Social capital and health in the Greater Toronto Area

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Introduction

Social network connectedness,[1] trust,[2,3] and social participation[4–7] all contribute to health.[8] Some scholars have grouped these various social factors under the term 'social capital.'

There are various accounts of why these forms of social capital might be beneficial to health. Bonds of trust may create opportunities for reciprocal exchange and produce good mental well-being by giving people a sense of safety in one's social environment.[2] Social network connectedness may operate through a wide variety of pathways, including access to a greater number and range of individuals who can offer support (e.g. instrumental help or emotional support).[1,13–15] Social participation connects individuals through shared interests,[16,17] potentially creating denser and more supportive networks. Furthermore, some organizations, such as religious or volunteer organizations, can provide people with a shared sense of meaning and purpose in life that may be good for their health.[18]

One important lesson from the social capital literature is that associations with health can be highly contextual – what works in one area, or for one group, may not work for everyone.[3,8] For example, the association between trust and health can be modified by the local environment, making it highly beneficial in some situations but not others.[2] Associations between social network connectedness and mortality also tend to be highly variable, indicating a wide range of possible associations between this construct and health.

It is not clear what aspects of social capital are most consequential for health in the Greater Toronto Area (GTA). With some exceptions,[19–21] there has been relatively little research into social capital in the GTA. Furthermore, datasets such as the 2013 General Social Survey have included social capital constructs, but at a national level, making analysis at the GTA level difficult.[22] Other local datasets, such as the Neighbourhood Effects on Health and Well-being study, have included only a limited range of measures that could be called social capital.[23] Therefore, there had been limited local opportunities to explore associations between social capital and health. Recent data has now made this possible.

This paper will analyze dimensions of social capital, and their association with health in the GTA, using new data collected in three regions of the metropolitan area. The paper will analyze social relationships to investigate which aspects of social life are most likely to produce positive returns on health for GTA residents.

Methods

Analytic strategy

The aim of this analysis is to isolate specific associations between forms of social capital and health. This paper draws upon a range of different social capital measures from a recent dataset collected in three regions of the GTA. The approach also allows for understanding the unique contribution of each social capital factor, taking all other measured forms of social capital into account. Therefore, this analysis examines the association between health and three social capital domains 'net' of each other (i.e. taking into account that different kinds of social capital are correlated with one another).

Data

The data for this paper come from a cross-sectional survey of the City of Toronto, the Toronto Social Capital study[20], which used data from three arms of the project, carried out in the City of Toronto, York Region, and Peel Region of the Greater Toronto Area.

Data collection in Toronto took place between March 12 and July 10, 2018, and 3,207 people participated in the study, both online and over the telephone. The survey was offered in English, Portuguese, Mandarin and Cantonese. The data also included a quota sample of Black, South Asian, and Chinese respondents, which are the three largest visible minority groups in the city. Technical details on data collection and sampling can be found elsewhere.[20] Data from Toronto were collected in collaboration with Toronto Foundation, TAS Design Build, Community Foundations of

Canada/Canadian Heritage, United Way Greater Toronto, MLSE Foundation, Ontario Trillium Foundation, and Wellesley Institute.

Data collection in York and Peel took place between December 2018 and March 2019; 2,427 people participated in the study, both online and over the telephone. The survey was only offered in English. Unfortunately, the survey underperformed in recruiting racialized populations in York and Peel. The final sample size for this analysis is 5,634.

The data were collected in collaboration with United Way Greater Toronto, the Regional Municipality of Peel, the Regional Municipality of York, and Wellesley Institute. The full report for Toronto provides a more detailed discussion of the data and findings.[20] A more detailed set of reports on the York and Peel arms of the study are forthcoming. Approval for this project, and this analysis, in particular, was provided by the Ryerson Research Ethics Board (REB-2019-255).

Measures

Health
This paper investigated differences in global self-rated health. Respondents were asked, *"In general, would you say your health is excellent, very good, good, fair or poor?"* Note that this does not specify physical or mental health, and for some respondents, the answer may reflect an assessment of both or either. Global self-rated health is one of the most widely-used measures in the academic health literature and correlates with a range of health outcomes, as well as mortality (even after controlling for numerous health problems).[24] Therefore, it provides us with a broad view of how people are doing in terms of their overall health. However, there may be differences across specific health conditions, which we do not consider here for brevity's sake.

Trust
General trust was measured by asking respondents, *"Generally speaking, would you say that most people can be trusted, or that you cannot be too careful in dealing with people?"* Respondents were also asked how much they felt they could trust their family, people they went to work or school with, and strangers. They were also asked how likely it was that a lost wallet would be returned to its owner by someone close by, the police, or a stranger.

