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Examining the relationship between social support availability, urban center size, and self-perceived mental health of recent immigrants to Canada: A mixed-methods analysis

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ABSTRACT

The experiences of settlement in a new country (e.g., securing housing and employment, language barriers) pose numerous challenges for recent immigrants that can impede their health and well-being. Lack of social support upon arrival and during settlement may help to explain why immigrant mental health status declines over time. While most urban centers in Canada offer some settlement services, little is known about how the availability of social supports, and the health statuses of recent immigrants, varies by city size. The objective of this mixed-methods study was to examine the relationship between self-perceived mental health (SPMH), social support availability, and urban center size, for recent immigrants to Canada. The quantitative component involved analysis of 2009–2010 Canadian Community Health Survey data, selecting for only recent immigrants and for those living in either large or small urban centers. The qualitative component involved in-depth interviews with managers of settlement service organizations located in three large and three small urban centers in Canada. The quantitative analysis revealed that social support availability is positively associated with higher SPMH status, and is higher in small urban centers. In support of these findings, our interviews revealed that settlement service organizations operating in small urban centers offer more intensive social supports; interviewees attributed this difference to personal relationships in small cities, and the ease with which they can connect to other agencies to provide clients with necessary supports. Logistic regression analysis revealed, however, that recent immigrants in small urban centers are twice as likely to report low SPMH compared to those living in large urban centers. Thus, while the scope and nature of settlements services appears to vary by city size in Canada, more research is needed to understand what effect settlement services have on the health status of recent immigrants to Canada, especially in smaller urban centers.

1. Introduction

1.1. Immigration, acculturation and health: the 'healthy immigrant effect'

According to the 2011 National Household Survey, foreign-born immigrants account for 20.6% of Canada's population (Statistics Canada, 2011a), a proportion that is higher than both the United States (13%) and United Kingdom (10%) and only slightly lower than Australia (21%) (Siemiatycki and Triadafilopoulos, 2010). Immigrants to Canada display better health outcomes than native-born Canadians (Beiser, 2005), and experience a lower number of chronic conditions than their native-born counterparts (Newbold, 2006; McDonald and Kennedy, 2004; Perez, 2002). This difference may due to Citizenship and Immigration Canada's (CIC) strict medical screening procedures on newcomers and/or its selection criteria (i.e., Federal Skilled Workers program) that favour younger individuals with advanced education and job skills (CIC, 2014). Additionally, self-selection may account for health differences between immigrants and native-born Canadians, as healthier individuals may be better positioned to immigrate (Beiser, 2005).

Yet, while immigrants may experience better health outcomes upon arrival, this advantage declines over time (McDonald and

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Kennedy, 2004). This phenomenon of declining health with acculturation is known as the 'healthy immigrant effect' (Blair and Schneeberg, 2013), and has been observed repeatedly in Canada, the US, Australia, and the UK (Kennedy et al., 2006). In the Canadian context, one Montreal-based study observed this phenomenon in the context of chronic diseases (Meshefedjian et al., 2014), while analyses of the Longitudinal Survey of Immigrants to Canada have observed the 'healthy immigrant effect' for self-reported health (Newbold, 2009; Fuller-Thomson et al., 2011). The 'healthy immigrant effect' extends to mental health outcomes as well, both in terms of self-perceived mental health (SPMH) (Lou and Beaujot, 2005; Ali, 2002) and mental illness (Newbold, 2009; Smith et al., 2007). Such declines in mental health have also been observed outside of Canada, in Caribbean immigrants to the US (Williams et al., 2007), and in Latin American immigrants to Spain (Kirchner and Patiño, 2010).

Immigrating individuals are particularly at risk of developing poor mental health outcomes because they face multiple psychological stressors upon settlement, including living within a new home and community, adapting to different cultural norms, learning a new language, and obtaining employment. Yet, research by Newbold (2009) demonstrates that immigrants are less likely to transition to poor health over time if they report high satisfaction with their settlement experience. Thus, the settlement process is likely an important determinant of immigrants' mental health and well-being.

1.2. Social support and immigrant mental health

Declining mental health status among immigrants is likely influenced by settlement challenges associated with employment, housing, and social support networks (Dunn and Dyck, 2000). Social support, defined as "the subjective perception that help is available when needed and that one is valued by other people" (Puyat, 2013, pg.598), can help individuals cope with adversity and provide a buffer against health problems. Research by Lou and Beaujot (2005) found that immigrants report having fewer close friends and relatives, and that immigrants' SPMH is influenced to a greater degree by their levels of social support, relative to their Canadian-born counterparts. The authors attribute these findings to "acculturative stress", wherein immigrants experience alienation from their family and ethnicity, as well as exclusion from opportunities within their new country. A similar study found that immigrants with low levels of social support are significantly more likely to report a mental disorder than those with moderate or high levels of support, and this association is strongest among recent immigrants (Puyat, 2013).

Comparable findings have been observed outside of Canada. An analysis of Central American and Mexican immigrants to the US revealed that family dysfunction and ineffective social support were related to high levels of acculturative stress (Hovey, 1999). Similarly, two US studies found that social supports reduce depressive symptoms among Latino immigrants (Ornela and Perreira, 2011; Tran et al., 2014), while another US study found that low social supports for Filipino immigrant workers to be associated with mental health problems and substance use (Tsai and Thompson, 2013). Finally, in their study of Latin American immigrants to Barcelona, Kirchner and Patiño (2010) observed that religiosity mediates "the migratory stress–depression relationship" for women, and that this mediating effect declines with time since immigration (p.483). Taken collectively, these findings demonstrate the close relationship between social support availability and immigrant mental health, suggesting a lack of social support for immigrants during settlement may explain why their mental health status declines over time.

