# Black-White health inequalities in Canada at the intersection of gender and immigration

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## ABSTRACT

**OBJECTIVES:** Intersectionality theory proposes that each combination of social categories derived from gender, race and nationality, such as immigrant White man or native-born Black woman, is associated with unique social experiences. We tested the potential of intersectionality theory for explicating racial inequalities in Canada by investigating whether Black-White health inequalities are conditioned by gender and immigrant status in a synergistic way.

**METHODS:** Our dataset comprised 10 cycles (2001–2013) of the Canadian Community Health Survey. We used binary logistic regression to model Black-White inequalities in hypertension, diabetes, self-rated health, self-rated mental health and asthma separately for native-born women, native-born men, immigrant women and immigrant men.

**RESULTS:** After controlling for potentially confounding factors we found that immigrant Black women had significantly higher odds of hypertension, diabetes and fair/poor self-rated health than immigrant White women. Native-born Black women and immigrant Black men had higher odds of hypertension and diabetes than native-born White women and immigrant White men respectively, and native-born White women were more likely than native-born Black women to report asthma. There were no statistically significant health differences between native-born Black and White men. Socio-economic status, smoking, physical activity and body mass index were implicated in some but not all of these racial health inequalities. None of the three-way interactions between racial identity, gender and immigration status was statistically significant.

**CONCLUSION:** We found relatively high risks of ill health for Black Canadians in three of the four samples. Overall, however, we found little support for the intersectional hypothesis that Black-White health inequalities in Canada are conditioned by gender and immigrant status in a synergistic way.

**KEY WORDS:** Canada; Black; White; intersectionality; racial health inequalities; gender; immigration; socioeconomic status; health behaviours; body mass index

La traduction du résumé se trouve à la fin de l'article.

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Intersectionality theory, a framework that has gained global prominence in the past decade, proposes that axes of inequality such as racism, sexism and nationalism are mutually constituted.[1–4] Systemic relations of power along the lines of race, gender and nationality are thought to be contingent upon one another rather than analytically distinct systems. One outcome of the entanglement of these axes of inequality at the macro levels of society is that the social identities they form (immigrant Black woman, native-born White man, etc.) sometimes correspond with unique circumstances and experiences at the micro level. For quantitative health researchers, this means that the health effects of racial identity, gender and immigrant status should not be treated as distinct phenomena, examined separately or considered as control variables for one another. Rather, the unique circumstances of the complex social identities manifested at the intersection of racism, sexism and nationalism should be accommodated in the form of statistical interactions between racial (or racialized) identity, gender and immigrant status in regression-based modelling of health outcomes.[5,6] Informed by intersectionality theory, we apply regression modelling to data from the Canadian Community Health Survey (CCHS) to investigate the degree to which Black-White health inequalities intersect (interact) with gender and immigration status in Canada.

Intersectionality theory leads us to hypothesize that Black-White health inequalities in Canada are conditioned by gender and immigration in a synergistic way. Institutional and interpersonal forms of racism encountered regularly by Black Canadians[7] can adversely affect their health by way of being stressful experiences in their own right and also by disproportionately excluding Black people from well-paying jobs and high-quality health care.[8,9] However, factors associated with immigration can also shape the nature and intensity of the racism experienced by Black Canadians. For example, Black immigrants to Canada often face undervaluation of educational credentials and work skills

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acquired prior to immigration, leading to significant wage penalties.[10–12] In other words, the labour market experiences of Black (and other) Canadians are to a degree shaped by the intersection between racism and immigration. Similarly, factors associated with gender can shape the racism experienced by Black Canadians. For example, Black women have traditionally been marginal to both the women's liberation movement and the Black liberation movement, and have suffered setbacks in the legal system as a result.[13,14] Intersections between racism and sexism may therefore shape legal (and other) outcomes for Black Canadian women.

