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Neighborhood settings, types of social capital and depression among immigrants in Toronto

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Abstract

Purpose   Few studies consider the associations between neighborhood social capital and immigrant's mental health. We examined associations between bonding, bridging and linking social capital and depression among immigrants in Toronto neighborhoods.

Methods   We used data on immigrants from the neighborhood effects on health and well-being (NEHW) study, conducted in 47 randomly selected greater Toronto area neighborhoods (sample = 916), and a study of one low-income, immigrant receiving neighborhood (IRN) (sample = 600). We conducted logistic regression models for depression (Epidemiologic Studies Depression Scale, CES-D) and social capital types: bonding (social cohesion and informal social control), bridging (group membership) and linking (engagement in political activities), while adjusting for different covariates.

Results   The prevalence of depression was 22.9 % in IRN and 21.4 % in NEHW. The associations between social capital types and depression differed in each sample. Lower social cohesion (bonding) was associated with higher depression in NEHW only. Lower linking social capital (never participated in political activities) was associated with lower depression in IRN only. These associations were consistent after adjustment for different covariates.

Conclusions   Results suggest that social cohesion might have a protective effect from depression among immigrants in NEHW. In IRN, lower linking social capital associated with lower depression might reflect opposite direction association. Bridging social capital was not associated with depression in either sample, indicating that current community building might be insufficient to impact depression. Different pathways might explain how depression among immigrants is impacted by social capital types operating in different neighborhood settings; this could be examined in future longitudinal studies.

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Introduction

The Canadian immigrant population is a vulnerable and growing subgroup [1]. Protecting the mental health of current and incoming immigrants has been identified as an important public health concern [2]. We know that depression among immigrants can increase even after the initial stressful settlement period [3–6] and varies by place of residence [7]. We also know that immigrants tend to concentrate in low-income neighborhoods upon arrival and move to more established neighborhoods later. One critical element in achieving healthy communities is the accumulation of neighborhood social capital [8–12], that is, "the ability of actors to secure benefits by virtue of membership in social networks and other social structures" [10]. Therefore, studying the relationship between neighborhood social capital and depression among immigrants in a variety of neighborhood types is one way to better understand and respond to the mental health needs of this population. Yet, to date, little of this work has been done.

Looking at the existing literature, one study showed that neighborhood had an independent effect on depression and anxiety among different ethnic groups of immigrants in the US [13]. Meanwhile, immigrant concentration in neighborhoods, or the "ethnic density effect", has been shown to have a buffering effect on depression [14–16]. This buffering is due to how enclaves enhance collective efficacy and reduce exposure to discrimination [13].

To better understand how people could receive greater benefit from their living environment, recent studies have considered the pathways by which neighborhood social capital affects health [17–20]. This work has shown that high bonding in a neighborhood (close social ties among residents) can facilitate information sharing; influence resources and services use; shore up social credibility of individuals in a network; and provide social support [6, 17, 21]. This research follows Durkheim's work showing the impact of social environments on quality of life [22], and draws on Coleman and Putnam's theorizations of social networks [9, 11, 23]. Neighborhood social capital also shapes health norms by supporting particular health behaviors [17]. One review of studies suggested that neighborhood social capital can act as a pathway to depression [24]. This might be particularly relevant to immigrants as they change neighborhoods, which could also change the types of neighborhood social capital they experience, and could have implications for depression.

Widely accepted types of social capital include "bonding" social capital, based on trust and reciprocity in close social relationships and networks, and "bridging" social capital, which involves relationships with groups of people

from diverse backgrounds where ties are weaker [25]. To answer critiques [8, 9, 26, 27] of these two types, Szreter and Woolcock [28], added "linking" social capital [10, 25, 28, 29], which names benefits (e.g., leverage) accruing from social relations with authorities [28, 30].

Little is known about how bonding, bridging and linking social capital affect immigrants. Portes [10] suggested that strong within-group bonding among immigrants might interfere with bridging social capital by weakening between-group social interactions. Interestingly, Cheong et al. [31], who critically reviewed links between social capital and immigrant social cohesion, argue that accruing social capital is a low priority for new immigrants, as they are too busy with their own survival [31]. Woolcock [32] agrees, arguing that supportive economic integration policies can facilitate settlement better than social relationships.

