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RÉSUMÉ

Il y a peu de recherche comparative en existence sur les expériences de la santé et les conditions de groupes minoritaires au Canada et aux États-Unis, malgré le fait que les deux pays ont des populations racialement diverses avec une proportion significative des immigrants. Cet article explore les disparités raciales et immigrantes en santé et soins d'accès entre les deux pays. L'étude portait sur l'âge mûr et la vieillesse, compte tenu du changement et de la diversité croissante dans la politique de santé et les soins de santé, tel que Medicare. L'analyse de régression logistique des données de l'Enquête de la santé Canada/États-Unis 2002–2003 montre que l'effet conjoint de la race et de la nativité de santé – différences en santé entre indigènes blancs et étrangers blancs et non-blancs est en grande partie négligeable au Canada, mais considérable aux États-Unis. Americains indigènes non-blancs et américains nés à l'étranger au sein des groupes d'âge 45-à-64 et 65-et-plus expérient une désavantage significative dans l'état de santé et aussi de l'accès aux soins, indépendamment de la couverture d'assurance-maladie et des facteurs démographiques, socio-économiques et de la mode de vie.

ABSTRACT

Little comparative research exists on health experiences and conditions of minority groups in Canada and the United States, despite both countries having a racially diverse population with a significant proportion of immigrants. This article explores race and immigrant disparities in health and health care access across the two countries. The study focus was on middle and old age given the change and increasing diversity in health and health care policy, such as Medicare. Logistic regression analysis of data from the 2002–2003 Joint Canada/United States Survey of Health shows that the joint effect of race and nativity on health outcomes – health differences between native and foreign-born Whites and non-Whites – is largely insignificant in Canada but considerable in the U.S. Non-White native and foreign-born Americans within both 45-to-64 and 65-and-over age groups experience significant disadvantage in health status and access to care, irrespective of health insurance coverage, demographic, socio-economic, and lifestyle factors.

Introduction

A number of studies have examined both race and immigrant disparities in health and health care access in the United States (Borrell, 2009; Derose, Escarce, & Lurie, 2007; Hayward, Miles, Crimmins, & Yang, 2000; Jasso, Massey, Rosenzweig, & Smith, 2004; Schnittker, Pescosolido, & Croghan, 2005; Williams & Collins, 1995) and in Canada (Chen, Ng, & Wilkins, 1996; Gee, Kobayashi, & Prus, 2004; Kobayashi, Prus, & Lin, 2008; McDonald & Kennedy, 2004; Newbold, 2005; Newbold &

Danforth, 2003; Newbold & Filice, 2006; Perez, 2002; Wu, Noh, Kaspar, & Schimmele, 2003). There is, however, limited comparative research on how the two countries differ in race- and immigrant-based health disparities (see Siddiqi & Nguyen, 2010; and Siddiqi, Zuberi, & Nguyen, 2009, for exceptions). Exploring differences is important since the two countries – although both ethnically diverse nations with significant immigrant populations – differ markedly in their health insurance coverage policy, ethnic and socio-economic characteristics of immigrant populations, and history of institutionalized racism and residential segregation, all of which likely shape the health experiences and conditions of minority groups in each country.

In this article, we used a cross-national comparative and exploratory approach to our study of racial/immigrant disparities in health and health care services, in which we compared how non-Whites and immigrants fared in terms of health and health care utilization in Canada versus the U.S. We specifically looked at the extent to which differences in the effects of race and immigrant status on health persist between the two countries after controlling for health insurance, demographic, socio-economic, and lifestyle factors. This analysis enhances our understanding of the collective importance of health insurance and these other factors in shaping racial and immigrant disparities in health.