1.3. Immigrant settlement geography

According to the 2011 National Population Survey, 91% of immigrants to Canada live in Census Metropolitan Areas (CMAs) comprising a total population of 100,000 or more (Statistics Canada, 2012). Immigrants choose their area of settlement based primarily on the locations of family, friends, and jobs (Hyndman et al., 2006). However, they are also more likely to settle in areas with large existing immigrant populations, which accounts for the large number of immigrants in Canada's three largest cities (Montreal, Toronto, and Vancouver) (Hyndman et al., 2006). While Canada's federal government has expressed interest in attracting immigrants to smaller urban centers (CIC, 2001), attempts to achieve this goal have had limited success. Thus, smaller cities lose out on the economic benefits of immigration, including an increased tax base, labour force contributions, and professional skills that may benefit local businesses (Hyndman et al., 2006).

While the unequal distribution of immigrants across Canada is evident, the impact of settlement location on immigrant mental health has yet to be established. Since larger urban centers are receiving a disproportionate number of immigrant citizens, it is possible that these areas are better equipped to provide settlement services to newcomers. However, it is also possible that service capacities in larger urban areas are overwhelmed, and that smaller urban areas are better prepared to address the needs of arriving immigrants. If immigrant settlement experiences do differ between smaller and larger urban centers in Canada, then geographic disparities in immigrant mental health may be present.

1.4. Immigrant settlement services

While some immigrating individuals and families may receive significant social support from family and friends already established within Canada, many do not have these pre-existing support networks, and thus turn to local settlement service organizations (SSOs) for support (Stewart et al., 2008). SSOs in Canada's urban areas provide services to arriving immigrants such as counseling, language lessons, employment support, social networking opportunities, immigration documentation assistance, and referrals to other community services. The comprehensive scope of settlement programs offered in Canada compared to other comparable countries has been attributed to both immigrant-positive attitudes among citizens, and a long-standing multi-government approach to immigrant integration across the country (Siemiatycki and Triadafilopoulous, 2010). In contrast to Canada, Australian and US approaches involves strong national authority over immigration, and restrictions on service eligibility, while approaches employed in Germany and the UK facilitate greater control by sub-national jurisdictions, but with limited success (Siemiatycki and Triadafilopoulous, 2010).

In Canada, both the federal and provincial governments provide funding for SSOs, through unique funding agreements established between each province and the federal citizenship and immigration bureau (Sadiq, 2004). Rapid demographic changes within growing urban centers may outpace the federal policy changes that lead to the creation or expansion of settlement organizations, and national coordination of settlement service provision is lacking (Simich et al., 2005). These factors have led to a lack of uniformity in the scope of settlement services across Canada, and spatial disparities in the supports available to immigrants upon arrival. Furthermore, challenges such as inadequate funding, staffing shortages, limited mandates, and gaps in service partnerships may negatively impact the quality and breadth of settlement programing offered by particular organizations (Simich et al., 2005; Stewart et al., 2008). Given the reliance of recent immigrants on SSOs for

support upon arrival, and the importance of such support for mental health, geographic disparities in the availability and breadth of settlement service programming may, in turn, lead to geographic disparities in the mental health status of newcomers to Canada.

1.5. Knowledge gaps and study objectives

Almost all immigrant health research in Canada has focused on comparing the health of immigrants to native-born Canadians. However, little research explores health disparities within the immigrant population of Canada. In particular, it is unclear how settlement services vary by geographic areas across Canada (Newbold, 2009), and in turn, whether differences in social support availability are associated with differences in the mental health of recent immigrants to Canada. If such geographic disparities exist, then the area in which an immigrant chooses to settle may influence their mental health as they become established in Canada.

The objectives of this study were to compare the self-perceived mental health (SPMH) of recent immigrants in large and small urban centers across Canada, and assess whether disparities in mental health status may be attributable to settlement location and/or availability of social supports. This analysis was supplemented by contextual data gathered through interviews about the scope and delivery of settlement services in selected small and large urban centers across the country.

2. Methods

2.1. Methodology

This study involved an explanatory mixed-methods design, in which qualitative data were collected and analyzed for the purposes of assisting with interpretation of the quantitative findings (Creswell and Plano Clark, 2007). Quantitative data were extracted from the 2009–2010 Canadian Community Health Survey (CCHS) public use micro-data file and analyzed in December 2013, while qualitative data was collected in January and February 2014 through a series of telephone interviews with coordinators working at SSOs in Ottawa, ON, Kingston, ON, Vancouver, BC, Victoria, BC, Edmonton, AB, and Lethbridge, AB. Ethics approval for the interview process was granted by the General Research Ethics Board at Queen's University.

2.2. Quantitative component

2.2.1. Dataset characteristics

We analyzed the 2009–2010 CCHS dataset, as it provides estimates on health status, health care utilization, and health determinants at the health region level (Statistics Canada, 2011b). The two-year data file was chosen over the available annual files, since it offers a larger sample size. The CCHS is administered to Canadians 12 years and older living in private dwellings in all provinces and territories across Canada, and excludes those living on-reserve and in institutions, full-time members of the Canadian forces, and individuals living in certain remote regions. The results are considered representative of approximately 98% of the population (Statistics Canada, 2011b).

2.2.2. Sample population

The CCHS captures the number of years immigrants have lived in Canada (Statistics Canada, 2011b), which is then dichotomized by length of residency (0–9 years, or 10 or more years). Recent immigrant respondents (0–9 years of residency) were chosen as the sample population for this study (Fig. 1), since much of the literature on immigrant mental health decline has focused on established immigrants. Additionally, the initial years of settlement are typically the period of time when an immigrant's social support structures are the most precarious, and when they are most likely to engage with SSOs that are mandated to serve recently immigrated individuals whom have not yet obtained citizenship (Robson-Haddow and Ladner, 2005).

