

Self-perceived mental health and its gendered and immigration associations

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Abstract

Background: Many research designs have analyzed various socioeconomic factors that influence a person's physical health, such as diabetes. Whether or not these same factors are associated with a person's mental health have received less attention. Some studies indicate that gender disparities and the migration process may be associated with differential mental health outcomes.

Objective: This research examines the relationship between gender, immigrant status, and self-perceived mental health (SPMH) in the Canadian population aged 18 and over.

Method: The analysis draws on the latest available Canadian Community Health Survey (CCHS) public use microdata file, which captured information from a nationally representative sample of 58,574 adults. Multivariate logistic regression was used to explore interactions of gender and immigrant status on SPMH, controlling for a range of socioeconomic variables including education and income. Survey weights were applied to allow for generalization of the results to the Canadian population.

Results: The relationships between gender, immigrant status, and SPMH were significant, with females more likely to report good SPMH than men (odds ratio=1.16, $p<0.05$), and immigrants more likely to report good SPMH than non-immigrants (odds ratio=1.05).

Discussion: Results indicate that the "healthy immigrant effect" often reported for diabetes and other physical health measures may also be protective for mental health. Women are more likely to rate their mental health as good. However, our examination did not account for clinical diagnosis of mental illness. More research is needed to inform evidence-based policy and practice guidelines in addressing potential gendered and immigration differences in both measured and perceived mental health.

Introduction

Many research designs have analyzed various factors that may influence a person's measured or perceived physical health. Some studies indicate that gender disparities and the migration process may be associated with differential health outcomes. For example, differences across males and females, and across immigrants and non-immigrants, are seen in the prevalence of diabetes (Adhikari and Sanou 2012). As Canada's reliance on immigration to supplement low population growth continues, there is increasing interest in better understanding immigration as a risk factor for chronic health conditions.

The general pattern of adverse diabetes and other physical health outcomes occurring relatively less frequently among those who were foreign-born is attributed to the well-documented "healthy immigrant effect" (Adhikari and Sanou 2012; Halli and Achan 2005; Kennedy et al. 2015; Newbold 2005). Research also shows an increasingly clear relationship between diabetes and a variety of mental health issues (Robinson et al. 2018). Whether or not gender and immigration status are associated with a person's mental health is less well understood, but has important implications for effective management of diabetes distress. This research contributes to the evidence base by examining the relationship between gender, immigrant status, and mental health in the Canadian population aged 18 and older.

Research design

Data

The data utilized for this research is the 2014 Canadian Community Health Survey (CCHS) public use microdata file. The CCHS uses a large-scale multi-stage random sampling approach to represent the population of Canada aged 12 years and over. Excluded from the survey coverage are persons living on reserves and other Aboriginal settlements, full-time members of the Canadian Forces, the institutionalized population, and persons living in certain remote communities; however, these exclusions are estimated to account for no more than 3% of the total population (Statistics Canada, 2015). The microdata file was accessed through Statistics Canada's [Data Liberation Initiative](#) collection.

The CCHS includes variables pertaining to physical and mental health as well as various socioeconomic characteristics. For this study, only adults aged 18 and above are included, a delineation which yielded a sample size of 58,574 respondents.

Outcome variable

The outcome variable is "self-perceived mental health" (SPMH). The CCHS asked respondents to rate their perceived level of mental health, with responses captured in a Likert-type scale. We dichotomized these responses into two categories: "high SPMH" (excellent/very good) or "not high

SPMH” (good/fair/poor). This selection was guided by a rapid review of previously published research articles analysing predictors of mental health outcomes using CCHS data (Chadwick and Collins 2015; Mawani and Gilmour 2010).

Predictor variables

The main predictors of interest are gender (male or female) and immigrant status (immigrant or non-immigrant). We hypothesize that females are more likely to report their perceived mental health as not high compared to males, and that immigrants are more likely to perceive their mental health as high compared to non-immigrants.

We also consider a range of sociodemographic characteristics identified in the literature as potential confounding factors for mental health outcomes (Chadwick and Collins 2015; Mawani and Gilmour 2010). These include age, marital status, educational attainment, and income. We further control for life stress, based on findings elsewhere that general degree of stress can affect health outcomes, as exacerbated or mitigated by social structures, social status, and social roles (Williams, Yu and Jackson 1997).