Literature Review

Comparative health studies have found that Canadians on average are healthier than Americans (Evans & Roos, 1999; Kunitz & Pesis-Katz, 2005; Sanmartin, Ng, Blackwell, Gentleman, Martinez, & Simile, 2004; Sanmartin, Berthelot, Ng, Murphy, Blackwell, Gentleman et al., 2006; Torrey & Haub, 2004), and that Canadians are more likely to receive and utilize health care services (DeCoster, Smoller, Roos, & Thomas, 1997; Katz, Hofer, & Manning, 1996; Sanmartin et al., 2006). Studies have further revealed extensive health inequalities in the U.S., with African Americans, Hispanics, and Native Americans experiencing poorer health than other racial and ethnic groups (Crimmins, Hayward, & Seeman, 2004; Davey Smith, Neaton, Wentworth, Stamler, & Stamler, 1998; Williams, 2001; Williams & Collins, 1995). Immigrants to the U.S., who are more likely to have low income and no insurance compared to native-born Americans (Ku & Matani, 2001), also tend to experience disadvantage in health care access and use (Derose et al., 2007) and health status (Jasso et al., 2004). Disparities in health outcomes between immigrants and non-immigrants were further found within Hispanics (Wagner & Guendelman, 2000) and African American men (Lucas, Barr-Anderson, & Kington, 2003).

A different picture has been observed in Canada. By many accounts, racial and ethnic minority groups and immigrants, namely recent immigrants, tend to have better than average health, though some segments of the population such as Aboriginal populations are more likely to experience health disadvantages (Kobayashi et al., 2008; Wu et al., 2003). Minority and immigrant statuses also intersect. Chen et al. (1996) found that newer immigrants to Canada, with China, India, Pakistan, Philippines, and Korea being the leading source countries, are less likely to have chronic conditions and disabilities. Other research has found a similar "healthy immigrant" effect (Ali, 2002; Ali, McDermott, & Gravel, 2004; Dunn & Dyck, 2000; Hyman, 2001; Meadows, Thurston, & Melton, 2001; Perez, 2002). However, the "healthy immigrant" effect seems to decrease significantly with time spent in Canada (McDonald & Kennedy, 2004; Newbold & Danforth, 2003). Ng, Wilkins, Gendron, and Berthelot (2005) showed that there are significant differences in health within immigrant groups in Canada. Non-European immigrants are much more likely to experience declines in their self-assessed health with time than European immigrants.

Canada–U.S. differences in the effect of race and nativity on health outcomes likely reflect a multitude of interrelated factors, including how these countries differ in ethnic and socio-economic characteristics of immigrant populations, histories of institutionalized racism, discrimination, and segregation, and health insurance coverage. We consider each of these factors in more detail.

First, while Canada and the U.S. have traditionally attracted immigrants especially from Europe, this has changed in the past few decades. Currently, more than half of the U.S. foreign-born population is from Latin America (based on the 2000 U.S. census), while Asia is the main source of immigrants to Canada. According to the 2000 census, 11.1 per cent of the U.S. population is foreign born with 30 per cent of the foreign-born population from Mexico, 4.9 per cent from China, and 4.4 per cent from the Philippines. In contrast, 18.4 per cent of the Canadian population is foreign born (based on the 2001 census) with China and India being the main sources of immigrants to Canada. In addition, Canada has had since 1967 a regulatory system to facilitate the immigration of skilled workers to Canada. Overall, immigrants to Canada tend to have higher levels of education and job skills compared to their U.S. counterparts (Zuberi, 2006), which likely contribute to the different health experiences of immigrants observed across the two countries.

Second, the racial/ethnic composition, experiences, and histories of the minority populations differ between

Canada and the U.S. The largest racial/ethnic minority groups in the U.S. (based on the 2000 census) are (a) Hispanics or Latinos (12.5%), (b) Blacks or African Americans (12.3%), and (c) Asians (3.6%). Other groups include the American Indian, Alaska Native, Native Hawaiian, and Other Pacific Islander. In Canada, 13.4 per cent of the population identify themselves as persons who are non-Caucasian in race or non-White in colour (based on the 2001 census). The largest non-White groups are Chinese and South Asians. Other groups in Canada include Blacks, Filipino, Arabs, West Asians, Latin Americans, Southeast Asians, Koreans, and Japanese.