While the CCHS data is stratified by health region, settlement services are typically administered at the municipality level (Sadiq, 2004). For our purposes of comparing immigrant mental health

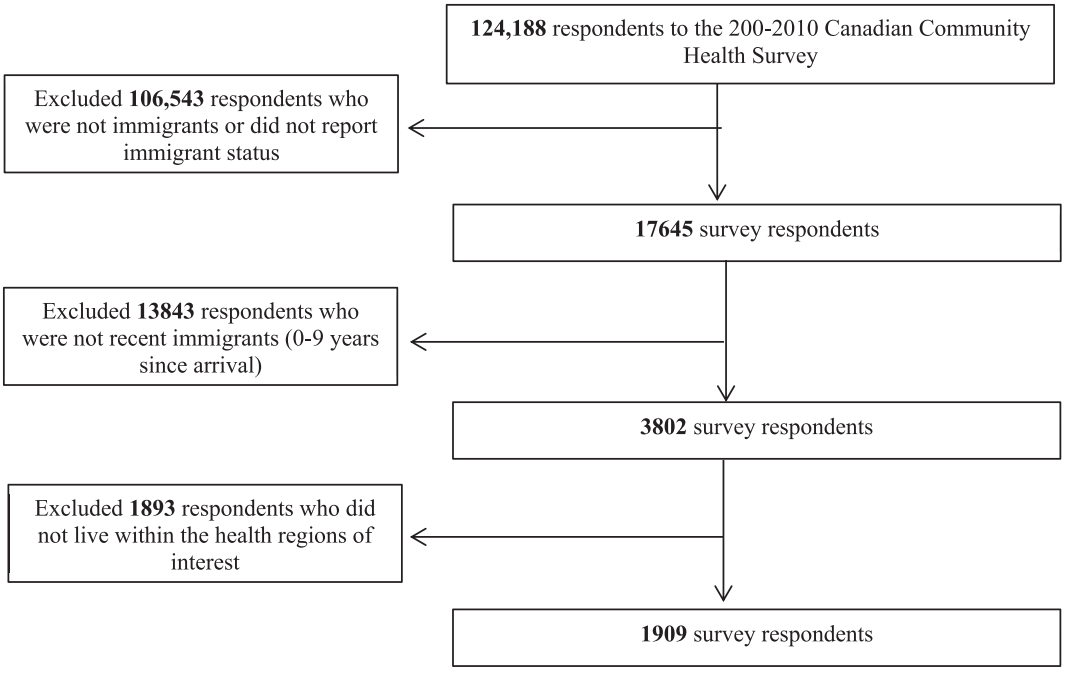

Fig. 1. Selection strategy for CCHS respondents.

status and social support availability between large and small urban centers, the health regions sampled in the CCHS were matched with their corresponding Census Metropolitan Areas (CMAs) using data from the 2011 Census (Statistics Canada, 2012; Statistics Canada, 2011b). Using the 2011 Census population counts, CMAs were categorized as 'large' if their population at the time of the census was 1,000,000 people or more. CMAs were categorized as 'small' if their population at the time of census was between 100,000 and 400,000 people. Medium sized CMAs, defined as those with populations between 400,000 and 1,000,000, were excluded from study to offer a clearer distinction between the largest and smallest urban centers of Canada. Following the identification of the CMAs of interest, CMAs were matched with their corresponding health regions in the 2009–2010 CCHS (Table 1). While the geographic boundaries of the CCHS health regions do not align exactly with Canada's designated CMAs, the health regions offer reasonable approximations for the CMAs.

Table 1
CMAs in the analytic sample and their corresponding 2009–2010 CCHS Health Regions.

CMA	Population[a]	Health region	CCHS sample size[b]
Large urban centers			
Montréal (Que.)	3,824,221	Région de Montréal	2872
Ottawa-Gatineau (Ont.)	1,236,324	City of Ottawa health unit	1951
Toronto (Ont.)	5,583,064	City of Toronto health unit	3947
Calgary (Alta.)	1,214,839	Calgary zone	2707
Edmonton (Alta.)	1,159,869	Edmonton zone	2517
Vancouver (B.C.)	2,313,328	Vancouver health service delivery area	1467
Small urban centers			
St. John's (N.L.)	196,966	Eastern regional health authority	1525
Halifax (N.S.)	390,328	Zone 6 (District Health Authority 9)	1272
Cape Breton (N.S.)	101,619	Zone 5 (District Health Authority 8)	723
Moncton (N.B.)	138,644	Zone 1	937
Saint John (N.B.)	127,761	Zone 2	948
Saguenay (Que.)	157,790	Région du Saguenay – Lac-Saint-Jean	1240
Sherbrooke (Que.)	201,890	Région de l'Estrie	1155
Trois-Rivières (Que.)	151,773	Région de la Mauricie et du Centre-du-Québec	1498
Kingston (Ont.)	159,561	Kingston, Frontenac and Lennox & Addington health unit	963
Peterborough (Ont.)	118,975	Peterborough county-city health unit	792
Oshawa (Ont.)	356,177	Durham regional health unit	1566
St-Catherines-Niagara (Ont.)	392,184	Niagara regional area health unit	1452
Brantford (Ont.)	135,501	Brant county health unit	757
Guelph (Ont.)	141,097	Wellington–Dufferin–Guelph health unit	1100
Chatham–Kent (Ont.)	104,075	Chatham–Kent health unit	748
Windsor (Ont.)	319,246	Windsor–Essex county health unit	1354
Barrie (Ont.)	187,013	Simcoe Muskoka district health unit	2122
Greater Sudbury (Ont.)	160,770	Sudbury and district health unit	1032
Thunder Bay (Ont.)	121,596	Thunder Bay and district health unit	1304
Regina (Sask.)	210,556	Regina Qu'Appelle regional health authority	1226
Saskatoon (Sask.)	260,600	Saskatoon regional health authority	1268
Lethbridge (Alta.)	105,999	South zone	1701
Kelowna (B.C.)	179,839	Okanagan health service delivery area	1177
Abbotsford-mission (B.C.)	170,191	Fraser East health service delivery area	937
Victoria (B.C.)	344,615	South Vancouver Island health service delivery area	1280

[a] (Statistics Canada, 2012).
[b] (Statistics Canada, 2011b).