Yet depictions of intersections between race and nationality or between race and gender still misrepresent the effects of racism in the lives of Black Canadians to the degree that experiences of racism are conditioned by gender *and* immigration in a synergistic way. For example, visible minority immigrant women are often described as "partner immigrants", women who move to a new country solely at the behest of their partners. This is a derogatory label with little regard for these women's own career aspirations, which often means inordinately lower wages and worse employment conditions for these women.[15] If she is married to a man who expects a clear, sex-linked division of labour that upholds his authority in the household, a Black immigrant woman acculturating to Canadian society may experience family-based tensions that can lead to divorce, alcoholism or spousal abuse.[16] In other words, racism, sexism and nationalism may intersect with one another to create unique life experiences of a particularly pernicious and health-damaging kind for immigrant Black women.

Nearly all previous research on health inequalities between Black and White Canadians has failed to consider explicitly the intersection between racism, sexism and nationalism, instead treating gender and immigrant status as control variables or ignoring one or both entirely.[17,18] Several studies have examined the intersection between Black or White identity and gender in the production of health inequalities in Canada.[19–21] These address the gendered nature of experiences with racial identity but implicitly assume that Black and White women and men experience nativity or immigration identically. Other studies, which describe gendered Black-White health inequalities among native-born people only[22] or immigrants only,[23] are unable to compare explicitly gendered Black-White health inequalities among native-born and immigrant Canadians.

As far as we know, no previous study has examined the health consequences of intersections among racial identity (Black or White), gender and immigration in Canada (although we have ourselves previously studied the health consequences of intersections among South Asian-White identity, gender and immigration). Part of the reason for this lacuna may be that the subsamples of native-born Black Canadians contained in nationally representative survey datasets are too small for this purpose. We used combined data from 10 cycles of the CCHS to document Black-White inequalities in hypertension, diabetes, self-rated health, self-rated mental health and asthma in separate samples of native-born women, native-born men, immigrant women and immigrant men. The size of our pooled dataset allows us to test the proposition that racial identity is entwined with gender and immigration in the production of Black-White health inequalities in Canada.

## METHODS

Statistics Canada conducted the CCHS in 2001, 2003 and 2005 and annually from 2007 onwards. The target populations for these cross-sectional surveys were people 12 years of age and older residing in Canada, excluding individuals living on Indian Reserves and on Crown Lands, institutional residents, full-time members of the Canadian Armed Forces and residents of some remote regions. One person was chosen randomly from each household to complete the survey. Response rates for the surveys ranged from a high of 84.7% in 2001 to a low of 66.7% in 2013.

*Racial identity* was assessed by asking whether respondents regarded themselves as Black, White, some other identity or a combination of identities. We confined our analyses to participants who reported Black identity only or White identity only. *Immigration status* distinguished respondents born in Canada from recent immigrants (immigrated to Canada less than 10 years ago), mid-term immigrants (10–19 years ago) and long-term immigrants (20 or more years ago). *Marital status* distinguished between married or common-law, divorced or separated, widowed and never married. *Educational attainment* distinguished between less than a high school diploma, high school diploma or General Educational Development, community college or trade school, and bachelor's degree or higher. *Household income*, expressed in population deciles, depicted each respondent's household income relative to a low-income cut-off that accounts for household size and the population size of the respondent's community of residence. *Smoking status* distinguished between never smoked, formerly smoked, smokes occasionally and smokes daily. A *physical activity index* characterized leisure-time physical activity as active, moderately active or inactive. *Body mass index (BMI)* was calculated from self-reported height and weight. *Self-rated health* and *self-rated mental health* were dichotomized to distinguish fair or poor health from excellent, very good or good health. Other indicators assessed the presence or absence of *hypertension*, *diabetes* and *asthma*.

We combined data from cycles 2001 through 2013 of the CCHS. Exclusion of cases without valid information for racial/cultural identity, gender or immigrant status produced a sample of 3,422 Black women, 335,277 White women, 2,747 Black men and 270,473 White men aged 25 and older. The socio-demographic and health-related characteristics of the sample are described in Tables 1 and 2 respectively. Table 1 indicates that the Black respondents were much younger, on average, than the White respondents. Compared with White respondents, proportionately fewer Black respondents were born in Canada, were married or lived in rural settings. Black men and women were also less physically active, more likely to smoke, better educated and poorer.