Social networks
Respondents were asked how many friends they had that they felt close to and how many relatives they had that they felt close to. The respondents were also asked whether they knew none, a few, many, or most of their neighbours.

Social participation
Respondents were asked, *"Not counting events such as weddings or funerals, during the past 12 months, how often did you participate in religious activities or attend religious services or meetings?"* (Ranged from at least once a week, to not at all). They were also asked, *"In the past 12 months did you do unpaid volunteer work for any organization?"*

Vertical social capital
Vertical social capital was only measured in York and Peel. The survey employed a version of the position generator,[25] where respondents were asked whether they knew someone with one of ten occupations by name. This produced a count of the number of occupations in the respondent's network, based on how many occupations were selected, as well as the average wages in the respondent's network. Wages were attributed to occupations using Statistics Canada's job bank.[26]

Analysis

Because the outcome is dichotomous (0 and 1), the data were analyzed using logistic regression, employing techniques to reduce problems arising from missing data. Details are provided in the appendix. Self-rated health was predicted, controlling for age, gender, sexual orientation, immigration status, education, income, survey mode, and marital status. Roughly speaking, including these controls means that the findings below hold true across these different variables.

Results

Characteristics of the sample

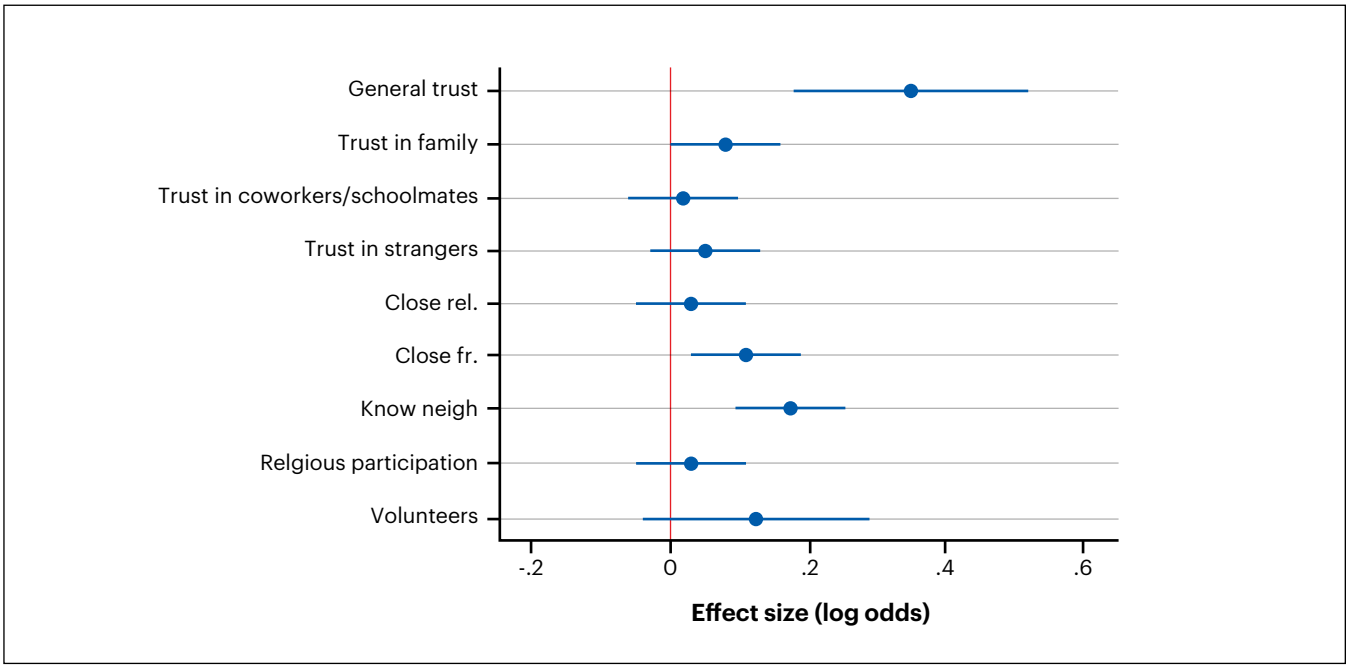
The sample was 54 per cent female and 60 per cent were born in Canada. The average age was 47, and approximately 51 per cent of the sample took part online. In terms of educational background, 44 per cent had obtained at least a Bachelor's degree. The combined sample is also 62 per cent White unweighted, 46 per cent White weighted. More detail is provided in Table 1, in the appendix below.