2.2.3. Survey variables

Self-perceived mental health (SPMH) was our primary outcome measure, and was recoded into a dichotomous variable of high (i.e., excellent or very good) and low (i.e., good, fair, or poor) to ensure the group sample sizes were sufficient for comparison. This treatment on the SPMH measure has been performed in a similar study of immigrants to Canada (Puyat, 2013), and is an established approach to modifying self-reported health measures (Manor et al., 2000). Social support availability was included as an explanatory variable, as well as a secondary outcome measure. Derived from the Medical Outcomes Study (MOS) Social Support Survey (Sherbourne and Stewart, 1991), the CCHS included four scales of social support availability: Tangible Support; Positive Social Interaction; Emotional or Informational Support; and Affection. The Affection scale was excluded from our analysis since these questions relate to intimate and affectionate forms of social support that are beyond the scope of services provided by SSOs. Tangible Support scores were derived from responses to questions about the availability of someone to take care of the respondent when ill, take them to the doctor, or feed them meals (Sherbourne and Stewart, 1991). Positive Social Interaction scores reflected questions about having someone to socialize with and someone to get together with for relaxation. Emotional or Informational Support scores pertained to the availability of someone to receive advice from and confide in. Scores on the Tangible Support and Positive Social Interaction scales ranged from 0 to 16, while scores on the Emotional or Informational Support scale ranged from 0 to 32. On all three scales, higher scores indicate higher levels of social support. Urban Center Size was the final explanatory variable, and was recoded as 'large' or 'small', depending on the health region in which respondents resided (Table 1).

Demographic variables that may influence SPMH and social support availability were also incorporated in the analysis. These included Sex, Age, Marital Status, Education, and Annual Household Income. The Age variable consisted of '12–24 years', '25–39 years', and '40 and older'. Marital Status consisted of 'married or common law', 'widowed, separated or divorced', and 'single or never married'. Education consisted of 'some post-secondary or less' and 'graduate post-secondary or more'. Finally, Annual Household Income consisted of 'less than $20,000', '$20,000 to $59,999', and '$60,000 or more'.

2.2.4. Statistical analysis

Statistical analysis first involved Chi-square and Mann–Whitney U tests to assess the relationship between SPMH and urban center size, social support availability, and demographic covariates. Cramer's V statistics were reported to indicate the strength of each association (with 0 indicating no correlation and 1 indicating complete correlation). Next, we employed Mann–Whitney U tests to assess the relationship between urban center size and social support availability. Finally, a binary logistic regression analysis was performed to assess whether reporting low SPMH could be predicted by social support availability, urban center size, and demographic covariates. For this analysis, we combined the three social support scales to create a composite scale, by taking the sum of the tangible social support score, positive social interaction score, and emotional or informational support score for each respondent. To ensure the three social support scales were given equal weighting in our composite scale, we divided the scores on the emotional or informational support scale

by two. All statistical tests were reported with the inclusion of a proportional weight variable, to establish population-wide estimates (Statistics Canada, 2011b). All data analysis was conducted using SPSS Statistics Software version 22.

2.3. Qualitative component

2.3.1. Sample population

Qualitative data collection and analysis was carried out from January to April 2014, to offer insights on the quantitative findings (Creswell and Plano Clark, 2007). We interviewed managers or coordinators working at SSOs because of their knowledge about the programs offered by SSOs, and their familiarity with the landscape of social support availability and immigrant mental health within their urban center as a whole. Interviews were conducted with managers/coordinators working in six urban centers that were included in the quantitative analysis; three from large urban centers (Edmonton AB, Vancouver BC, and Ottawa ON), and three from small urban centers (Lethbridge AB, Victoria BC, and Kingston ON). We purposefully sampled one small and one large urban center from three provinces, to ensure that differences in social support availability between large and small cities could not be attributed to differences in provincial jurisdiction alone.

2.3.2. Interview recruitment

Within the six selected urban centers, SSOs were identified through Internet searches using the keywords 'immigrant', 'settlement' and 'services' as well as the name of each urban center, yielding multiple relevant organizations. From these initial searches, SSOs were chosen based on offering a broad scope of service and to all immigrant groups. Potential interviewees were identified from SSO websites, and initially contacted with a recruitment email that contained a letter of information, consent form, and interview guide. There were no refusals among settlement managers or coordinators invited to participate, however 9 individuals from 8 different organizations were contacted before the final six interviewees confirmed their participation.

2.3.3. Interview procedure

Interviews were conducted over the phone, and averaged 44 minutes in length. A semi-structured interview guide was followed in each interview, and drawing from the definitions of social supports as employed in the CCHS survey, asked interviewees to describe how, if at all, their organization offered access to tangible social supports (such as physician appointment accompaniment or meal preparation), positive social interaction (such as group field trips and mentorship programs) and emotional or informational support (such as counseling services). Finally, participants were asked to offer insights into the unique advantages and/or challenges immigrants face living within their urban area, and to comment on any differences they felt might exist in social support and immigrant mental health between large and small urban centers. The participants were encouraged to answer the questions based on their knowledge of their own organization's programs, as well as programs offered by other organizations within the same urban center.

2.3.4. Interview analysis

Each interview was audio-recorded, transcribed verbatim by a professional transcriptionist, and analyzed using a basic content analysis approach (Weber, 1990). Drawing from themes covered in the interviews, social support programs that were described by the interviewees were categorized by their primary form of social support provision (tangible support, positive social interaction, or emotional or informational support), and then compared and contrasted between respondents from small and large urban centers. Aspects such as program structure, attendance, perceived success, and utilization by demographic groups were also noted. Perspectives on the potential advantages and disadvantages of settlement in small and large urban centers were collected from all interviewees and analyzed accordingly. The findings generated from the interviews were then compared and contrasted with the quantitative results to identify potential explanations for the observed relationships between SPMH, social support availability, and urban center size.