Tables 1 and 2 identify missing data for independent and dependent variables. BMI was not calculated for pregnant women. To accommodate missing values in our regression models, we adopted the imputed data for household income provided by Statistics Canada for the 2005–2013 cycles, used missing-data categories for household income in 2001 and 2003 and for the other independent variables, and applied list-wise deletion to remove missing values from each of the dependent variables in the respective models. To account for the complex sampling design, we applied the master weight and 500 bootstrap replicate weight

**Table 1.** Socio-demographic characteristics of the sample (Canadian Community Health Survey)

| | Black women | | White women | | Black men | | White men | |
|---|---|---|---|---|---|---|---|---|
| | *n* | % | *n* | % | *n* | % | *n* | % |
| Age (years) | | | | | | | | |
| 25–34 | 990 | 28.9% | 50,821 | 15.2% | 719 | 26.2% | 42,030 | 15.5% |
| 35–44 | 921 | 26.9% | 54,227 | 16.2% | 862 | 31.4% | 50,854 | 18.8% |
| 45–54 | 521 | 15.2% | 59,151 | 17.6% | 482 | 17.5% | 51,590 | 19.1% |
| 55–64 | 487 | 14.2% | 66,358 | 19.8% | 367 | 13.4% | 54,573 | 20.2% |
| 65+ | 503 | 14.7% | 104,720 | 31.2% | 317 | 11.5% | 71,426 | 26.4% |
| Immigration status | | | | | | | | |
| Canadian | 679 | 19.8% | 299,501 | 89.3% | 531 | 19.3% | 241,536 | 89.3% |
| Immigrated 0–10 years ago | 691 | 20.2% | 2946 | 0.9% | 642 | 23.4% | 2540 | 0.9% |
| Immigrated 10–20 years ago | 674 | 19.7% | 3009 | 0.9% | 540 | 19.7% | 2447 | 0.9% |
| Immigrated 20+ years ago | 1378 | 40.3% | 29,821 | 8.9% | 1034 | 37.6% | 23,950 | 8.9% |
| Marital status | | | | | | | | |
| Married/common-law | 1412 | 41.3% | 189,074 | 56.4% | 1552 | 56.5% | 176,857 | 65.4% |
| Single/never married | 1133 | 33.1% | 42,529 | 12.7% | 785 | 28.6% | 49,668 | 18.4% |
| Divorced/separated | 623 | 18.2% | 42,223 | 12.6% | 367 | 13.4% | 30,167 | 11.2% |
| Widowed | 254 | 7.4% | 61,451 | 18.3% | 43 | 1.6% | 13,781 | 5.1% |
| Rural vs. urban residence | | | | | | | | |
| Urban | 3263 | 95.4% | 244,037 | 72.8% | 2595 | 94.5% | 189,593 | 70.1% |
| Rural | 159 | 4.6% | 91,240 | 27.2% | 152 | 5.5% | 80,880 | 29.9% |
| Educational attainment | | | | | | | | |
| Less than high-school diploma | 488 | 14.3% | 75,737 | 22.6% | 371 | 13.5% | 61,113 | 22.6% |