In the current study we aim to advance these insights by examining associations between different types of neighborhood social capital (bonding, bridging, linking) and depression among immigrants in two studies of Toronto neighborhoods. The first study was conducted among immigrants who reside in a low-income, immigrant receiving neighborhood (IRN); the second, called "neighborhood effects on health and well-being", or NEHW, was conducted among immigrants residing in randomly selected greater Toronto area neighborhoods. We used data from these studies because, although having different target populations (i.e., IRN targeted immigrants for whom English was not their first language and interviews were conducted in participants' native languages), they used similar random sampling strategies, used the same survey questions and shared a mental health focus.

Based on previous research on the associations between neighborhood social capital and depression we had three hypotheses: (1) we expected that high bonding social capital would be associated with lower depression, but this association will be weaker in the NEWH sample, since low-income neighborhoods have shown high bonding social capital [6]. (2) High bridging social capital will be associated with lower depression in NEWH, but this association will be weaker in IRN. Income and immigrant density are more heterogeneous in NEHW neighborhoods, and we, therefore, expect greater social interactions between dissimilar groups (bridging social capital), which will be associated with lower depression, as bridging social capital has been associated with lower social distress [33]. (3) In both studies, linking social capital will not be associated with depression, as immigrants generally have low political engagement [34]. In addition we assume that the associations between neighborhood social capital and depression will be significant after adjusting for individual-level factors (socio-demographics, socioeconomic position and

acculturation) that were associated with depression in previous neighborhood studies [24].

Methods

Data

We used data on immigrants from two neighborhood studies conducted in Toronto:

(a) *Neighborhood effects on health and well-being* (*NEHW*) *study*, a cross-sectional study of a random sample of residents in the Greater Toronto Area between 2009 and 2011 [35]. Briefly, serpentine sampling was employed to randomly select 47 of the city's 140 Neighborhood Planning Areas. Two census tracts were randomly selected within each of these Neighborhood Planning Areas. Finally, within each census tracts, between 25 and 30 households were randomly selected. If they met the age (25–64 years), residence (at least 6 months in the neighborhood) and English language proficiency eligibility criteria, one adult was interviewed in English by a trained interviewer. Of those initially contacted and deemed eligible, 80 % agreed to be interviewed, and of these, 96 % participated in interviews. The total sample was 2412, including 916 immigrants. Weights were applied to ensure that the selected participants represented their census tracts according to age, marital status, immigrant status and income, resulting in a weighted sample of 1465 immigrants. The Ethics Review Board of St. Michael's Hospital approved the study.

(b) *Immigrant receiving neighborhood* (*IRN*) *study*, a survey of a randomly selected cross-sectional sample of residents in one low-income IRN in 2010–2011. Resident addresses were randomly selected using a listing of households. Trained interviewers visited the addresses and asked the first adult they met if he/she was interested in study participation, after which they verified eligibility criteria: (1) self-identified immigrant, including Tamil, Filipino, and Chinese (Mandarin speaking), since these were the top three languages spoken in IRN; or non-immigrant (born in Canada); (2) age 25–64 years; and (3) at least 6 months' residence in the neighborhood. After participants signed an informed consent form, the survey was conducted through face-to-face interviews in three languages (Filipino, Mandarin or Tamil). The response rate was about 90 %. The sample was 600 (weighted sample = 601). Ryerson University's Ethics Review Board approved the study.

Measures

The same questionnaire was administered in both samples, with a few exceptions related to residents' country of origin, as the IRN was administered for Tamil, Filipino and Chinese (Mandarin) speaking immigrants.