Social life and health – the GTA

Figure 1 shows a comparison of the associations of different forms of social life with self-rated health. The red vertical line indicates no association. Blue circles represent the size of the association, and confidence intervals are placed around each point. Where these confidence intervals overlap with the red line, the association may be no different from zero at a certain level of confidence. Note for continuous variables (i.e. all but general trust and volunteering) that these associations were standardized so they can be directly compared to each other.

Figure 1 shows associations between social capital and health. Of all the associations, only general trust, the number of close friends, and the number of neighbours that one knows are associated with health in a manner that can confidently be distinguished from no association at all.

Figure 1. Associations between different forms of social capital and self-rated health



Note: "Close rel." = Number of close relatives; "Close fr." = Number of close friends; "Know neigh" = number of neighbours that respondent knows.

These associations were then analyzed to see what the relationships are between each measure and health. For instance, for general trust, the difference between those who said in general people can be trusted, and those who say one cannot be too careful, was 55.0 per cent and 49.5 per cent, respectively.

Figure 2 shows this for the domain-specific trust measures. As in Figure 1, we can see little association between the domain-specific measures of trust and health. If anything, there is a somewhat U-shaped relationship between trust and health.

Figure 2. Associations between health and trust characteristics

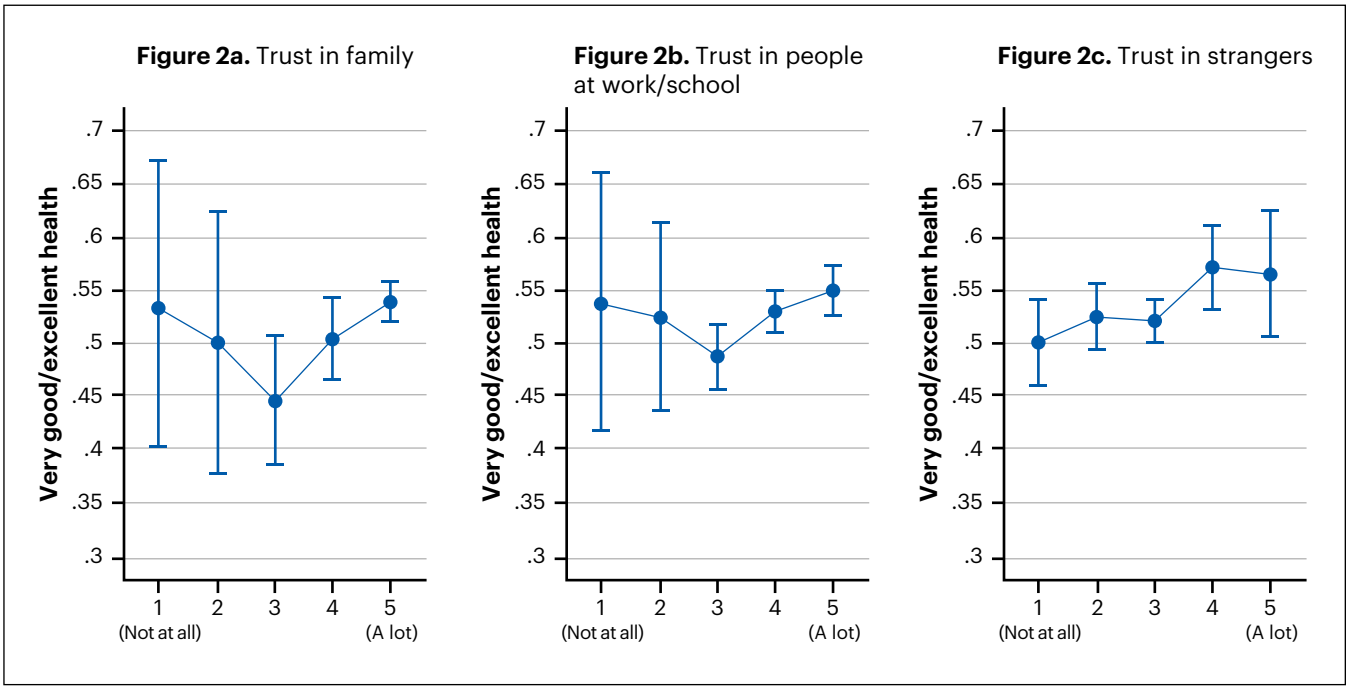
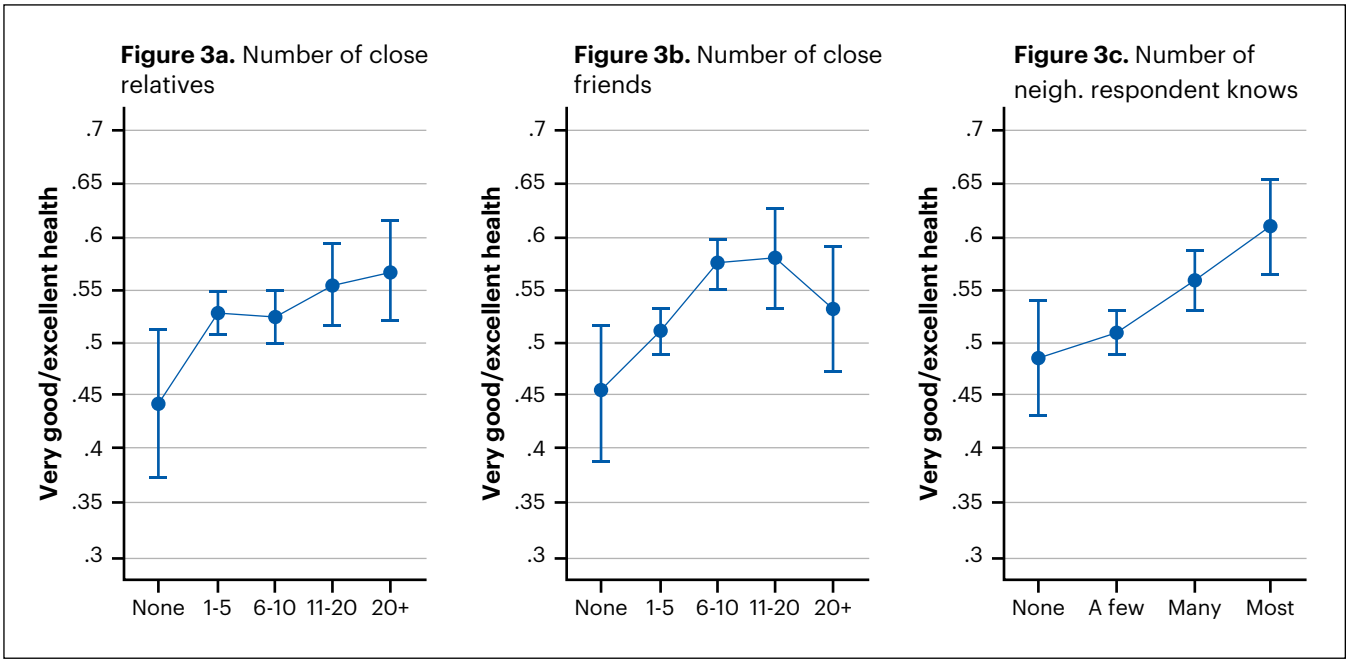