| High-school diploma | 481 | 14.1% | 59,958 | 17.9% | 439 | 16.0% | 42,960 | 15.9% |
| College/trade school | 1689 | 49.4% | 140,174 | 41.8% | 1162 | 42.3% | 116,270 | 43.0% |
| Bachelor and above | 725 | 21.2% | 56,259 | 16.8% | 735 | 26.8% | 47,079 | 17.4% |
| Not stated | 39 | 1.1% | 3149 | 0.9% | 40 | 1.5% | 3051 | 1.1% |
| Household income decile | | 0.0% | | | | | | 0.0% |
| 1 | 821 | 24.0% | 30,638 | 9.1% | 424 | 15.4% | 15,855 | 5.9% |
| 2 | 541 | 15.8% | 42,021 | 12.5% | 342 | 12.4% | 21,125 | 7.8% |
| 3 | 379 | 11.1% | 35,455 | 10.6% | 343 | 12.5% | 23,573 | 8.7% |
| 4 | 344 | 10.1% | 32,926 | 9.8% | 309 | 11.2% | 24,488 | 9.1% |
| 5 | 297 | 8.7% | 31,256 | 9.3% | 272 | 9.9% | 25,306 | 9.4% |
| 6 | 266 | 7.8% | 31,220 | 9.3% | 238 | 8.7% | 27,001 | 10.0% |
| 7 | 205 | 6.0% | 28,661 | 8.5% | 222 | 8.1% | 26,580 | 9.8% |
| 8 | 184 | 5.4% | 28,608 | 8.5% | 196 | 7.1% | 28,634 | 10.6% |
| 9 | 158 | 4.6% | 29,594 | 8.8% | 173 | 6.3% | 31,620 | 11.7% |
| 10 | 100 | 2.9% | 28,457 | 8.5% | 142 | 5.2% | 34,999 | 12.9% |
| Not applicable | 36 | 1.1% | 4023 | 1.2% | 37 | 1.3% | 4026 | 1.5% |
| Not stated | 91 | 2.7% | 12,418 | 3.7% | 49 | 1.8% | 7266 | 2.7% |
| Physical activity | | | | | | | | |
| Active | 572 | 16.7% | 69,419 | 20.7% | 688 | 25.0% | 66,450 | 24.6% |
| Moderate | 698 | 20.4% | 84,193 | 25.1% | 572 | 20.8% | 65,427 | 24.2% |
| Inactive | 2093 | 61.2% | 177,084 | 52.8% | 1439 | 52.4% | 128,036 | 47.3% |
| Not stated | 59 | 1.7% | 4581 | 1.4% | 48 | 1.7% | 10,560 | 3.9% |
| Smoking status | | | | | | | | |
| Daily | 221 | 6.5% | 58,288 | 17.4% | 377 | 13.7% | 58,006 | 21.4% |
| Occasional | 97 | 2.8% | 11,871 | 3.5% | 173 | 6.3% | 10,851 | 4.0% |
| Former | 565 | 16.5% | 146,576 | 43.7% | 823 | 30.0% | 140,870 | 52.1% |
| Never | 2534 | 74.1% | 117,900 | 35.2% | 1369 | 49.8% | 60,092 | 22.2% |
| Not stated | 5 | 0.1% | 642 | 0.2% | 5 | 0.2% | 654 | 0.2% |
| Body mass index | | | | | | | | |
| Underweight | 78 | 2.3% | 9,076 | 2.7% | 42 | 1.5% | 1853 | 0.7% |
| Healthy | 1308 | 38.2% | 147,748 | 44.1% | 1083 | 39.4% | 91,009 | 33.6% |
| Overweight | 1056 | 30.9% | 97,380 | 29.0% | 1144 | 41.6% | 114,922 | 42.5% |
| Obese | 676 | 19.8% | 61,664 | 18.4% | 408 | 14.9% | 56,348 | 20.8% |
| Not applicable | 95 | 2.8% | 4614 | 1.4% | | | | |
| Unknown | 209 | 6.1% | 14,795 | 4.4% | 70 | 2.5% | 6341 | 2.3% |
| Total | 3422 | | 335,277 | | 2747 | | 270,473 | |

