelessness in Canada in 2013*. Toronto: Canadian Homelessness Research Network Press, 2013.
- Gionet, Linda, and Shirin Roshanafshar (2013). "Select Health Indicators of First Nations People Living Off Reserve, Métis and Inuit." *Health at a Glance* January 2013 (2013): 1-14.
<http://www.statcan.gc.ca/pub/82-624-x/2013001/article/11763-eng.htm#n1>
- Greene, Saara, Lori Chambers, Khatundi Masinde, and Doris O'Brien-Teengs. "A House is not a Home: The Housing Experiences of African and Caribbean Mothers Living with HIV." *Housing Studies* 23 (2013): 116-134.

Hankivsky, Olena, Colleen Reid, Renee Cormier, Colleen Varcoe, Natalie Clark, Cecilia Benoit, and Shari Brotman. "Exploring the Promises of Intersectionality for Advancing Women's Health Research." *International Journal for Equity in Health* 9 (2010): doi:10.1186/1475-9276-9-5

Hwang, Stephen W., Tim Aubry, Anita Palepu, Susan Farrell, Rosane Nisenbaum, Anita M. Hubley, Fran Klodawsky, Evie Gogosis, Elizabeth Hay, Shannon Pidlubny, Tatiana Dowbor, and Catharine Chambers. "The Health and Housing in Transition Study: A Longitudinal Study of the Health of Homeless and Vulnerably Housed Adults in Three Canadian Cities." *International Journal of Public Health* 56 (2011): 609-623. doi: 10.1007/s00038-011-0283-3

Hwang, Stephen. "Research Proposal: The Health and Housing in Transition (HHiT) Study: A Longitudinal Study of the Health of Homeless and Vulnerably Housed Adults in Vancouver, Toronto, and Ottawa." Submitted to Canadian Institute for Health Research, 2008.

Klodawsky, Fran, Rebecca Nemiroff, and Tim Aubry. "Homeless Immigrants' and Refugees' Health Over Time." In *Homelessness and Health in Canada*, edited by Manal Guirguis-Younger, Ryan MacNeil, and Stephen W. Hwang. Ottawa: University of Ottawa Press, forthcoming 2014.

Lix, Lisa M., Colleen Metge, and William D. Leslie. "Measurement Equivalence of Osteoporosis-Specific and General Quality-of-Life Instruments in Aboriginal and non-Aboriginal Women." *Quality of Life Research* 18 (2009): 619-627. doi: 10.1007/s11136-009-9470-6

Mair, Christine A. "Social Ties and Depression: An Intersectional Examination of Black and White Community-Dwelling Older Adults." *Journal of Applied Gerontology* 29 (2010): 667-696. doi: 10.1177/0733464809350167

Marshall, Brandon D. L., Thomas Kerr, Chris Livingstone, Kathy Li, Julio S. G. Montaner, and Evan Wood. "High Prevalence of HIV Infection among Homeless and Street-involved Aboriginal Youth in a Canadian Setting." *Harm Reduction Journal* 5 (2008): doi:10.1186/1477-7517-5-35

Menzies, Peter. (2009). "Homeless Aboriginal Men: Effects of Intergenerational Trauma." In *Finding Home: Policy Options for Addressing Homelessness in Canada* edited by J. David Hulchanski, J.D, Philippa Campsie, Shirley B. Y. Chau, Stephen W. Hwang, and Emily Paradis, 457-481. Toronto: Cities Centre, 2009.

Monette, LaVerne, Sean B. Rourke, Katherine Gibson, Tsegaye M. Bekele, Ruthann Tucker, Saara Greene, Michael Sobota, Jay Koornstra, Steve Byers, Elisabeth Marks, Jean Bacon, James R. Watson, Stephen W. Hwang, Amrita Ahluwalia, James R. Dunn, Dale Guenter, Keith Hambly, Shafi Bhuiyan, and The Positive Spaces, Healthy Places Study Team. "Inequalities in determinants of health among Aboriginal and Caucasian persons living with HIV/AIDS in Ontario: Results from the Positive Spaces, Healthy Places Study." *Canadian Journal of Public Health* 102 (2011): 214-19.

Norris, Mary Jane, Stewart Clatworthy, and Evelyn Peters. "The Urbanization of Aboriginal Populations in Canada: A Half Century in Review." In *Indigenous in the City: Contemporary*

Identities and Cultural Innovation, edited by Evelyn Peters and Chris Andersen, 29-45. Vancouver. Toronto: UBCPress, 2013.

O'Donnell, Vivian, and Heather Tait. "Aboriginal Peoples Survey – Initial Findings: Well-Being of the non-reserve Aboriginal Population." (2003)
<http://publications.gc.ca/Collection/Statcan/89-589-X/89-589-XIE2003001.pdf#page=1&zoom=auto,0,800>

O'Donnell, Vivian, and Susan Wallace. "First Nations, Métis and Inuit Women." In *Women in Canada: A Gender-based Statistical Report, Sixth Edition*, by Social and Aboriginal Statistics Division of Statistics Canada, 205-249. Statistics Canada, 2011.
<http://www.statcan.gc.ca/pub/89-503-x/2010001/article/11442-eng.htm#a37>

Peters, Evelyn. "'I Like to Let Them Have Their Time': Hidden Homeless First Nations People in the City and Their Management of Household Relationships." *Social and Cultural Geography* 13 (2012): 321-338.