Figure 3 shows social networks, and there is noteworthy difference in health between those with no close family, and any. However, after having any close family, there are relatively small gains to having any more family in one's network.

Figure 3. Associations between health and social network characteristics



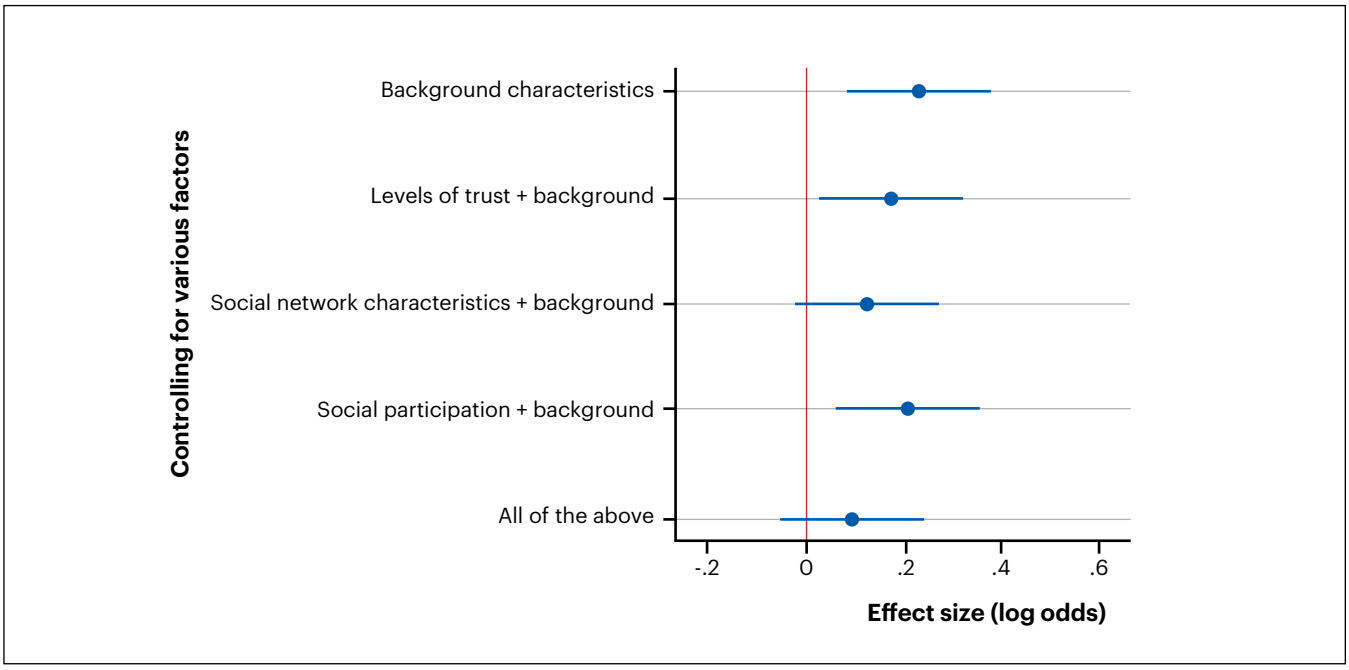
Compare this to the number of friends and neighbours in one's network. The plateau happens later in the graph for friends, and for neighbours, there appears to be no such plateau as all – more neighbours in one's network is associated with better health, at any point in the range of the number of friends.