The effect of race on health is a contentious issue in the literature (Read & Emerson, 2005). Some researchers believed that race is just a proxy for class (Kaufman, Cooper, & McGee, 1997), while others argued that racism is an important pathway through which race affects health outcomes (Krieger, 2003). In addition to limiting education and employment opportunities and contributing to residential segregation, perceptions and experiences of racial discrimination induce stress, lead to physiological and psychological arousal, and increase the risk of poor health (Williams, Neighbors, & Jackson, 2003). Indeed, a number of studies found that the lower socio-economic status of non-White Americans serves as a key explanation for their poorer health relative to White Americans (Berkman & Kawachi, 2000; Crimmins et al., 2004; Vega & Rumaut, 1991; Williams & Collins, 1995). Compared to Canada, race and racism is more salient in the U.S. with its history of slavery and segregation forming the basis of racial identity in the U.S. (Wu et al., 2003).

Third, Canada and the U.S. have very different approaches to health care. Canada has universal health care coverage except for dental and vision care. In contrast, health insurance in the U.S. is overwhelmingly private, and government insurance is available only for persons older than 65 years or for the very poor. Moreover, over 40 million Americans are uninsured and about 20 million are underinsured or inadequately insured (Conyers, 2003). Based on recent Organisation for Economic Co-operation and Development (OECD) data (cited in Lobb, 2009), the U.S. spends more on health care (15.3% of the GDP) than Canada (9.8% of the GDP); however, the U.S. has lower life expectancy and higher infant mortality rates than Canada. Kunitz and Pesis-Katz (2005) argued that the Canadian health care system serves the interests of Canadians better than the U.S. system serves the interests of Americans. Other researchers have similarly pointed out that universal health care in Canada reduces most disparities in access to care (Ross, Wolfson, Dunn, Berthelot, Kaplan, & Lynch, 2000). Americans, most of all racial minorities, are less likely than Canadians to have a regular doctor and are more likely to have unmet health needs and to forgo needed medicines (Lasser, Himmelstein, & Woolhandler, 2006). In addition, per capita health care expenditures for native-born Americans are double that of their foreign-born counterparts (Mohanty, Wollhandler, Himmelstein, Pati, Carrasquillo, & Bor, 2005). Differences in the structure and financing of health care indicate that variables associated with purchasing power, such as income and education, are more strongly tied to health outcomes and access to health care in the United States than in Canada (Sanmartin et al., 2006).

Research Question

One question not directly addressed in this literature is the extent to which health outcomes by race and nativity differ between Canada and the U.S. This question is addressed here by comparing the joint effect of immigrant and racial status on health outcomes. We used multiple measures of health status and health care access to provide a robust comparison of the health experiences and conditions of minorities across the two countries. To see if these cross-country differences exist irrespective of health insurance, demographic, socio-economic status (SES), and lifestyle factors, these variables were controlled in our study. The study focused on the 45-to-64 and 65-and-over age groups since disease and disability become more common with age; in addition, we selected these age groups because substantial shifts in health care policy that occur in old age (e.g., U.S. Medicare) can potentially narrow health disparities in each country.

Methods
Data

Comparative health research between Canada and the U.S. has often presented difficulties due to a lack of comparable data. The Joint Canada/United States Survey of Health (JCUSH) was developed by Statistics Canada and the U.S. National Center for Health Statistics to enable researchers to make more-accurate comparisons in health between the countries. The JCUSH used a stratified multistage probability design to collect data through telephone interviews in 2002 and 2003, with response rates of 66 per cent in Canada and 50 per cent in the U.S. The JCUSH sample is representative of adults living in private residences in both countries (institutionalized persons and full-time members of the Canadian and U.S. Armed Forces were excluded).