3. Quantitative results

3.1. Survey respondent characteristics

The majority of respondents in our sample were female (55%), 25–39 years of age (51%), married or common-law (60%), and had graduated post-secondary school (67%) (Table 2). Close to half (46%) had annual household incomes between $20,000-$60,000, and the vast majority (75%) lived in large CMAs.

3.2. Self-perceived mental health of recent immigrants

Table 2 displays the relationship between SPMH and demographics, urban center size, and social support availability. Age, marital status, income, and all three scales of social support were significantly associated with SPMH, while sex, educational attainment, and urban center size were not significantly associated with SPMH in the univariate analysis.

3.3. Urban center size and social support availability

Mann–Whitney U tests were also conducted to determine if there were significant differences in the scores for each social support availability scale between respondents from small versus large urban centers (Table 3). For all three scales, scores were significantly higher (indicative of greater social support availability) in small versus to large urban centers.

3.4. Logistic regression analysis

Table 4 displays the results of the logistic regression analysis. The Hosmer and Lemeshow test was not significant ($p = 0.692$), indicating a good model fit. The model explained 12.3% of the variance in the respondents' SPMH (Nagelkerke R^2), and correctly classified 79.3% of cases (a 2.7% increase in classification accuracy from the null model). Unlike the univariate analysis, urban center size did emerge as a significant predictor of SPMH in the multivariate regression model ($p < 0.001$), with respondents from small urban centers more than twice as likely to report low SPMH ($OR = 2.095$). Meanwhile, increasing availability of social supports was associated with only slightly lower likelihood of reporting low SPMH ($OR = 0.979$). Thus, even though respondents in small urban centers reported greater availability of social supports, and more social support is associated with better SPMH, the regression analysis findings show that immigrants living in small urban centers are more likely to report poor SPMH relative to their counterparts living in large urban centers.

4. Qualitative results

4.1. Overview of the settlement service organizations

Employees from SSOs in three large (Ottawa, ON, Vancouver, BC, and Edmonton, AB) and three small (Kingston, ON, Victoria, BC, and

Table 2
Respondent characteristics, associations between self-perceived mental health, demographics and urban center size, and tests of significant difference in self-perceived mental health by social support availability, for recent immigrants to Canada.

Categorical independent variables	Respondent profile		Self-perceived mental health status				Chi-square tests[a]		
	Total		High		Low		P-value	X^2	Cramer's V
	N	% (by IV)	N	%[a]	N	%[a]			
Sex									
Male	838	44.7	652	74.6	186	25.4	0.067	3.362	–
Female	1036	55.3	781	77.1	255	22.9			
Age									
12–24	446	23.8	351	79.9	95	20.1	<0.001	40.544	0.098
25–39	957	51.1	742	78.0	215	22.0			
40+	471	25.1	340	69.4	131	30.6			
Marital status									
Married or common-law	1113	59.5	860	75.8	253	24.2	<0.001	28.941	0.083
Widowed, separated, or divorced	109	5.8	66	66.2	43	33.8			
Single or never married	650	34.7	507	79.3	143	20.7			
Education									
Some post-secondary or less	619	33.4	469	76.1	150	23.9	0.861	0.031	–
Graduated post-secondary or more	1234	66.6	948	75.9	286	24.1			
Total household income									
Less than $20,000	268	18.0	195	68.1	73	31.9	<0.001	27.232	0.089
$20,000–$59,999	682	45.8	525	78.1	157	21.9			
$60,000 or more	538	36.2	426	77.7	112	22.3			
Urban center size									
Large	1404	74.9	1078	76.2	326	23.8	0.783	0.076	–
Small	470	25.1	355	75.8	115	24.2			

Scaled independent variables	Respondent profile	Self-perceived mental health status		Mann–Whitney U Tests[a]		
	Total	High	Low	P-value	U statistic	Z score
Tangible social support availability (0–16)						
N	1379	1327	53	0.005	149,385	−2.808
Mean	12.17	12.28	9.38			
Standard deviation	4.028	3.942	5.088			
Positive social interaction availability (0–16)						
N	1376	1322	54	<0.001	139,413.50	−4.422
Mean	12.84	12.98	9.57			
Standard deviation	3.462	3.325	4.904			
Emotional/informational support availability (0–32)						
N	1377	1323	54	<0.001	139,047.50	−4.442
Mean	25.79	26.07	19.07			
Standard deviation	6.819	6.573	9.027			

[a] Based on weighted cases.

Table 3
Tests of significant differences between large versus small urban centers in social support availability for recent immigrants to Canada.

Dependent variables	Size of urban center			Mann–Whitney U tests[a]		
	Total	Small	Large	P-value	U statistic	Z score
Tangible social support availability (0–16)						
N	1379	704	675	<0.001	288,675	6.755
Mean	12.17	12.97	11.33			
Standard deviation	4.028	3.442	4.410			
Positive social interaction availability (0–16)						
N	1376	704	672	<0.001	277,699	5.545
Mean	12.84	13.32	12.35			
Standard deviation	3.462	3.225	3.631			
Emotional or informational support availability (0–32)						
N	1377	703	673	<0.001	284,983	6.412
Mean	25.79	26.96	24.58			
Standard deviation	6.819	6.257	7.165			

[a] Based on weighted cases.

Lethbridge, AB) urban centers were interviewed for the study. Each described their SSO's vision of inclusive and diverse communities, and mandates of supporting newcomers throughout the settlement process. Some of the organizations focused exclusively on providing services to newcomers to Canada, while others had broader community health and social service mandates that included an immigrant settlement service department. Each SSO employed settlement workers that engage in one-on-one meetings with individuals and families to provide support, information, and referrals to other community agencies, as well as group programs. While some offered specific language and employment programs, others referred immigrants to external agencies to meet those needs. The SSOs that were sampled serve roughly equal numbers of female and male clients, and the majority of their clients are working age (i.e., between 25 and 60 years old).