In terms of social participation, there were very small and insignificant differences. The gap in good health between those who volunteered, and those who did not, was 55.2 per cent and 51.7 per cent respectively. Comparing those who never participated in religious services to those who participated at least once a week, rates of good health were 52.6 per cent and 54.7 per cent

Vertical social capital and health – York and Peel Region

There were no significant associations between the average wages of one's network, and health, controlling for background factors. The number of occupations was associated with better health, but only without controlling for some other social capital factors. Figure 3 shows what happens to the strength of the association when we control for different forms of social capital. Essentially, controlling for social network factors renders the association with the number of occupations non-significant. This finding suggests that network size explains away the association between the number of occupations and health, because people with larger social networks tend to have better health, and also have more vertical social capital – but the number of occupations does not, in itself, seem to be associated with health.

Figure 4. Associations between the number of occupations in a respondent's network (a form of vertical social capital) and health, controlling for various factors



Interactions

This paper tested associations between each form of social capital and health, interacted with gender, and with income. This is a large number of associations, and there was only one significant interaction: a negative interaction between the number of neighbours known and female. It did not test interactions between racial identity and social capital, given the regions of York and Peel underperformed in the recruitment of racialized populations, limiting power to detect such interactions. See a recent publication by Wellesley Institute for a fuller consideration of race and social capital in the Toronto arm of the study.[27]

Note the lack of any consistent pattern for interaction effects. There were a very large number of associations tested, and in an exploratory manner, without guiding theory. Accordingly, there is a high risk of finding some significant interactions simply by random chance. Therefore, although it is possible that female respondents do have less of a return to their health from their neighbour networks, the reader should interpret this finding with caution.

Discussion

The findings above point strongly towards the importance of interpersonal relationships, as well as trust, as key determinants of health in the GTA. The number of close friends, and the number of neighbours known, were both robustly associated with good health.

Importantly, the strong association between general trust and health was net of the person's social network characteristics, as well as their trust in specific domains of their social life. It is possible that the general trust measure captures a broader sense of the social situation that one finds oneself in, apart from the three specific domains considered here.

Note that there are challenges with comparing this work to other studies in the GTA due to limited data collection around social capital and health in the region. The closest work using the General Social Survey (the source of many of the questions in this survey) examines all of Canada rather than a specific region, although it also found that social network connectedness and social participation were associated with good self-rated health.[29] Other work using the General Social Survey tends to focus on mental health, rather than global self-rated health, although these findings have also shown similar patterns of associations with trust using this different outcome variable.[30–32] In brief, although the findings are in line with existing theory, direct comparisons are challenging.

Regardless, even without the possibility of direct comparisons, the findings represent challenges and opportunities going forward for the GTA.

To build more and stronger interpersonal relationships, building neighbourhoods where people can get to know and socialize with each other will be crucially important. Helping people do this requires interventions that are not necessarily place-based, but venue-based. As social network researchers have argued for decades, friendships are often 'focused' ties, in the sense that they are formed through participation in common tasks based on a shared interest.[16,17,35,36]

Increasing general trust among the population represents an even more complex challenge. It will require multiple initiatives which aim to improve at least three areas linked to levels of trust: community safety, income inequality, and systemic discrimination.

Limitations

As mentioned directly above, one considerable limitation of the study is the under-representation of racialized respondents in York and Peel regions. The limitation is perhaps the most profound obstacle to the generalization of these findings to the wider population.

One other key limitation to this study is that the data are not longitudinal, which would help with investigating cause and effect. Although positive social relationships produce good health, good health can also positively impact social relationships.[46] With longitudinal data, we could observe an order of events, and see which preceded which.