variables provided by Statistics Canada. The statistical analyses were conducted in Stata 13 (StataCorp, College Station, TX). The study was ethically approved by the Behavioural Research Board at the Point Grey campus of the University of British Columbia.

## RESULTS

For each dependent variable, we produced three binary logistic regression models separately for native-born women, native-born men, immigrant women and immigrant men (Table 3). The first model in each set controlled for survey year, age in years, square of age, marital status, rural versus urban residence and, for immigrants, length of time in Canada. This model served to establish associations between racial identity and health while controlling for major potential confounders. Predicted probabilities were derived from the first model using the *margins (atmeans)* command in Stata (Table 4). Comparisons of the odds ratios (ORs) for Black versus White identity and the predicted probabilities for Black and White men and women in the four subsamples provide insight into whether and how Black-White health inequalities are shaped by the intersection of gender and immigration. The second model in each set additionally controlled for education and household income, and the third model additionally controlled for smoking, physical activity and BMI. These models provide insight into the degree to which

**Table 2.** Health profile of the sample (Canadian Community Health Survey)

| | Black women | | White women | | Black men | | White men | |
|---|---|---|---|---|---|---|---|---|
| | *n* | % | *n* | % | *n* | % | *n* | % |
| Hypertension | | | | | | | | |
| No | 2601 | 76.0% | 247,416 | 73.8% | 2223 | 80.9% | 208,167 | 77.0% |
| Yes | 817 | 23.9% | 87,327 | 26.0% | 521 | 19.0% | 61,405 | 22.7% |
| Not stated | 4 | 0.1% | 534 | 0.2% | 3 | 0.1% | 901 | 0.3% |
| Diabetes | | | | | | | | |
| No | 3128 | 91.4% | 310,132 | 92.5% | 2499 | 91.0% | 246,032 | 91.0% |
| Yes | 293 | 8.6% | 24,862 | 7.4% | 248 | 9.0% | 24,204 | 8.9% |
| Not stated | 1 | 0.0% | 283 | 0.1% | 0 | 0.0% | 237 | 0.1% |
| Fair/poor self-rated health | | | | | | | | |
| No | 2911 | 85.1% | 282,753 | 84.3% | 2458 | 89.5% | 228,030 | 84.3% |
| Yes | 504 | 14.7% | 52,139 | 15.6% | 286 | 10.4% | 42,117 | 15.6% |
| Not stated | 7 | 0.2% | 385 | 0.1% | 3 | 0.1% | 326 | 0.1% |
| Fair/poor self-rated mental health | | | | | | | | |
| No | 2783 | 81.3% | 263,124 | 78.5% | 2302 | 83.8% | 206,942 | 76.5% |
| Yes | 168 | 4.9% | 16,052 | 4.8% | 123 | 4.5% | 12,594 | 4.7% |
| Not applicable | 425 | 12.4% | 52,382 | 15.6% | 291 | 10.6% | 43,934 | 16.2% |
| Not stated | 46 | 1.3% | 3719 | 1.1% | 31 | 1.1% | 7003 | 2.6% |
| Asthma | | | | | | | | |
| No | 3170 | 92.6% | 303,361 | 90.5% | 2611 | 95.0% | 252,991 | 93.5% |
| Yes | 251 | 7.3% | 31,659 | 9.4% | 135 | 4.9% | 17,278 | 6.4% |
| Not stated | 1 | 0.0% | 257 | 0.1% | 1 | 0.0% | 204 | 0.1% |
| Total | 3422 | | 335,277 | | 2747 | | 270,473 | |

**Table 3.** Odds ratios from weighted logistic regression models estimating risk of self-reported ill health for Black (versus White) Canadians (with 95% confidence intervals based on bootstrapped variance estimation)