Depression was measured by the Center for Epidemiologic Studies Depression Scale (CES-D) [36], which is considered a reliable measure across racial, gender and age categories [37, 38] and includes 20 symptoms of depression experienced during the past 2 weeks. Each item was graded on a four-point scale ranging from 0 (none of the time) to 3 (most or all of the time). Individual scores were summed and the total scores ranged from 0 to 60. Based on this score, depression was dichotomized: (0–15 score) as 'low or no depression' for 'not having clinical depression,' and (16+ score) as 'high depression symptoms' [39]. The internal consistency of the CES-D ranged from 0.85 to 0.90 in previous research [37]; in the current study, it was around 0.92 in both samples. In IRN, Cronbach's Alpha was 0.93, 0.92 and 0.92 for the Chinese, Filipino, Tamil participants, respectively.

Types of neighborhood social capital three measures are detailed in Table 1—bonding social capital, bridging social capital and linking social capital.

Demographic variables age, gender, marital status (married or common law, divorced, separated, widowed and never married), and household size (1–2 persons, 3–4 persons and 5 persons or more).

Social integrations English language proficiency (1. proficient; writes, reads and speaks English, 2. less proficient), and length of stay in Canada (1. at least 10 years, and 2. less than 10 years). These variables were used in previous research to measure social integration [40].

Socioeconomic position (*SEP*) (1) Education (high school or less, and college level or more); (2) household income (less than 40 K, and 40 k and more); and (3) employment (working or unemployed).

Data analysis

As the studies had distinct designs we performed weighted analyses separately for each. The proportion of missing data ranged from 0 to 6.3 % for IRN and 0 to 7.8 % for NEHW. The highest proportion of missing data in both studies was for household income. For both studies, we conducted multiple imputation using fully conditional specification methods [41]. We created twenty imputed datasets and combined results from each dataset using Rubin's rules [42] in SAS 9.3 (SAS Institution Inc., Cary, NC. USA).

We estimated the prevalence and 95 % confidence interval (CI) of depression in each of the samples, and examined bivariate associations between independent variables; demographics, social integration measures, SEP and social capital type (bonding, bridging, linking) and depression. We developed multivariable logistic regression

Table 1 Measures of social capital by type (bonding, bridging and linking)

Social capital types	Measure	Categories	Score calculation
Bonding social capital	1. *Social cohesion* (continuous variable) measured by the following question about agreement with 5 statements regarding the neighborhood[a]: "The next 5 questions are about people who live in your neighborhood. Please tell me how strongly you agree with the following statements: People around here are willing to help their neighbors; This is a close knit neighborhood; People in this neighborhood can be trusted; People in this neighborhood generally don't get along with each other; People in this neighborhood do not share the same value"	1. Very unlikely, 2. Unlikely, 3. Neither likely nor unlikely, 4. Likely, 5. Very likely	We calculated the sum score of the 5 statements. Each statement had a 0–4 score. The range of social cohesion was from 0 to 20; higher scores present higher social cohesion
	2. *Informal social control* (continuous variable)[a] measured by the following questions: "I will now read you scenarios that occur in some neighborhoods. How likely it is that neighbors would intervene when encountering several negative scenarios, such as: children skipping school or 'spray painting graffiti on a local building,' or a fight breaking out nearby"	1. Very unlikely, 2. Unlikely, 3. Neither likely nor unlikely, 4. Likely, 5. Very likely	See above calculation on social cohesion
Bridging social capital	*Social group membership* (dichotomous variable): measured by the sum of positive answers to 8 questions[b] regarding active participation in the last 12 months in community social groups, and location of the group in or out of the neighborhood. Group types were: work-related/trade union, religious group, community association/co-op credit, women's, sports, political, ethnic/cultural group or, neighborhood committee.	1. At least one membership or one activity 2. No membership or no social activity	1. No membership or no social activity = 0 2. At least one membership or one activity = 1
Linking social capital	*Political activities* (dichotomous variable)[c]: measured by questions about participation in 8 activities in the neighborhood: "in the last 12 months, have you done any of the following? Please note that the questions are not limited to your neighborhood. (e.g., attending a neighborhood council meeting, meeting with a politician, participating in a protest or demonstration, altered a newspaper or media about a local problem, notified the police about a local problem, joined together with other neighbors to address a problem, and have the people in the neighborhood gotten together to jointly petition for something benefiting the neighborhood"	1. Participated at least one time 2. Never participated	1. Participated at least one time = 1 2. Never participated = 0

[a] [51]

[b] [52]

[c] [53]

models to estimate adjusted odds ratios (OR) and 95 % CI for the associations between social capital types and depression. First, Model was unadjusted (Model 1), which included social capital types. The subsequent Model 2 added demographic variables (age, gender, marital status and household size) and social integration variables (length of stay in Canada and English language proficiency). In the final Model 3, we added SEP (education, employment and

household income). We examined correlations and the coefficients were <0.5, indicating no multicollinearity in the multivariable analysis.