Another limitation is that the survey may be biased towards people who are both healthier, and with positive social relationships. Many potential respondents were approached, and a relatively small fraction participated in the study. This is surely a non-random subsample of those approached, and being more socially connected, as well as being in better health, would likely increase participation rates. If this is the case, the bias towards healthy, well-connected people could artificially reduce the size of the associations we observe. Similarly, York and Peel struggled with recruiting non-White respondents, which could further limit the generalizability of the findings.

Finally, although this study could not detect many significant interactions, this does not establish that all these social resources will always be good for all people, at all times, and all places. The number of interactions tested was large, but the number of factors investigated was very small – essentially, only a few demographics. We do not know, for instance, whether having a large social network is good for one's health in the GTA if one has conflictual or exploitative relationships with others. Almost certainly, it would not be. Therefore, care must be taken to contextualize these results for any program or policy seeking to make use of them.

Conclusion

Social capital matters for good health in the Greater Toronto Area. The findings above suggest that general trust, relationships with friends, and relationships with neighbours are key for producing good health and that these forms of social capital are worth further investigation – both empirically and in terms of interventions that can help to build these social resources. In this process, we should continue to center principles of equity, to ensure that whatever interventions we continue to develop, that the benefits of these interventions are accessible to all.

Appendix: Technical details

This paper employs logistic regression. All regressions controlled for age, gender, sexual orientation, immigration status, education, income, survey mode (internet/telephone), and marital status. A squared term for age was included to account for non-linear associations. Age was mean-centred before producing the squared term, to reduce collinearity with age.

Multiple imputation was employed with chained equations (20 imputations) to assuage problems with missing data. All outcome variables were included in the imputation process, but cases with missing values on the outcome variable were excluded, in order to avoid inducing artificial associations. The squared term for age was passively imputed. All imputation models, and estimation models, employed survey sampling weights.

Analyses were carried out with Stata software version 15.[48]

Table 1: Sample characteristics

	Unweighted N	Unweighted Pct	Weighted N	Weighted Pct
Race/Ethnicity				
White	3,328	62.01%	2,510	46.48%
South Asian	391	7.29%	792	14.67%
Chinese	453	8.44%	610	11.31%
Black	308	5.74%	470	8.7%
Multiracial	383	7.14%	495	9.17%
Else	504	9.39%	522	9.67%
Income				
No income	52	1.16%	59	1.3%
<30k	473	10.55%	569	12.43%
30-60k	932	20.79%	1,039	22.68%
60-80k	668	14.90%	669	14.61%
80-100k	669	14.92%	666	14.54%
100-150k	847	18.89%	849	18.53%
>150k	843	18.80%	729	15.91%
Education				
Less than high school	223	4.04%	283	5.14%
High school	620	11.24%	894	16.23%
College, vocational, or some University	1,492	27.06%	1,885	34.21%
BA or more	3,179	57.65%	2,449	44.43%
Gender				
Male	2,482	44.61%	2,515	45.29%
Female	3,055	54.91%	3,005	54.12%
Else	27	0.49%	33	0.59%
Sexual orientation				
Heterosexual	4,951	94.14%	4,840	92.65%
Homosexual	185	3.52%	205	3.92%
Bisexual	90	1.71%	131	2.51%
Immigration status				
Canadian born	3,470	64.43%	3,192	59.68%
Not born in Canada	1,916	35.57%	2,157	40.32%

	Unweighted N	Unweighted Pct	Weighted N	Weighted Pct
Marital status				
Married	2,793	50.87%	2,521	46.06%
Common law	364	6.63%	386	7.05%
Never married	1,394	25.39%	1,873	34.21%
Divorced/separated	529	9.63%	444	8.12%
Widowed	411	7.48%	250	4.56%
Mode				
Telephone	3,048	54.10%	2,731	48.47%
Online	2,586	45.90%	2,903	51.53%
Age				
18-24	280	5.19%	717	13.30%
25-29	405	7.51%	417	7.74%
30-39	683	12.67%	931	17.27%
40-54	1,365	25.32%	1,531	28.40%
55-64	1,095	20.31%	854	15.85%
65+	1,564	29.01%	939	17.43%

Bibliography

1. Holt-Lunstad J, Smith TB, Layton JB. Social Relationships and Mortality Risk: A Meta-analytic Review. *PLOS Medicine*. 2010;7(7):e1000316. doi:10.1371/journal.pmed.1000316

2. Subramanian SV, Kim DJ, Kawachi I. Social trust and self-rated health in US communities: a multilevel analysis. *J Urban Health*. 2002;79(1):S21-S34. doi:10.1093/jurban/79.suppl_1.S21