Out of concern for the low response rate in the U.S., several researchers compared sample characteristics of American and Canadian respondents in the JCUSH to

leading national health surveys in each country: the Canadian Community Health Survey and U.S. Behavioural Risk Factor Surveillance System (Kaplan, Huguet, Feeny, & McFarland, 2010). They found that, despite the lower response, the characteristics of the U.S. and Canadian samples in the JCUSH were quite similar to those in the other national surveys. Sample weights were applied to adjust for over-sampling and to make the sample representative of the household adult population in each country. The final sample size was 8,688 individuals: 3,505 Canadians and 5,183 Americans.

Measures

The independent variable was collapsed into four groups: (a) native-born White; (b) native-born non-White; (c) foreign-born White; and (d) foreign-born non-White. Further specification of this variable was not possible since Canadians were not asked to provide information on race beyond White or non-White. Data on specific country of birth for foreign-born respondents also were not collected for respondents in both countries. We caution that, although the JCUSH sample is representative of the racial populations in each country, the aggregation of groups into White and non-White masks the very different racial composition of the two countries.

The dependent variables reflect both health status and health care access to provide a robust picture of health-related experiences and conditions within each country. Multiple measures of health status and access to care were used to help ensure that the results were not sensitive to a specific outcome. Each measure of health status used in the study was binary coded: (a) poor/fair self-reported health vs. good/very good/excellent; (b) being obese with body mass index at or exceeding 30 vs. under 30; and (c) having cognitive impairment (i.e., having at least some difficulty in remembering most things and/or in thinking clearly and solving problems) vs. no cognitive impairment. The two measures of health care access were coded in the JCUSH as follows: (a) having no regular medical doctor vs. having a regular doctor; and (b) having an unmet health care need during the past year vs. having a need and receiving care.

Three sets of control variables were considered in the analysis. The first set included demographic variables: age in years, gender, and marital status. The second set of control variables measured socio-economic status— education (less than high school, high school or college diploma, or university degree or higher) and household income. Household income was adjusted for economies of scale using the square root equivalence scale, which provides an intermediate between using household income with no adjustment and using per capita household income, then divided into five equal categories or quintiles within each country, where higher scores indicated higher relative income (a category for missing income data was also included in the analysis to maintain a fuller sample). The third set was made up of health-related behavioural variables— smoking status (current smoker, former smoker, or never smoked) and physical activity level (active, moderate, or inactive). These lifestyle controls were not included in the analysis of the health care access outcomes.

We additionally controlled for health insurance coverage for Americans aged 45 to 64. The variable was divided into three categories: (a) those with basic care coverage (hospital and physician services); (b) those with basic care coverage plus coverage for physiotherapy administered outside hospital, home care, and so on; and (c) those without any coverage at the time of the interview.

Analysis

Logistic regression was used to examine the effect of race/nativity on each of the five measures of health within each age group (45 to 64, and 65 and over) and country, controlling for a combination of health insurance, demographic, SES, and lifestyle factors. The analysis was conducted using the *svy:logit* function in STATA 9.0. This program allows users to conduct a logistic regression analysis using sample and replication weights needed to account for the complex sample design of the JCUSH. The results are reported as odds ratios, where an odds ratio value greater than one indicates that the variable is positively associated with the outcome variable.

Results

Descriptive Analysis

Table 1 shows the percentage of respondents reporting unfavorable health outcomes by race and immigrant status, stratified by age group and country. The results show that there were little racial disparities in health in Canada especially at ages 45 to 64. While non-White persons aged 65 years and over were more likely to report poor health than were their White counterparts, such disparity was not evident in the other health outcomes.