| | Native-born women | | | Native-born men | | |
|---|---|---|---|---|---|---|
| | Model 1 | Model 2 | Model 3 | Model 1 | Model 2 | Model 3 |
| Hypertension | 1.98 (1.30–3.00) | 1.89 (1.24–2.87) | 1.82 (1.19–2.78) | 1.52 (0.79–2.92) | 1.48 (0.78–2.80) | 1.49 (0.76–2.89) |
| Diabetes | 2.31 (1.28–4.17) | 2.06 (1.15–3.67) | 1.96 (1.09–3.53) | 1.42 (0.80–2.52) | 1.26 (0.72–2.20) | 1.26 (0.72–2.21) |
| F/P SR health | 1.35 (0.97–1.90) | 1.15 (0.81–1.65) | 1.23 (0.84–1.81) | 1.37 (0.81–2.32) | 1.06 (0.62–1.80) | 1.16 (0.67–2.01) |
| F/P SR mental health | 0.82 (0.45–1.51) | 0.72 (0.38–1.35) | 0.76 (0.40–1.44) | 0.82 (0.48–1.40) | 0.65 (0.38–1.11) | 0.70 (0.40–1.21) |
| Asthma | 0.68 (0.43–1.07) | 0.64 (0.40–1.00) | 0.62 (0.39–0.98) | 0.94 (0.60–1.46) | 0.88 (0.56–1.37) | 0.86 (0.55–1.35) |
| | **Immigrant women** | | | **Immigrant men** | | |
| | Model 1 | Model 2 | Model 3 | Model 1 | Model 2 | Model 3 |
| Hypertension | 2.66 (2.17–3.27) | 2.40 (1.97–2.93) | 2.14 (1.72–2.65) | 1.53 (1.25–1.88) | 1.50 (1.23–1.83) | 1.62 (1.33–1.98) |
| Diabetes | 2.89 (2.18–3.82) | 2.63 (1.99–3.47) | 2.32 (1.72–3.12) | 2.21 (1.68–2.91) | 2.00 (1.53–2.62) | 2.27 (1.73–2.99) |
| F/P SR health | 1.37 (1.09–1.71) | 1.10 (0.88–1.39) | 1.01 (0.79–1.28) | 1.19 (0.92–1.55) | 0.94 (0.72–1.24) | 1.04 (0.79–1.38) |
| F/P SR mental health | 0.88 (0.63–1.23) | 0.72 (0.51–1.02) | 0.74 (0.52–1.04) | 1.17 (0.76–1.81) | 0.89 (0.57–1.39) | 1.03 (0.67–1.58) |
| Asthma | 1.34 (0.95–1.90) | 1.32 (0.94–1.85) | 1.35 (0.95–1.93) | 0.78 (0.54–1.14) | 0.71 (0.48–1.05) | 0.71 (0.47–1.06) |

Note: For each dependent variable, Model 1 controls for survey year, age, age squared, marital status and rural versus urban residence. Model 2 additionally controls for educational attainment and household income, and Model 3 additionally controls for physical activity, smoking status and body mass index.
F/P SR, fair/poor self-rated.

socio-economic status, health-related behaviours and BMI explain any previously established associations. Finally, tests of significance for three-way interactions among racial identity, gender and immigrant status were obtained from logistic regression models that feature hierarchically well-ordered interaction terms based on the full sample and that control for survey year, age in years, square of age, marital status and rural versus urban residence (these models not shown).

Table 3 shows that Black-White inequalities in hypertension were quite strong among immigrant women (OR = 2.66, 95% confidence interval [CI] = 2.17–3.27), less strong but still statistically significant among native-born women (OR = 1.98, 95% CI = 1.30–3.00) and immigrant men (OR = 1.53, 95% CI = 1.25–1.88), and statistically non-significant among native-born men (OR = 1.52, 95% CI = 0.79–2.92). Although the predicted probabilities of Table 4 indicate an inordinately high rate of hypertension (34.0%) among Black immigrant women especially, a non-significant ($p > 0.10$) three-way multiplicative term in the corresponding hierarchically well-ordered regression model represents a lack of compelling evidence for the hypothesis that Black-White inequalities in hypertension are conditioned by gender and immigrant status in a synergistic way. Table 3 shows that the relatively high risk of hypertension for immigrant Black women compared with immigrant White women was somewhat attenuated after socio-economic status, health-related behaviours and BMI had been controlled for.

**Table 4.** Predicted probabilities derived from weighted logistic regression models estimating risk of self-reported ill health for Black and White Canadians

| | Women | | | | Men | | | |
|---|---|---|---|---|---|---|---|---|
| | Native-born Black | Native-born White | Immigrant Black | Immigrant White | Native-born Black | Native-born White | Immigrant Black | Immigrant White |
| Hypertension | 22.6% | 12.9% | 34.0% | 16.2% | 20.2% | 14.3% | 24.2% | 17.3% |
| Diabetes | 8.7% | 4.0% | 11.0% | 4.1% | 6.1% | 4.4% | 10.0% | 4.8% |
| F/P SR health | 14.0% | 10.7% | 17.8% | 13.6% | 13.6% | 10.3% | 12.6% | 10.8% |
| F/P SR mental health | 4.4% | 5.3% | 4.8% | 5.4% | 3.8% | 4.6% | 5.0% | 4.3% |
| Asthma | 6.8% | 9.8% | 8.1% | 6.2% | 6.2% | 6.6% | 3.3% | 4.2% |

Note: Each model controls for survey year, age, age squared, marital status and rural versus urban residence. The predicted probabilities were calculated using the margins (atmeans) command in Stata 13.
F/P SR, fair/poor self-rated.