Results

Table 2 presents the weighted distribution of participant characteristics in IRN and NEHW. The prevalence of depression was similar in both samples (around 22 %). The mean age was 43 years in IRN and 49 in NEHW. Both samples included a higher percentage of women and married participants and of people living in high-concentration households (3 or more persons). English language proficiency and length of stay in Canada were low in IRN, while in NEHW the majority were English proficient and had been in Canada at least 10 years. The level of college or higher education was around 50 % in both samples, yet employment was low in IRN, high in NEHW; likewise with income.

The social capital types were generally different in the two samples. The average scores of bonding (social cohesion and informal social control) were low in IRN compared to NEHW. Bridging social capital (no group membership) was reported by 60.6 % of the participants in IRN and 40.6 % in NEHW. Linking SC (participation in political activities) was reported by 42.6 % of IRN participants and 63.6 % in NEHW.

Table 2 presents bivariate associations between study variables and depression. In IRN we observed significant associations only with marital status. Those who were 'not married' had significantly more depression than those who were married (about twofold). The other associations between independent variables and depression were not significant. However, the types of social capital were significantly associated with depression, except social cohesion. In NEHW, bivariate associations show that being female, unmarried, having low English language proficiency, residing less than 10 years in Canada, having lower education (high school or less), being unemployed and having household income less than 40 K were significantly associated with high depression. All forms of social capital were significantly associated with depression except linking social capital.

The multivariable results in IRN (Table 3a) show that among the three social capital types, only linking social capital (never participated in political activities) was significantly associated with low or no depression symptoms. This association became non-significant after adjustment for acculturation (Model 2), but became significant when adjusting for SEP (Model 3). In NEHW (Table 3b) only social cohesion (bonding social capital) was significantly associated with depression. Higher social cohesion was associated with low or no symptoms of depression in all

Models after adjustments for different covariates. We also found significant associations between informal social control and depression in Model 1 (unadjusted). This association ceased to be significant in the adjusted models.

Discussion

The aim of this study was to examine the relationship between different types of social capital (bonding, bridging and linking) and depression among two samples of immigrants across different neighborhood settings while considering different individual-level variables. Prevalence of depression was similar in both samples (almost 22 %). While this is higher than the prevalence of depression among immigrants reported in previous Canadian studies [2, 43], our measure of CES-D has been shown to consistently yield higher estimates than the Composite International Diagnostic Interview CIDI used in those studies [44]. Differences in age, length of stay in Canada, country of origin [45], cultural [46], and ethnic backgrounds might also contribute to differences in depression prevalence in these study populations [13].

Overall, our hypotheses were partially confirmed. A main finding was that types of social capital related differently to depression in the two samples. In IRN only linking social capital was associated with depression. In NEHW only social cohesion was significantly associated with depression. We discuss these findings in relation to our hypotheses below.

Bonding social capital and depression

We expected to find significant associations between bonding social capital (informal social control and social cohesion) and depression in IRN, but not in NEHW. In low-income neighborhoods, such as IRN, bonding social capital can facilitate the flow of information; impact resource and service utilization; and aid social credibility of individuals [6, 17]. Contrary to our hypothesis, we did not find this in IRN, and social cohesion was significantly associated with depression only in NEHW. This contradicts previous research, where "norms" and "information sharing" (types of bonding social capital) were significantly associated with lower depression among Korean immigrants in the US [34].