3. Pearce N, Davey Smith G. Is Social Capital the Key to Inequalities in Health? *Am J Public Health*. 2003;93(1):122-129. doi:10.2105/AJPH.93.1.122

4. Borgonovi F. Doing well by doing good. The relationship between formal volunteering and self-reported health and happiness. *Social Science & Medicine*. 2008;66(11):2321-2334. doi:10.1016/j.socscimed.2008.01.011

5. Jenkinson CE, Dickens AP, Jones K, et al. Is volunteering a public health intervention? A systematic review and meta-analysis of the health and survival of volunteers. *BMC Public Health*. 2013;13(1):773. doi:10.1186/1471-2458-13-773

6. Piliavin JA, Siegl E. Health Benefits of Volunteering in the Wisconsin Longitudinal Study. *J Health Soc Behav*. 2007;48(4):450-464. doi:10.1177/002214650704800408

7. George LK, Ellison CG, Larson DB. TARGET ARTICLE: Explaining the Relationships Between Religious Involvement and Health. *Psychological Inquiry*. 2002;13(3):190-200. doi:10.1207/S15327965PLI1303_04

8. Ehsan A, Klaas HS, Bastianen A, Spini D. Social capital and health: A systematic review of systematic reviews. SSM - *Population Health*. 2019;8:100425. doi:10.1016/j.ssmph.2019.100425

9. Coleman JS. Social Capital in the Creation of Human Capital. *American Journal of Sociology*. 1988;94:S95-S120. doi:10.1086/228943

10. Bourdieu P. The forms of capital. In: Richardson J, ed. *Handbook of Theory and Research for the Sociology of Education*. Greenwood; 1986:46-58.

11. Putnam RD. Bowling Alone: *The Collapse and Revival of American Community*. Simon & Schuster; 2000.

12. Mamatis D, Sanford S, Ansara D, Roche B. *Promoting Health and Well-Being through Social Inclusion in Toronto: Synthesis of International and Local Evidence and Implications for Future Action*.; 2019.

13. Thoits PA. Social Support and Psychological Well-Being: Theoretical Possibilities. In: Sarason IG, Sarason BR, eds. *Social Support: Theory, Research and Applications*. NATO ASI Series. Springer Netherlands; 1985:51-72. doi:10.1007/978-94-009-5115-0_4

14. Berkman LF, Syme SL. SOCIAL NETWORKS, HOST RESISTANCE, AND MORTALITY: A NINE-YEAR FOLLOW-UP STUDY OF ALAMEDA COUNTY RESIDENTS. *Am J Epidemiol*. 1979;109(2):186-204. doi:10.1093/oxfordjournals.aje.a112674

15. Waite LJ, Iveniuk J, Laumann EO. Social connectedness at older ages and implications for health and well-being. In: *Interpersonal Relationships and Health: Social and Clinical Psychological Mechanisms*. Oxford University Press; 2014:202-231.

16. Feld SL. The Focused Organization of Social Ties. *American Journal of Sociology*. 1981;86(5):1015-1035. doi:10.1086/227352

17. Small ML. *Unanticipated Gains: Origins of Network Inequality in Everyday Life*. Oxford University Press; 2009.

18. Krause N. *Aging in the Church*. Templeton Press; 2008. Accessed January 20th, 2020. https://www.templetonpress.org/books/aging-church

19. Côté RR, Erickson BH. Untangling the Roots of Tolerance: How Forms of Social Capital Shape Attitudes Toward Ethnic Minorities and Immigrants. *American Behavioral Scientist*. 2009;52(12):1664-1689. doi:10.1177/0002764209331532

20. Toronto Foundation, Environics Institute for Survey Research, Community Foundations of Canada, et al. *Toronto Social Capital Study 2018*.; 2018. Accessed July 23rd, 2019. https://www.environicsinstitute.org/docs/default-source/project-documents/toronto-social-capital-project/toronto-social-capital-study---final-report.pdf?sfvrsn=4ff43083_2

21. Ooka E, Wellman B. Does social capital pay off more within or between ethnic groups? Analyzing job searchers in five Toronto ethnic groups. In: *Inside the Mosaic*. University of Toronto Press; 2006:199-226.