Most of the interviewees reported that their organization was funded both provincially and federally, while some also received municipal funding. Federal funding for SSOs was limited to services for recently immigrated Canadians (i.e., arrived within past 3–5 years) with permanent residency status. Supplementary provincial and municipal funding was used to fund services for immigrants with a longer duration of residency, and with different immigration

Table 4
Binary logistic regression analysis results for likelihood of reporting low self-perceived mental health by urban center size, social support availability, and demographics.[a]

Predictors	P-value	Odds ratio	95% CI
Urban Center Size			
Large	Ref	–	–
Small	<0.001	2.095	1.542–2.846
Social support composite score	0.005	0.979	0.964–0.993
Age			
12–24	Ref	–	–
25–39	0.023	0.563	0.344–0.923
40+	0.228	0.708	0.404–1.241
Gender			
Male	Ref	–	–
Female	0.034	1.381	1.025–1.862
Marital status			
Married or common-law	Ref	–	–
Widowed, separated or divorced	<0.001	2.742	1.707–4.403
Single or never married	0.582	1.118	0.753–1.659
Education			
Some post-secondary or less	Ref	–	–
Graduated post-secondary or more	0.724	1.066	0.749–1.516
Total household income			
None or <$20,000	Ref	–	–
$20,000–$59,999	<0.001	0.517	0.362–0.738
$60,000 or More	<0.001	0.426	0.274–0.661

[a] The proportional weight was applied to the regression analysis. The analysis was based on N = 506 unweighted cases, which translated to N = 1149 cases with the weight applied.

statuses (such as temporary foreign workers and refugees). Word-of-mouth was the primary mechanism by which these organizations generated new immigrant clientele.

4.2. Scope of social support provision by SSOs

4.2.1. Tangible social supports

Most interviewees indicated that tangible support provision (such as meal provision, doctor's appointment accompaniment or home care during illness) was not a key aspect of their organization's services. In large urban centers, SSO clients requiring tangible social supports would be referred to other community agencies or the local public health unit, while interviewees from SSOs in small urban centers indicated that direct provision of this type of support happens frequently. For instance, the Lethbridge interviewee described how settlement workers take very active roles in connecting clients with tangible social supports:

> We fill out applications; we teach clients how to phone and arrange Access a Ride bus … if … they need to see a doctor, now from time to time, a settlement practitioner will just drive them. That's not part of their job, but if it's an important appointment, and if we need to be there in order to assist with the next steps … we will go pick up the clients, be with them at that appointment … And it's all about … ensuring that people do understand what they need to do and then slowly pulling back when you feel that they do feel comfortable with all these news things. (Lethbridge SSO, January 29, 2014)

The interviewee from Kingston indicated that in situations of crisis, such as women facing violence at home, SSO staff would accompany clients to shelters, legal support centers and other necessary service providers. Tangible support in meal provision or physician appointment accompaniment was arranged for with external agencies such as local churches. Thus, while almost all agencies utilized referral processes to meet their client's tangible support needs, employees from SSOs in smaller urban centers more often engage in direct provision of these services, despite the fact that this is not a part of their job descriptions.

4.2.2. Positive social interaction

Each of the six interviewees described how regular group sessions, organized by particular demographic groups (e.g., women, seniors, youth) or interests (e.g., sewing, cooking), offered their immigrant clients access to positive social interaction. While some group sessions focused solely on social interaction, others provided immigrants with information and community resources through speaker presentations. The Edmonton interviewee described one such program:

> Every month, we have group sessions … to provide a space for newcomer people, families and individuals to interact socially, make some new friends. But there's also an agenda to let them know more about different systems in Edmonton … (Edmonton SSO, March 6, 2014)

Mentorship programs were also mentioned as key sources of positive social interaction for clients. Some of these programs, which match newcomers with established immigrants or native-born volunteers, are designed solely for social interaction, while others pair job-seekers with mentors working in their field to foster employment networking opportunities in addition to social interaction. The Ottawa interviewee described the importance of one such program within their SSO:

> … the clients get connected, with the mentors, therefore to the employment world. And it's not only that but the client also is receiving quite a bit of support during that time because the mentor, you know is there for not only to help client with the job search but also … they're meeting on a regular basis, so some relationship is developed and connection … it helps immensely. (Ottawa SSO, February 14, 2014)

Finally, a few interviewees described their organization's cultural events (e.g., regular potlucks, multicultural holiday celebrations) and field trips (e.g., hockey games, museums, national parks) as key opportunities for positive social interaction.

4.2.3. Emotional or informational support

Interviewees from both large and small urban centers indicated that their SSO's settlement workers were a key resource for immigrant clients seeking emotional or informational social support. They described how settlement workers provide important information regarding processes for sponsoring family members, applying for housing, and filling out immigration documentation. They also described how settlement workers provided emotional support throughout challenging and stressful adjustment experiences, particularly when clients did not have any family or friends in Canada. As settlement workers are not trained professional counselors, most of the SSOs refer immigrants to other local organizations for psychological or clinical counseling when needed. The exceptions were the SSO in Ottawa that does provide psychological counseling services, and employees from the settlement department in Lethbridge that work closely with counselors to bridge cultural and informational divides between counselors and newcomers from diverse areas.

4.3. Perceptions of impact of urban center size on immigrant mental health and social support availability

The interviewees were asked to describe their perceptions of the potential advantages and disadvantages an immigrant may experience when settling in a small or large urban center in Canada. One interviewee offered the following reflection on how settlement experiences may differ based on city size:

> … in terms of that sense of belonging … smaller towns, fewer immigrants, smaller ethnic communities, right? Some, some new immigrants are going to feel like they don't belong because … [they] can't kind of connect with their like ethnic groups. But at the same time, it creates opportunities for integration into the broader Canadian society versus, you know, in Toronto, where you can kind of literally disappear into an ethnic enclave and have interactions, on a daily basis, with people that are from your home country or your home language group. (Kingston SSO, February 5 2014)

Almost all interviewees expressed an inability to comment directly on the mental health of immigrants within their community, due to their lack of psychological assessment training. However, their insights into the challenges and strengths in settlement service provision associated with urban center size may explain geographical differences in mental health outcomes observed within the quantitative analysis.