One explanation for lack of association between bonding social capital and depression in IRN might relate to the low bonding we found in this study. The IRN sample is comprised of diverse ethnic groups (Mandarin, Chinese and Tamil), which may preclude establishing strong social ties. Previous US research suggests that immigrants prefer to partner with non-immigrants over other immigrant

Table 2 Univariate associations between study variables and depression among participants in immigrant receiving neighborhood (IRN) and neighborhood effects on health and well-being (NEHW) samples in Toronto (2010–11)

	IRN (total weighted N = 601)			NEHW (total weighted N = 1465.0)		
	N (%)	OR (95 % CI)	P value	N (%)	OR (95 % CI)	P value
Depression						
Low or no symptoms	447 (77.1)			1140 (78.6)		
High depression symptoms	133 (22.9)			311(21.4)		
Socio-demographics						
Gender						
Male	247 (41.1)	1		688 (47.0)	1	
Female	354 (58.9)	0.80 (0.54, 1.18)	0.256	777 (53.0)	2.04 (1.57, 2.65)	<0.0001***
Age (years)						
50–64	109 (18.2)	1		488 (33.3)	1	
35–49	335 (55.8)	1.59 (0.89, 2.81)	0.114	745 (50.9)	1.00 (0.75, 1.33)	0.996
25–34	156 (26.0)	1.57 (0.83, 2.97)	0.169	232 (15.8)	1.32 (0.91, 1.91)	0.137
Marital status						
Married	426 (70.9)	1		883 (60.3)	1	
Other	175 (29.1)	1.85 (1.23, 2.78)	0.003***	582 (39.7)	1.89 (1.47, 2.44)	<0.0001***
Household size						
5+ persons	99 (16.4)	1		366 (25.1)	1	
3–4 persons	345 (57.4)	0.60 (0.36, 1.01)	0.056	644 (44.1)	0.90 (0.66, 1.24)	0.527
1–2 persons	157 (26.2)	0.81 (0.46, 1.44)	0.468	450 (30.8)	1.14 (0.82, 1.59)	0.431
Social integration						
Language proficiency						
Proficient	118 (19.7)	1		1025 (70.0)	1	
Less proficient	483 (80.3)	1.62 (0.95, 2.75)	0.076	440 (30.0)	1.52 (1.17, 1.99)	0.002**
Length of stay in Canada						
At least 10 years	236 (39.8)	1		1131 (77.5)	1	
Less than 10 years	358 (60.2)	1.08 (0.72, 1.62)	0.722	329 (22.5)	0.62 (0.45, 0.87)	0.005**
Socioeconomic position						
Education level						
College level or higher	323 (53.9)	1		728 (49.8)	1	
High school or less	276 (46.1)	1.21 (0.82, 1.78)	0.341	733 (50.2)	1.76 (1.36, 2.27)	<0.001***
Employment status						
Working	216 (37.0)	1		1028 (70.2)	1	
Unemployed	369 (63.0)	0.71 (0.48, 1.06)	0.096	437 (29.8)	2.13 (1.64, 2.76)	<0.001***
Household income						
40 K+	190 (33.5)	1		944 (69.6)	1	
Less than 40 K	377 (66.5)	1.35 (0.87, 2.10)	0.187	412 (30.4)	1.51 (1.15, 1.98)	0.003**
Types of social capital						
Bonding social capital						
Informal social control						
Mean (SD)	6.6 (3.8)	1.09 (1.04, 1.15)	0.001**	9.1 (5.2)	0.95 (0.92, 0.98)	0.001***
Social cohesion						
Mean (SD)	10.6 (2.7)	0.95 (0.88, 1.02)	0.160	13.2 (4.3)	0.90 (0.87, 0.93)	<0.001***
Bridging social capital						
Group membership						
At least one group membership	232 (39.4)	1		861 (59.4)	1	
No membership	357 (60.6)	0.64 (0.43, 0.95)	0.027*	589 (40.6)	1.43 (1.11, 1.85)	0.006**