Similar to the results for hypertension, Black-White inequalities in the risk of diabetes were strongest among immigrant women (OR = 2.89, 95% CI = 2.18–3.82), less strong among native-born women (OR = 2.31, 95% CI = 1.28–4.17) and immigrant men (OR = 2.21, 95% CI = 1.68–2.91), and weak to the point of non-significance among native-born men (OR = 1.42, 95% CI = 0.80–2.52). A non-significant ($p > 0.10$) three-way multiplicative term in the corresponding model militates against the hypothesis that Black-White inequalities in diabetes are conditioned by gender and immigrant status in a synergistic way. Table 3 shows that the relatively high risks of diabetes for native-born and immigrant Black women were partly explained by socio-economic status, health-related behaviours and BMI.

We also found statistically significant Black-White differences in fair/poor self-rated health among immigrant women (OR = 1.37, 95% CI = 1.09–1.71), largely attributed to differences in household income, and in asthma among native-born women after socio-economic status, health-related behaviours and BMI had been controlled for (OR = 0.62, 95% CI = 0.39–0.98). Self-rated mental health was not significantly related to Black-White identity in any of our subsamples. None of self-rated health ($p > 0.10$), self-rated mental health ($p > 0.10$) or asthma ($p > 0.05$) corresponded with a statistically significant interaction between racial identity, gender and immigrant status in hierarchically well-ordered regression models.

## DISCUSSION

As far as we know, ours is the first study to examine the health consequences of intersections between racial identity (Black or White), gender and immigration in Canada. Overall, we found little support for the hypothesis that Black-White health inequalities are conditioned by gender and immigrant status in a synergistic way. Low statistical power arising from relatively small samples of native-born Black women ($n = 679$) and men ($n = 531$) may have been a mitigating factor in this regard. We did find, however, that Black-White inequalities in hypertension were conditioned by gender among immigrants, with Black women being inordinately likely to report this illness. Immigrant Black women's high risk of hypertension was somewhat attenuated upon controlling for socio-economic status, health-related behaviours and BMI. Our models also indicate that differences in household income explained some of the relatively high risks of diabetes for native-born Black women, immigrant Black women and immigrant Black men, while health-related behaviours and BMI explained some of the higher risk of diabetes for immigrant Black women. Lastly, we found that immigrant Black women were significantly more likely than immigrant White women to report fair/poor self-rated health, a pattern largely explained by household income, and native-born Black women were significantly less likely than native-born White women to report asthma after socio-economic and behavioural factors had been controlled for.

High rates of hypertension among Black Canadians are consistent with research from the US, which indicates that race-based discrimination contributes to the development of hypertension among African Americans.[24,25] High rates of diabetes among Black Canadians are also consistent with research from the US, which links chronic stress[26,27] and internalized racism[28,29] to insulin resistance and other precursors of type II diabetes. The explanatory role played by household income in several of our models indirectly implicates racism in the labour market as a factor in Black-White health inequalities in Canada. Given that the majority of Black Canadians are immigrants, Black-White inequalities in hypertension and diabetes may also reflect the fact that the most common countries of origin of Black immigrants (who predominantly come from Africa and the Caribbean) and White immigrants (mostly from Europe and the US) have different rates of hypertension and diabetes that affect the prevalence of these chronic illnesses in their emigrants.[30,31] Future research should examine the role of the country or region of origin in the relationships reported here. Finally, specific experiences and circumstances presumed to be unique to immigrant Black women were not examined in our study. Future research should seek to identify such factors.