In contrast, race/immigrant disparities in health were considerable in the U.S. Non-White Americans (native born and immigrants) tended to have the worst health and the least access to care. Less than 13 per cent of native-born White Americans aged 45 to 64 reported poor health compared to 22.3 per cent and 33.4 per cent of native and foreign-born non-Whites respectively. Native-born non-Whites further had the highest rate of

Table 1: Percentages of respondents reporting poor physical health, obesity, cognitive problems, no regular doctor, and perceived unmet health care needs by race and immigrant status, age group, and country (95% CIs in brackets)

Racial/immigrant Status	Poor Health	Obese	Cognitive Impairment
Respondents Aged 45 – 64 Years			
Canada			
Native-born Whites (n = 811)	13.0 [10.5, 16.0]	18.6 [15.4, 22.1]	23.3 [20.4, 26.4]
Native-born Non-Whites (n = 66)	15.8 [8.17, 28.2]	14.2 [7.2, 25.9]	30.8 [19.3, 45.2]
Foreign-born Whites (n = 120)	12.4 [7.1, 20.5]	12.9 [7.9, 20.2]	20.1 [13.3, 29.0]
Foreign-born Non-Whites (n = 68)	10.1 [5.2, 18.6]	15.2 [8.9, 24.4]	19.7 [11.7, 31.1]
United States			
Native-born Whites (n = 1,195)	12.8 [10.7, 15.0]*	23.3 [21.0, 25.8]*	25.1 [22.2, 28.2]
Native-born Non-Whites (n = 210)	22.3 [17.2, 29.8]	44.6 [37.3, 52.0]	28.9 [22.4, 36.2]
Foreign-born Whites (n = 72)	16.1 [8.9, 27.1]	16.5 [9.6, 26.7]	28.1 [20.1, 37.7]
Foreign-born Non-Whites (n = 132)	33.4 [25.0, 42.9]	14.3 [9.0, 21.8]	29.8 [22.5, 38.2]
Respondents Aged 65 Years and Over			
Canada			
Native-born Whites (n = 502)	26.0 [22.3, 30.1]*	13.9 [11.1, 17.1]	33.2 [29.0, 37.7]
Native-born Non-Whites (n = 50)	42.4 [28.0, 58.0]	18.4 [9.9, 32.6]	33.3 [20.8, 48.6]
Foreign-born Whites (n = 136)	24.5 [17.3, 33.4]	16.2 [11.1, 22.9]	29.2 [21.8, 38.0]
Foreign-born Non-Whites (n = 46)	37.0 [23.5, 52.9]	19.8 [10.0, 35.0]	42.2 [26.4, 59.6]
United States			
Native-born Whites (n = 838)	24.8 [21.5, 28.4]*	18.2 [15.3, 21.3]*	35.2 [32.0, 38.5]*
Native-born Non-Whites (n = 141)	41.7 [33.7, 50.1]	32.6 [24.7, 41.4]	42.0 [33.9, 50.4]
Foreign-born Whites (n = 55)	23.1 [13.0, 37.5]	12.2 [5.8, 23.7]	39.0 [25.5, 54.2]
Foreign-born Non-Whites (n = 50)	55.2 [39.4, 69.9]	33.5 [20.0, 50.3]	63.3 [46.4, 77.3]