Statistical analysis

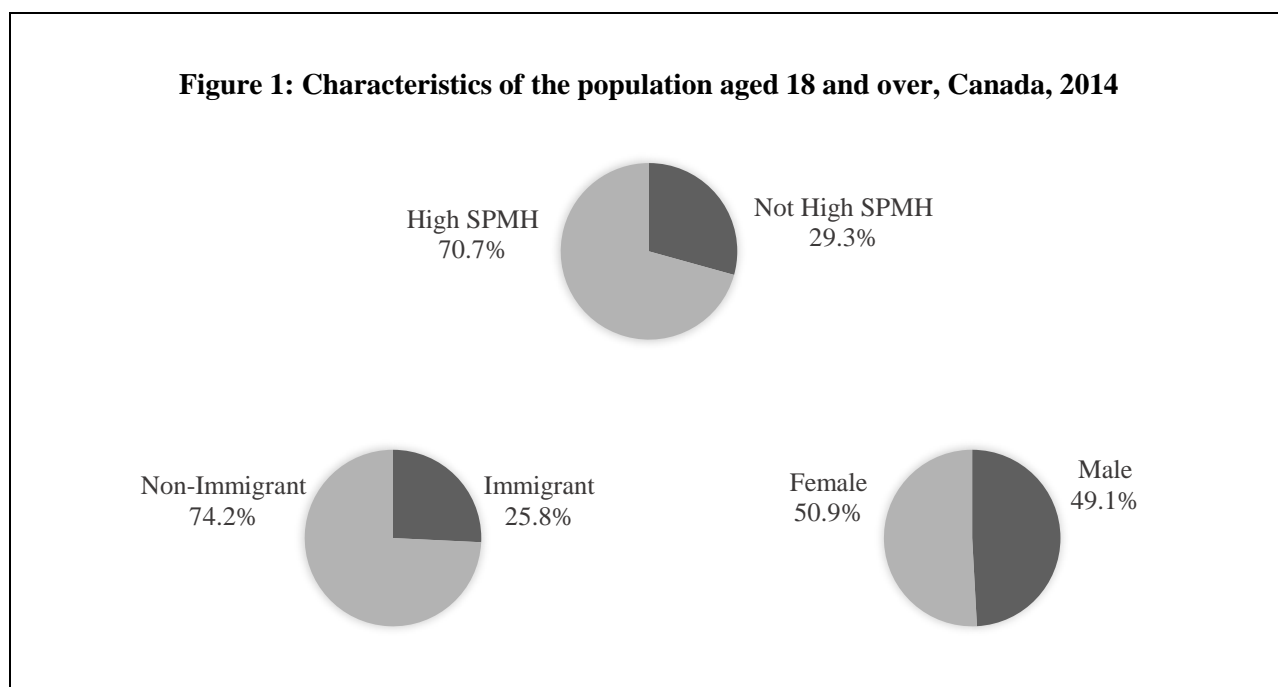
First we performed chi-square analysis of the relationship between gender and SPMH, and between immigrant status and SPMH. Chi-square is the most appropriate statistical tool for this type of bivariate analysis, as each of our variables is categorical with two groups. The level of significance (alpha) was set at 0.05; in other words, the cut-off for the probability of the results occurring by chance (rather than representing a “true” relationship in the population) was set at less than 5%.

Following the bivariate analysis, multivariate logistic regression was used to assess the associations (or potential lack thereof) between gender, immigrant status, and SPMH. Logistic regression, one of the most frequently used tools in social science research, is appropriate here since we have a dichotomous dependent variable and consider a range of predictors. Our model included all of the above-identified predictor variables, plus an interaction term to test the joint influence of gender with immigrant status on mental health outcomes. Results from the logistic regression are expressed in terms of the odds-ratio for each predictor, with the interest in values that differ from 1, and considered in comparison to a reference category (for which the value is set at 1). A ratio greater than 1 implies that an individual in the given category has a higher odds of high self-perceived mental health compared to a counterpart in the reference category. An odds-ratio less than 1 suggests lower odds than in the reference group, while a ratio equal to 1 implies no difference between the groups.

The analyses were conducted using the SPSS statistical software package. Survey weights were applied to allow for generalization of the CCHS data to Canada's community-dwelling adult population. The covariates in the logistic regression were entered into the model in a forced entry manner, as there was no prior determination that any of the predictors held more weight to the relationship than others. Significance was evaluated with the Wald statistic, with the alpha set at 0.05.

Results

As seen in Figure 1, over two-thirds (70.7%) of Canadian adults rate their mental health as high, as reported in the 2014 CCHS. Just over half (50.9%) of the target population are female, and one-quarter (25.8%) are foreign-born.



Source: 2014 Canadian Community Health Survey.