22. Government of Canada SC. General Social Survey Social Identity, 2013 Main Survey. Published June 4th, 2013. Accessed August 27th, 2020. https://www.statcan.gc.ca/eng/statistical-programs/instrument/5024_Q1_V3

23. O'Campo P, Wheaton B, Nisenbaum R, Glazier RH, Dunn JR, Chambers C. The Neighbourhood Effects on Health and Well-being (NEHW) study. *Health & Place*. 2015;31:65-74. doi:10.1016/j.healthplace.2014.11.001

24. Idler EL, Benyamini Y. Self-Rated Health and Mortality: A Review of Twenty-Seven Community Studies. *Journal of Health and Social Behavior*. 1997;38(1):21-37. doi:10.2307/2955359

25. Lin N, Fu Y, Hsung R-M, Fu Y, Hsung R-M. The Position Generator: Measurement Techniques for Investigations of Social Capital. Social Capital. doi:10.4324/9781315129457-3

26. Trend analysis - Explore the market - Job Bank. Accessed January 6th, 2020. https://www.jobbank.gc.ca/trend-analysis

27. Iveniuk J, Gunaseelan V. *Race and Social Capital: Examining Trust and Connection in Toronto*. Wellesley Institute; 2021:11.

28. VanderWeele TJ. Religious Communities and Human Flourishing. *Curr Dir Psychol Sci*. 2017;26(5):476-481. doi:10.1177/0963721417721526

29. Habibov N, Weaver R. Endogenous social capital and self-rated health: Results from Canada's General Social Survey. *Health Sociology Review*. 2014;23(3):219-231. doi:10.1080/14461242.2014.11081975

30. Colton T, Janzen B, Laverty W. Family structure, social capital, and mental health disparities among Canadian mothers. *Public Health*. 2015; 129(6):639-647. doi:10.1016/j.puhe.2015.03.023

31. Buck-McFadyen E, Akhtar-Danesh N, Isaacs S, Leipert B, Strachan P, Valaitis R. Social capital and self-rated health: A cross-sectional study of the general social survey data comparing rural and urban adults in Ontario. *Health & Social Care in the Community*. 2019;27(2):424-436. doi: 10.1111/hsc.12662

32. Carpiano RM, Fitterer LM. Questions of trust in health research on social capital: What aspects of personal network social capital do they measure? *Social Science & Medicine*. 2014;116:225-234. doi:10.1016/j.socscimed.2014.03.017

33. Small ML, Adler L. The Role of Space in the Formation of Social Ties. *Annual Review of Sociology*. 2019;45(1):111-132. doi:10.1146/annurev-soc-073018-022707

34. Gloger A. The Connected Community Approach: What it is and why it matters. :12.

35. Fischer CS. *To Dwell Among Friends: Personal Networks in Town and City*. University of Chicago Press; 1982.

36. Matous P, Wang P. External exposure, boundary-spanning, and opinion leadership in remote communities: A network experiment. *Social Networks*. 2019;56:10-22. doi:10.1016/j.socnet.2018.08.002

37. McPherson M, Smith-Lovin L, Cook JM. Birds of a Feather: Homophily in Social Networks. *Annual Review of Sociology*. 2001;27(1):415-444. doi:10.1146/annurev.soc.27.1.415

38. Small ML. *Someone To Talk To*. Oxford University Press; 2017.

39. Small ML, Sukhu C. Because they were there: Access, deliberation, and the mobilization of networks for support. *Social Networks*. 2016;47:73 -84. doi:10.1016/j.socnet.2016.05.002

40. Small ML, Deeds Pamphile V, McMahan P. How stable is the core discussion network? *Social Networks*. 2015;40:90-102. doi:10.1016/j.socnet. 2014.09.001

41. Fischer CS, Offer S. Who is dropped and why? Methodological and substantive accounts for network loss. *Social Networks*. 2020;61:78-86. doi:10.1016/j.socnet.2019.08.008

42. Hochschild A, Machung A. *The Second Shift: Working Families and the Revolution at Home*. Penguin; 2012.

43. Milkie MA, Raley SB, Bianchi SM. Taking on the Second Shift: Time Allocations and Time Pressures of U.S. Parents with Preschoolers. *Social Forces*. 2009;88(2):487-517. doi:10.1353/sof.0.0268

44. Hulchanski JD. *The Three Cities within Toronto: Income Polarization among Toronto's Neighbourhoods, 1970-2005*. Cities Centre, University of Toronto; 2011. Accessed March 22nd, 2019. http://ra.ocls.ca/ra/login.aspx?inst=centennial&url=https://www.deslibris.ca/ID/226176

45. McKenzie K. Racism, Health & What You Can Do About It. Published 2015. Accessed March 24th, 2021. https://www.wellesleyinstitute.com/health/racism-health-what-you-can-do-about-it/

46. Cornwell B. Good health and the bridging of structural holes. *Social Networks*. 2009;31(1):92-103. doi:10.1016/j.socnet.2008.10.005

47. Parsfield M, D M, Mokuolu B, et al. *Community Capital: The Value of Connected Communities*.; 2015.

48. StataCorp. *Stata Release 15*. StataCorp LLC; 2017.