	No Regular Doctor	Unmet Health Care
Respondents Aged 45 – 64 Years		
Canada		
Native-born Whites (n = 811)	9.8 [7.8, 12.0]	10.2 [8.1, 12.8]
Native-born Non-Whites (n = 66)	8.6 [3.6, 18.9]	10.3 [4.4, 21.8]
Foreign-born Whites (n = 120)	11.8 [7.1, 18.8]	9.0 [4.4, 17.5]
Foreign-born Non-Whites (n = 68)	14.5 [7.2, 27.0]	9.7 [4.1, 21.3]
United States		
Native-born Whites (n = 1,195)	12.3 [10.2, 14.7]*	10.4 [8.6, 12.5]*
Native-born Non-Whites (n = 210)	11.7 [7.6, 17.5]	15.0 [10.6, 20.8]
Foreign-born Whites (n = 72)	14.8 [8.0, 25.8]	15.3 [7.7, 27.9]
Foreign-born Non-Whites (n = 132)	24.2 [16.4, 34.0]	16.5 [10.3, 25.1]
Respondents Aged 65 Years and Over		
Canada		
Native-born Whites (n = 502)	4.0 [2.6, 6.0]	7.6 [5.5, 10.3]
Native-born Non-Whites (n = 50)	1.0 [.08, 7.1]	9.2 [3.6, 21.2]
Foreign-born Whites (n = 136)	2.0 [.60, 6.2]	5.6 [4.1, 13.1]
Foreign-born Non-Whites (n = 46)	4.1 [.99, 15.7]	6.5 [1.9, 15.0]
United States		
Native-born Whites (n = 838)	5.3 [3.9, 7.0]*	5.0 [3.5, 7.0]*
Native-born Non-Whites (n = 141)	12.2 [7.5, 18.9]	9.6 [5.5, 16.1]
Foreign-born Whites (n = 55)	8.7 [3.2, 21.4]	5.6 [2.0, 14.6]
Foreign-born Non-Whites (n = 50)	23.6 [12.1, 40.6]	18.8 [9.8, 32.8]

Notes: **Distributions, confidence intervals, and significance tests corrected to account for the complex sample design of the 2002–2003 Joint Canada/United States Survey of Health. Association between race/immigrant status and the health outcome is statistically significant at *p < .05.**

obesity at 44.6 per cent, while foreign-born non-Whites were most likely to have problems in accessing health care with 24.2 per cent not having a regular doctor and 16.5 per cent reporting unmet health care needs.

A very similar pattern was evident among Americans aged 65 and over with non-Whites – especially foreign born – having the most unfavorable health outcomes. The percentage of foreign-born non-White Americans

reporting poor health (55.2%) was about double that of native- and foreign-born Whites (24.8% and 23.1% respectively). They also had an exceedingly high rate of cognitive impairment at 63.3 per cent. Elderly non-White Americans were also more likely to be obese, where the rate of obesity for both native- and foreign-born non-Whites was about twice that of their White counterparts.

Non-White seniors in the U.S. were also more likely to be disadvantaged in access to care. The percentage of non-White Americans aged 65 and over with no regular doctor was significantly higher than for White elderly Americans. While only 5.3 per cent of native-born Whites did not have regular doctors, the percentages

were 12.2 per cent and 23.6 per cent for native- and foreign-born non-Whites respectively. This stood in vivid contrast to Canada where just 4.1 per cent of foreign-born non-White seniors did not have a regular doctor, which was virtually identical to the rate for native-born White Canadians (4.0%).

Comparing the four racial/immigrant status groups across countries, we see that Canadian respondents tended to report better health outcomes than their American counterparts. For instance, 18.6 per cent of native-born White Canadians aged 45 to 64 were obese compared to 23.3 per cent of their American counterparts. More striking were the corresponding percentages for native-born non-Whites: 14.2 per cent in

Table 2: Adjusted odds ratios for poor self-reported health by age group and country