The chi-square analysis assessing the relationship between gender and SPMH yielded significant results [$X^2(1)=11157.33$, $p<.05$], thereby acknowledging that the likelihood of having high SPMH is different between males and females. Likewise, results assessing the relationship between immigrant status and SPMH were also significant [$X^2(1)=1256.57$, $p<.05$].

Results from the logistic regression analysis provided clarifying information in terms of the direction of the relationships, while controlling for additional socioeconomic factors. As presented in Table 1, evidence is found that, at $\alpha=.05$, the relationships between gender and SPMH and between immigrant status and SPMH remained significant, independently of other factors. In particular, females were 1.16 times more likely (odds-ratio=1.16, $p<.05$) to report higher SPMH when compared to males. Immigrants were 1.05 times more likely to report high SPMH when compared to non-immigrants.

Table 1: Odds ratios from the logistic regression for predictors of self-perceived mental health in the Canadian adult population

	Odds ratio
Gender	
Female	1.16*
Male (ref)	1.00
Immigrant status	
Immigrant	1.05*
Non-immigrant (ref)	1.00
Age group	
18-34 years	1.48*
35-64 years	1.06*
65 years and over (ref)	1.00
Marital status	
Single (ref)	1.00
Married/common-law	1.29*
Widowed/separated/divorced	0.95*
Education	
Less than post-secondary (ref)	1.00
Post-secondary diploma/degree	1.34*
Personal income	
Less than \$20,000	0.38*
\$20,000-\$39,999	0.50*
\$40,000-\$59,999	0.74*
\$60,000 or more (ref)	1.00
Life Stress	
Not very stressful	3.73*
A little stressful	1.83*
Very stressful (ref)	1.00
Interaction: Gender x Immigrant status	0.90*

* $p<.05$; ref=reference group.

Source: 2014 Canadian Community Health Survey (sample size=58,574).

Other significant findings include:

- The odds of reporting high SPMH tend to decrease with age. Younger adults aged 18-34 were 1.48 times more likely to report high SPMH, and those aged 35-64 were 1.06 times more likely, compared to seniors aged 65 and above.
- Marriage is protective of mental health. Adults who were in a marital or common law union were 1.29 times more likely to report high SPMH when compared to their single counterparts.
- Education is protective of mental health. Respondents who had completed post-secondary education were 1.34 times more likely to report high SPMH when compared to respondents with lower levels of educational attainment.
- Higher income is protective of mental health. Respondents whose personal annual income was less than \$20,000 had significantly lower odds of high SPMH (0.376, $p < .05$) when compared to respondents who earned above \$60,000. In between, the odds of high SPMH increased with each income bracket.
- Respondents who reported having not much life stress were 3.73 times more likely to have high SPMH when compared to respondents who reported their life was very stressful.

It should be noted, however, that the Cox and Snell test of the regression model's goodness-of-fit yielded a low value of 0.075, suggesting poor accountability of the variance in SPMH by our predictors. The present findings should be considered with caution. It is likely that additional unknown or unobservable factors contribute to mental health outcomes.

Discussion

This study examined a range of potential correlates of mental health outcomes drawing on a large-scale nationally representative survey of the Canadian adult population. Results showed that women are more likely to rate their perceived mental health as high compared to men, all else being equal. The "healthy immigrant effect" often reported in the literature for physical health is also found to be protective for mental health.

In addition, as could be expected, higher likelihood of positive self-perceived mental health was found in those who were younger, living in union, had higher educational attainment, received higher personal income, and reported little life stress.

A possible limitation to the study is the means used to measure mental health. Our examination did not account for clinical diagnosis of mental illness. Self reports of mental health may be subjective when captured in population-based surveys. In particular, Mawani and Gilmour (2010) suggested that

women may be more likely to report their mental health as low, but are also more likely to have a diagnosed mental morbidity. In terms of assessing the healthy immigrant effect, while some research has found that the protective effect deteriorates as the length of residence in Canada increases (Halli and Achan 2005), we were unable to test for this using the latest publicly available data. The CCHS public use microdata files are subject to important disclosure controls by Statistics Canada to protect the anonymity of individual survey respondents. As such, some variables – including country of origin and time since immigration – were suppressed or only released in highly aggregate form in the 2014 public file. Future research options include accessing the master dataset, with full information excluded from the public file, through the secure environment of Statistics Canada's [Research Data Centre](#) network.

Despite certain limitations, this study does support the importance of gender-sensitive and culturally appropriate practices in mental health care. Given that poor mental health is a common comorbidity of many physical health conditions, including diabetes, the implications of this research extend beyond perceived mental health as the measured outcome. More research is needed to inform evidence-based guidelines for healthcare professionals in addressing potential gendered and immigration differences in both measured and perceived mental and physical health.

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