All three interviewees working in small urban centers felt their SSOs were able to foster close connections with other community agencies due to their community's smaller size. Employees from non-settlement specific organizations regularly call the SSO to personally refer new community members whom they had observed or interacted with, and felt may be in need of settlement support. The interviewee from Victoria described this interconnection:

> Well, one of the things is … given that we are not that big and … most of the community service agencies here know one another, the main people know one another. They work together. There's a lot of interaction between social services agencies. And so, you know, we are able to build … like a community of practices or something like that, where we are working together on these issues. (Victoria SSO, March 10, 2014)

The interviewee from Lethbridge said that some clients that had moved from Vancouver indicated that they were able to access services in Lethbridge in a more holistic way. Referrals to other service providers were sometimes coupled with inter-organizational case conferences to ensure an individual client's smooth transition and ongoing support. They speculated that settlement service providers in larger cities might be busier and less able to connect each client directly with each of the external agencies they need to access.

Despite the advantages of increased connectivity between service providers, interviewees from small urban centers also noted that their community's lack of ethnic diversity meant that newcomers were less likely to engage with service providers who share their ethnic background and first language. One interviewee noted that smaller urban centers have fewer specialized settlement organizations for particular ethnic groups, and the Victoria interviewee noted that newcomers were less likely to encounter an employee of their ethnicity or first-language while accessing other services within a small urban center:

> Victoria is not as diverse a place as is Vancouver … and some of the large urban centers, right? So while diversity is increasing … it's still pretty white. Right? So when people interact with other social support services, the chances that they will see a person behind the counter that looks like them, you know, and that speaks like that, that understands their issues quite well, is quite a bit lower than would be the case in a larger urban center. (Victoria SSO, March 10, 2014)

Another interviewee noted that this presented a communication barrier for immigrants with limited English, and a barrier for those whose culturally specific needs might not be well understood.

In small and large urban centers, SSOs are working to address cultural barriers by providing cultural sensitivity training to other community groups. The interviewee from Victoria described how diversity workshops for community organizations increase awareness of the unique life experiences and expectations of newcomers to Canada. Similarly, the Lethbridge SSO conducts presentations and cross-cultural training with community service providers to establish unified processes and protocols for working with recent immigrants. The Ottawa SSO employs Multicultural Liaison Officers to deliver informational workshops to teachers to ensure that immigrant students are welcomed in the school system, and also supplies staff to community advisory boards to help local service providers understand the unique needs of newcomers.

Interviewees from large urban centers also had unique insights into the ways in which their community's size impacted the settlement experiences of their clients. Two interviewees noted that their cities had many settlement service agencies, offering newcomers more choice and greater access to resources. The interviewee from Vancouver noted that settlement service providers within large urban centers speak many different languages, and this linguistic diversity serves to draw clients in from smaller neighboring communities:

> In a larger city … you have choices and there's a lot of resources available. And we can refer them to different services, if it's required. In a small urban area, because there's limited services, so sometimes, it gets difficult for those people. Like, for example, a lot of people will come to our organization from even Abbotsford, from Langley, you know, from, they will come to us, no matter if it takes them two hours to get to our office. (Vancouver SSO, March 7, 2014)

One interviewee also made the unique observation that many immigrants to Canada come from densely populated regions, and thus may appreciate the greater population density of Canada's large urban centers.

Only one interviewee offered potential disadvantages to settlement within a large urban center. The Ottawa interviewee talked about how being situated in a large urban center poses challenges to promoting their programs and services:

> … some people are not getting the messages. There is some services available, settlement services … which may help them to integrate or to meet their needs, much faster … But, yeah, I think that maybe communication goes faster [in a small city] and people have a chance to meet … They go to church or some other, you know places. So the big city, you feel more kind of all by yourself, more lost, if you wish. (Ottawa SSO, February 14, 2014)

5. Discussion

5.1. Self-perceived mental health and social support

Our quantitative analyses demonstrated that low levels of social support were significantly associated with low SPMH among recent Canadian immigrants. Interviewees corroborated these findings by confirming that social support was an important factor in the successful settlement of their immigrant clientele, which likely impacts on their mental health status. Previous research findings by Puyat (2013) similarly found that individuals with low social support had higher odds of reporting mental disorders, and the association was strongest among recent immigrants compared to established immigrants and native-born Canadians. The relationship between social support and mental health may be explained by the fact that social support provides people with positive experiences, and a lack of positive social relationships can lead directly to psychological distress (Holahan and Moos, 1981; Ornelas and Perreira, 2011). Immigrants experiencing multiple stressors during the settlement process may experience stress-buffering effects if available social support networks either alleviate the stressful factors directly, or improve an immigrant's perception of their ability to overcome settlement challenges (Cohen and Wills, 1985; Sluzki, 1992; Noh and Kaspar, 2003; Tran et al., 2014).

5.2. Social support and urban center size

Our quantitative analysis revealed greater availability of all three forms of social supports in smaller urban centers in Canada. In the case of tangible social supports, these findings were corroborated by our qualitative interviews that revealed SSOs within small urban centers commit relatively more resources to services like appointment accompaniment and referrals to external community service providers. According to our interviewees, the greater commitments to tangible supports by SSOs within smaller communities are facilitated by their smaller client bases and by personal connections between settlement service employees and external service providers. Indeed, previous research engaging with settlement service providers in Canada demonstrated that the multitude and diversity of organizations within large urban centers made the establishment of community agency connections challenging (Stewart et al., 2008). The divergent approaches to the provision of tangible support services between large and small urban center SSOs provides further evidence that settlement services are not provided uniformly across the country (Simich et al., 2005), which may lead to differential settlement experiences for immigrants to Canada.