Peters, Evelyn and Vince Robillard. "'Everything You Want is There': The Place of the Reserve in First Nations' Homeless Mobility." *Urban Geography* 30 (2009): 652-680.
doi: <http://dx.doi.org/10.2747/0272-3638.30.6.652>

Scott, Nick, and Janet Siltanen. "Gender and Intersectionality - a Quantitative Toolkit for Analyzing Complex Inequalities." Prepared for Human Resources and Skills Development Canada, December 2012.

Senese, Laura C., and Kathi Wilson (2013). "Aboriginal Urbanization and Rights in Canada: Examining Implications for Health." *Social Science and Medicine* 91 (2013): 219-228. doi: <http://dx.doi.org/10.1016/j.socscimed.2013.02.016>

Snyder, Marcie, and Kathi Wilson. (2012). "Urban Aboriginal Mobility in Canada: Examining the Association with Health Care Utilization." *Social Science and Medicine* 75 (2012): 2420-2424. doi: <http://dx.doi.org/10.1016/j.socscimed.2012.09.020>

Public Health Agency of Canada. "Population-Specific HIVS/AIDS Status Report: Aboriginal Peoples." 2010. <http://www.phac-aspc.gc.ca/aids-sida/publication/ps-pd/index-eng.php>.

Statistics Canada. "Population of Census Metropolitan Areas. 2013.

Statistics Canada. "Aboriginal Peoples of Canada: A Demographic Profile." *2001 Census: Analysis Series* (2003).

The EuroQol Group. "EuroQol - A New Facility for the Measurement of Health-Related Quality of Life." *Health Policy* 16 (1990): 199-208.

- Tjepkema, Michael. "The Health of the Off-Reserve Aboriginal Population." *Supplement to Health Reports* 13 (2002): 1-17. <http://www.statcan.gc.ca/pub/82-003-s/2002001/pdf/82-003-s2002004-eng.pdf>
- Thurston, Wilfreda E., Andrea Soo, and David Turner. "Are There Differences between the Aboriginal Homeless Population and the non-Aboriginal Homeless Population in Calgary?" *Pimatisiwin: A Journal of Aboriginal and Indigenous Community Health* 11 (2013): 283-292.
- Toro, Paul A., Julie M. Passero Rabideau, Charles W. Bellavia, Chester V. Daeschler, David D. Wall, David M. Thomas, and Sheila J. Smith. "Evaluating an Intervention for Homeless Persons: Results of a Field Experiment." *Journal of Consulting and Clinical Psychology* 65 (1997): 476-484. doi: [10.1037/0022-006X.65.3.476](https://doi.org/10.1037/0022-006X.65.3.476)
- Vanderkooi, Otto G., Deidre L. Church, J. MacDonald, Franziska Zucol, and James D. Kellner. "Community-Based Outbreaks in Vulnerable Populations of Invasive Infections Caused by Streptococcus Pneumonia Serotypes 5 and 8 in Calgary, Canada." *PLoS One* 6 (2011): e28547.
- Veenstra, Gerry. "Race, Gender, Class and Sexual Orientation: Intersecting Axes of Inequality and Self-Rated Health in Canada." *International Journal for Equity in Health* 10 (2011)
- Veenstra, Gerry. "Racialized Identity and Health in Canada: Results from a Nationally Representative Survey." *Social Science and Medicine* 69 (2009): 538-542. doi: <http://dx.doi.org/10.1016/j.socscimed.2009.06.009>
- Ware Jr, John. E, Mark Kosinski, and Susan D. Keller. *SF-12: How to Score the SF-12 Physical and Mental Health Summary Scales, third edition*. Lincoln: QualityMetric Incorporated, 1998.
- Ware, Jr., John E., Mark Kosinski, and Susan D. Keller. "The 12-Item Short-Form Health Survey: Construction of Scales and Preliminary Tests of Reliability and Validity." *Medical Care* 34 (1996): 220-233.
- Wilson, Kathi, Mark W. Rosenberg, and Sylvia Abonyi. "Aboriginal peoples, Health and Healing Approaches: The Effects of Age and Place on Health." *Social Science and Medicine* 72 (2011): 355-364. doi: <http://dx.doi.org/10.1016/j.socscimed.2010.09.022>
- Wood, Evan, Julio S. G. Montaner, Kathy Li, Ruth Zhang, Lucy Barney, Steffanie A. Strathdee, Mark Tyndall, and Thomas Kerr. "Burden of HIV Infection among Aboriginal Injection Drug Users in Vancouver, British Columbia." *American Journal of Public Health* 98 (2008): 515-519.