Our study has noteworthy limitations. First, even after combining all available cycles of the CCHS, the samples of native-born Black women and men were still somewhat small, limiting our ability to identify statistically significant associations within these groups or statistically significant interactions among racial identity, gender and nativity affecting health in the CCHS sample as a whole. Second, we did not have access to measures of experiences of discrimination in these data and therefore can only speculate that the racial health inequalities observed here are a consequence of interpersonal or institutional racism. Third, we did not consider occupation, possibly a crucially important aspect of

socio-economic status for illuminating the health effects of institutionalized racism. Future research in this area should consider merging future cycles of the CCHS into this dataset so as to produce larger samples for native-born Black Canadians and should incorporate indicators of occupation into their analyses.

In summary, compared with their White counterparts, we identified high risks of hypertension for native-born Black women and immigrant Black women and men, high risks of diabetes for native-born Black women and immigrant Black women and men, and a high risk of fair/poor self-rated health for immigrant Black women. Native-born White women were more likely than native-born Black women to report asthma. We found little evidence for Black-White inequalities in self-rated mental health. We conclude that a dearth of attention to the intersection between all three of racial identity (Black or White), gender (female or male) and nativity (native-born or immigrant) in Canadian public health research may not be an overly important lacuna, as we failed to find conclusive evidence for an intersection of this kind for any of the five health indicators considered in this study. This conclusion is consistent with our previously published study on South Asian-White health inequalities in Canada, in which we similarly found less than compelling evidence for the health effects of intersections among racial identity, gender and immigrant status.[32]

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## RÉSUMÉ

**OBJECTIFS :** Selon la théorie de l'intersectionnalité, chaque combinaison de catégories sociales dérivées du sexe, de la race et de la nationalité, comme « homme blanc immigrant » ou « femme noire née au pays », est associée à des expériences sociales uniques. Nous avons testé la possibilité que la théorie de l'intersectionnalité explique les inégalités raciales au Canada en cherchant à déterminer si les inégalités de santé entre les Noirs et les Blancs sont conditionnées par le sexe et le statut d'immigrant de manière synergique.

**MÉTHODE :** Notre fichier comprenait 10 cycles (2001–2013) de l'Enquête sur la santé dans les collectivités canadiennes. Nous avons utilisé la régression logistique binaire pour modéliser les inégalités entre Noirs et Blancs pour ce qui est de l'hypertension artérielle, du diabète, de la santé autoévaluée, de la santé mentale autoévaluée et de l'asthme, et ce, séparément pour les femmes nées au pays, les hommes nés au pays, les femmes immigrantes et les hommes immigrants.

**RÉSULTATS :** Compte tenu des facteurs de confusion possibles, nous avons constaté que les femmes noires immigrantes avaient des probabilités sensiblement plus élevées d'hypertension artérielle, de diabète et de santé moyenne ou mauvaise autodéclarée que les femmes blanches immigrantes. Les femmes noires nées au pays et les hommes noirs immigrants avaient de plus fortes probabilités d'hypertension artérielle et de diabète que les femmes blanches nées au pays et que les hommes blancs immigrants, respectivement, et les femmes blanches nées au pays étaient plus susceptibles que les femmes noires nées au pays de dire faire de l'asthme. Il n'y avait aucun écart de santé significatif entre les hommes noirs et les hommes blancs nés au pays. Le statut socioéconomique, le tabagisme, l'activité physique et l'indice de masse corporelle étaient en cause dans certaines de ces inégalités raciales en matière de santé, mais non dans toutes. Aucune interaction triangulaire entre l'identité raciale, le sexe et le statut d'immigrant n'était significative.

**CONCLUSION :** Nous avons constaté des risques de mauvaise santé relativement élevés pour les Canadiens de race noire dans trois échantillons sur quatre. Dans l'ensemble cependant, nous avons trouvé peu de preuves à l'appui de l'hypothèse d'intersectionnalité selon laquelle les inégalités de santé entre Noirs et Blancs au Canada seraient conditionnées par le sexe et le statut d'immigrant de façon synergique.

**MOTS CLÉS :** Canada; Noirs; Blancs; intersectionnalité; inégalités raciales en matière de santé; sexe; immigration; statut socioéconomique; comportement sanitaire; indice de masse corporelle