In contrast to tangible social supports, our interviews did not yield distinct differences between small and large urban centers in the provision of opportunities for positive social interaction and in the provision of emotional/informational supports. Given that SSO employees in small urban centers did not corroborate our quantitative findings on positive social interaction and emotional/information support might be explained by a greater access to these supports in small urban centers outside of the scope of supports provided by the SSOs that operate within them. Indeed, previous research has indicated that family, friends and pre-established immigrants provide substantial social support for newcomers, and it is possible that these groups provide greater support within small urban centers (Stewart et al., 2008). Given that large urban centers tend to have much larger ethnic immigrant communities (Hyndman et al., 2006), and that members of these ethnic enclaves play key roles in supporting newcomers (Ornelas and Perreira, 2011), our quantitative findings of greater social support availability in small urban centers are particularly surprising.

5.3. Self-perceived mental health and urban center size

Despite the fact that immigrants in small urban centers reported significantly greater social support availability, regression analysis revealed that respondents from small urban centers were also more likely to have low SPMH. These findings likely reflect the greater burden of challenges faced by immigrants living in small urban centers, such as limited employment opportunities and discrimination (Sethi, 2013), which threaten mental health. Indeed, a qualitative study of immigrant experiences in the small urban center of St. John's Newfoundland found that poor mental health was partly attributable to limited social supports, as well as a variety of other factors including “a depressed local job market, unrecognized foreign credentials, over-qualification and discrimination”, and compromises to expressions of their religious beliefs and cultural traditions (Reitmanova and Gustafson, 2009; pp.50–51). When asked about their experience of being a visible minority immigrant in a small urban center, one participant from this study provided the following account:

> Isolation of myself is one of my biggest factors … and the fact that I'm different and I feel like I'm being investigated by everyone, looked at because I'm different … so not feeling that you fit in to a place … if I go to the mall I can look in any direction and I can see someone staring at me. And I don't think that's really polite. (p.51)

Outside of Canada, we found only one study explicitly examining differences in the mental health status of immigrants based on city size. This study, which examined mental health differences between married Asian immigrants in rural towns and urban cities in Taiwan, similarly found that rural-dwelling immigrants had poorer mental health, as well as greater reliance on social supports, than urban dwelling immigrants (Chen et al., 2013).

Our interviewees from small urban centers also acknowledged that immigrants within their communities faced challenges associated with a lack of cultural and lingual diversity. SSOs worked to address the lack of tailored cultural support by educating employees of other community agencies, yet first language support remained a challenging barrier. Language barriers could also present significant challenges for immigrants attempting to find necessities of settlement such as employment and housing. Previous qualitative research involving interviews with immigrants and refugees has indicated that language barriers contribute to barriers to employment (Stewart et al., 2008), particularly in smaller urban centers in Canada (Sethi, 2013; Reitmanova and Gustafson, 2009). Conversely, language diversity was cited as an advantage among large urban center interviewees. It is possible that newcomers in smaller urban centers face greater challenges in achieving these needs, and therefore their SPMH is lower despite greater social support availability.

5.4. Policy implications and directions for future study

This study demonstrated significant relationships between urban center size, social support availability, and self-perceived mental health of recent immigrants to small and large urban centers in Canada. The results suggest that immigrants settling in large urban centers could benefit from SSOs with strengthened tangible support provision and stronger community agency connections, while immigrants settling within small urban centers could benefit from increased lingual support and cultural competency within SSOs and the broader community. Future research could examine additional factors beyond social support availability that influence the SPMH of immigrants living in small urban centers. Research

with immigrant service providers involved in counseling or psychological treatment services is especially warranted to develop a fuller understanding of the mental health status of immigrants.

5.5. Limitations

The health regions extracted from the CCHS did not perfectly correspond with the geographic boundaries or total population sizes of the CMAs selected for study. This could have caused discrepancies within the data analysis if some of the individuals included within a health region were not residents of the matched CMA, but instead settled within surrounding communities. However, since the majority of SSOs are concentrated within urban centers, it is reasonable to believe that immigrants from surrounding smaller communities would access the same settlement services as those within the urban center core (Saddiq, 2004).

This study was also limited by its use of a cross-sectional dataset, since results cannot confirm whether relationships between variables are causal in nature. Lou and Beaujot (2005) note that while poor settlement transitioning can lead to poor mental health, pre-existing poor mental health before arrival may predispose newcomers to poor SPMH and poor access to social support during settlement. Such discrepancies can only be distinguished from longitudinal data analysis.

Culturally diverse interpretations of survey questions pose another limitation. Immigrants to Canada are not homogenous, and their definitions of mental health and social support may differ based on their country of origin (Stewart et al., 2008). However, the inclusion of multiple related questions within the social support survey section minimized the likelihood of misinterpretation across all responses (Sherbourne and Stewart 1991).

Finally, our interviews were conducted with settlement service providers who spoke on behalf of recent immigrant clients, as opposed to recent immigrants themselves, thereby limiting the migrant voice in our findings. Additionally, SSOs are not the only providers of social support for newcomers, as many find family, friends, and other community groups to be significant sources of support (Lou and Beaujot, 2005). Nevertheless, interviewing SSO managers/coordinators afforded the opportunity to glean insights into local support services that are both targeted at, and accessed by many, recent immigrants. Furthermore, unlike immigrants themselves, we suspect that SSO employees are better positioned to speak about the potential strengths or challenges associated with social support provision within their community in comparison to other urban centers.

6. Conclusions

This study confirmed that social support availability is significantly associated with SPMH among immigrants, and found that immigrants living in small urban centers in Canada had significantly greater access to three types of social support. SSOs provided immigrants with opportunities to access social support in various forms, however provision of tangible supports appeared to be greater in the small urban center organizations. Despite greater access to social support, newcomers in small urban centers were also more likely to report low SPMH, which is likely due to other factors affecting the mental health status of immigrants settling in small urban centers. Further research is needed to determine which factors may be limiting the SPMH of small urban center immigrants, despite their greater access to various modes of social support.

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