Table 2 continued

	IRN (total weighted $N = 601$)			NEHW (total weighted $N = 1465.0$)		
	N (%)	OR (95 % CI)	P value	N (%)	OR (95 % CI)	P value
Linking social capital						
Political activities						
Participated at least one time	246 (42.6)	1		893 (63.6)	1	
Never participated	332 (57.4)	0.56 (0.38, 0.84)	0.005**	511 (36.4)	0.76 (0.57, 1.01)	0.056

* $P \leq 0.05$

** $P \leq 0.01$

*** $P \leq 0.001$

Table 3 Multivariable logistic regression models for associations between types of social capital (SC) and depression in immigrants in receiving neighborhood (IRN) and Neighborhood Effects on Health and Well-being (NEHW) sample in Toronto (2010–11)

	Model 1 OR (95 % CI) P value	Model 2 OR (95 % CI) P value	Model 3 OR (95 % CI) P value
(a) IRN ($N = 600$)			
Bonding social capital			
Informal Social Control	1.04 (0.99, 1.10) 0.124	1.04 (0.98, 1.10) 0.184	1.05 (0.99, 1.11) 0.129
Social Cohesion	0.94 (0.87, 1.01) 0.113	0.94 (0.87, 1.02) 0.137	0.93 (0.86, 1.01) 0.097
Bridging social capital			
Group membership			
At least one group membership	1	1	1
No membership	0.83 (0.55, 1.25) 0.369	0.77 (0.51, 1.18) 0.232	0.71 (0.46, 1.10) 0.123
Linking social capital			
Political activities			
Participated at least one time	1	1	1
Never participated	**0.62 (0.40, 0.96) 0.031**	0.66 (0.42, 1.02) 0.137	**0.64 (0.41, 0.99) 0.048**
Hosmer and Lemeshow goodness-of-fit Range of Chi-square (P_r > Chi-square)	2.69 (0.9522)–12.66 (0.1242)	4.04 (0.8533)–13.3097 (0.1016)	4.40 (0.8194)–15.04 (0.0584)
(b) NEHW ($N = 916$)			
Bonding social capital			
Informal social control	**0.95 (0.91, 0.99) 0.033**	0.96 (0.91, 1.00) 0.062	0.97 (0.92, 1.01) 0.143
Social cohesion	**0.90 (0.86, 0.95) 0.001**	**0.91 (0.86, 0.96) 0.007**	**0.92 (0.87, 0.97) 0.003**
Bridging social capital			
Group membership			
At least one group membership	1	1	1
No membership	1.39 (0.99, 1.97) 0.060	1.37 (0.96, 1.95) 0.082	1.31 (0.91, 1.87) 0.147
Linking social capital			
Political activities			
Participated at least one time	1	1	1
Never participated	0.79 (0.55, 1.14) 0.208	0.79 (0.54, 1.15) 0.213	0.75 (0.51, 1.11) 0.151
Hosmer and Lemeshow goodness-of-fit Range of Chi-square (P_r > Chi-square)	3.23 (0.9191)–4.65 (0.4679)	1.67 (0.9896)–6.62 (0.5782)	4.63 (0.7964)–14.83 (0.0625)

Model 1—unadjusted (includes the three types of social capital only)

Model 2—adjusted for social capital, socio-demographics and social integration

Model 3—adjusted for social capital, socio-demographics, social integration and socioeconomic position

groups [47], as the latter might be competing for the same resources [47]. The lack of a common language for communication in IRN might also be a contributing factor. Low bonding might further result from IRN being transient. Bonding was also lower in neighborhoods with high levels of renters versus homeowners [6], as is the case in IRN.

Another explanation would be that depression among immigrants in IRN may not be related to the level of bonding in a neighborhood but to other individual-level factors. Some studies found that individual factors are stronger predictors of depression compared to neighborhood level factors.

In NEHW, we found a significant association between one type of bonding social capital (social cohesion) and depression, which contradicted our hypothesis that close social ties among immigrants would be low when they reside in more heterogeneous neighborhoods. Social cohesion was measured by trust, mutual help and shared norms and values in a neighborhood. Strong social cohesion among immigrants in NEHW might reflect their length of stay in Canada, as establishing strong social cohesion takes time; most immigrants in NEHW had been living in Canada more than 10 years. This finding might also reflect the high concentration of single ethnic group in the randomly selected NEHW neighborhoods sample (including older ethnic enclaves like Little India and Chinatown, and newer ones, such as St. Jamestown. This ethnic density effect is an important factor for immigrant's health [17, 48] and can be examined in future research, as we did not measure it directly in the current study.

Bridging social capital and depression

Contrary to our hypothesis, bridging social capital (between-group social interactions) was not significantly associated with depression in either sample. Generally, this result indicates that in both neighborhood settings bridging social capital was not sufficient to affect depression. This was not expected in the NEHW sample, since these neighborhoods are more heterogeneous than IRN. In the current study, about 60 % in NEHW and 40 % in IRN reported at least one group membership (bridging social capital). Our results on the lack of association between bridging social capital and depression also contradict previous research showing the protective effect of bridging social capital from poor self-rated health in US neighborhoods [17], as well as the work of Mitchell and Lagory [49], who found inverse associations between bridging social capital and mental distress in low-income neighborhoods in Alabama. However, lack of associations between bridging social capital and depression in IRN is consistent with the results of one study [50]. That study suggests that new immigrants in low-income neighborhoods might feel isolated and benefit less from social interactions compared to immigrants in heterogeneous neighborhoods where immigrants live for longer time and maybe feel more integrated. Language barriers and diverse cultural backgrounds among new immigrants also make social interaction with other groups less likely.

Linking social capital and depression

The significant positive associations we found between linking social capital and depression in IRN and not in NEHW contradicted our hypothesis that immigrants in both samples would have low levels of linking social capital due to low political engagement, and that this would not be associated with depression. The association between linking social capital and depression in IRN also contradicts previous research, which has associated political participation with improved immigrant mental health [34, 47]. Kim et al., who studied social capital among immigrants in the US, suggested that immigrants need to become more politically active to assert their rights in host societies [34]. In the current study, political engagement in IRN could be a consequence of depression brought about by immigrant life in this neighborhood. However, since this is a cross-sectional study, we cannot rule out reverse causation; that those with higher depression are more politically active and have higher linking social capital. Also, depressed people might perceive their neighborhood less favorably because of their depression. Here, it is worth returning to Cheong's [31] critical review, which argues for improving the social determinants of health of immigrants (over community building) to enhance health. For example, in the current study, we found a gap between immigrants' education and their employment and income in IRN compared to NEHW. This result should be brought to the attention of policy makers, as, currently, education might not contribute to social mobility in IRN. However, when immigrants move to more heterogeneous neighborhoods (such as those in NEHW), political activities may decline for a variety of reasons (e.g., less opportunity to share political concerns with neighbors, less support for specific types of political activity), and this might explain the lack of association between linking social capital and depression in NEHW sample.

Study limitations

We did not employ statistical tests to determine whether associations were different across the two samples, as they were based on unique sampling strategies. However, using two studies with similar designs and surveys and large numbers of immigrants was a strength of this study. Also, we expected different relationships between different types of social capital and depression in each of the samples. While previous research has shown that depression differs by cultural groups [46], and by neighborhood ethnic composition [13], in the current analysis we did not examine differences between immigrants by country of origin, as this would require larger samples in each subgroup than those included in the current study. Finally, the

cross-sectional design of the IRN and NEHW studies does not allow causal inferences on the associations between social capital and depression.

Conclusions

Our results show different associations between bonding, bridging and linking social capital and depression among immigrants residing in an immigrant receiving neighborhood and in heterogeneous neighborhoods in Toronto. Negative associations between linking social capital and depression in IRN might indicate the importance of political activism for new immigrants in Canada. In NEHW higher social cohesion associated with lower depression might reflect promising social integration for immigrants who live in more ethnically, linguistically and socioeconomically mixed neighborhoods. Lack of associations between bridging social capital and depression might highlight a need for more community building between immigrants and others in both neighborhood settings. Future research can use longitudinal methods to look at the pathways for the associations that we examined.

Compliance with ethical standards

Conflict of interest On behalf of all authors, the corresponding author states that there are no conflict of interest.

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