Variables	Canada 45 – 64 Years	U.S. 45 – 64 Years	Canada 65+ Years	U.S. 65+ Years
Race/Immigrant Status				
Native-born Whites (ref.)	1.00	1.00	1.00	1.00
Native-born Non-Whites	0.99	1.34	2.17*	1.66*
Foreign-born Whites	1.23	1.58	0.99	0.90
Foreign-born Non-Whites	0.72	2.18**	2.51*	2.66*
Age in Years	1.06**	1.04*	1.05**	1.01
Gender (ref.: men)	0.90	0.90	0.79	0.87
Marital Status				
Married (ref.)	1.00	1.00	1.00	1.00
Widowed	0.64	0.96	0.94	0.85
Separated/ Divorced	1.33	1.18	1.54	0.98
Single	2.12*	0.91	0.91	1.42
Educational Level				
< High School (ref.)	1.00	1.00	1.00	1.00
High School/College	0.77	0.58*	0.69†	0.66*
University	0.61*	0.29***	0.37*	0.35***
Income – All Sources				
Lowest Quintile (ref.)	1.00	1.00	1.00	1.00
2nd and 3rd Quintiles	0.31***	0.58*	0.90	0.53**
4th and 5th Quintiles	0.20***	0.38**	0.74	0.41**
Missing	0.25**	0.49**	0.75	0.53**
Smoking Status				
Current Smoker (ref.)	1.00	1.00	1.00	1.00
Former Smoker	0.67†	0.93	0.70	0.66†
Never Smoked	0.48*	0.58*	0.46*	0.54*
Physical Activity				
Active (ref.)	1.00	1.00	1.00	1.00
Moderate	0.90	0.97	0.86	1.03
Inactive	2.17*	2.31*	1.96*	2.62***
Health Insurance				
No Insurance (ref.)		1.00		
Basic Insurance		2.71**		
Basic-plus Insurance		0.89		
Constant	0.029	0.060	0.072	0.941
Pseudo-R^2	0.218	0.278	0.108	0.163
n	1,049	1,593	710	1,068

Notes: **Odds ratios adjusted for all other variables in the table. Odds ratios and significance tests corrected to account for the complex sample design of the 2002–2003 Joint Canada/United States Survey of Health. Statistically different from the reference category (ref.) at † $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.**

Canada vs. 44.6 per cent in the U.S. Access to the health care system was also higher in Canada than in the U.S. The contrast was most evident at ages 45 to 64 among non-Whites. Interestingly, the percentage of native-born non-Whites 65 and over with unmet health care needs was, however, nearly the same in the U.S. and Canada.

The next section looks at the associations between race/nativity and health outcomes with the effects of insurance, demographic, SES, and lifestyle variables removed.

Regression Analysis

Tables 2 to 6 present adjusted odds ratios for binary health outcomes where odds ratios greater than one indi-

cate increased likelihood of reporting worse health and health care access. Table 2 shows that foreign-born non-White Americans were more than twice as likely to report poor health compared to native-born Whites at ages 45 to 64 (odds ratio = 2.18, $p < .01$) and ages 65 and over (odds ratio = 2.66, $p < .05$). In Canada, elderly non-Whites, native and foreign born alike, were significantly more likely to report unfavourable health compared to Canada-born Whites, even though these data have been adjusted for socio-demographic, SES, and lifestyle factors.

Table 3 shows the adjusted odds ratios for obesity. There is very little effect of race/nativity on obesity in Canada. This is in contrast to the U.S. where native-born non-Whites were 2.54 and 1.75 times more likely

Table 3: Adjusted odds ratios for obesity by age group and country

Variables	Canada	U.S.	Canada	U.S.
	45 – 64 Years	45 – 64 Years	65+ Years	65+ Years
Race/Immigrant Status				
Native-born Whites (ref.)	1.00	1.00	1.00	1.00
Native-born Non-Whites	0.72	2.54***	1.20	1.75*
Foreign-born Whites	0.65†	0.66	1.29	0.60
Foreign-born Non-Whites	0.89	0.38***	1.13	1.76†
Age in Years	1.01	0.98*	0.89***	0.95***
Gender (ref.: men)	0.64*	0.81	0.82	1.05
Marital Status				
Married (ref.)	1.00	1.00	1.00	1.00
Widowed	0.84	2.22**	1.39	1.10
Separated/Divorced	0.77	1.11	0.99	3.05***
Single	0.97	1.18	0.84	1.27
Educational Level				
< High School (ref.)	1.00	1.00	1.00	1.00
High School/College	0.82	0.44**	0.69	0.87
University	0.74	0.31***	0.73	0.54*
Income – All Sources				
Lowest Quintile (ref.)	1.00	1.00	1.00	1.00
2nd and 3rd Quintiles	0.81	0.99	1.31	0.87
4th and 5th Quintiles	0.83	1.16	0.87	0.51†
Missing	0.73	0.80†	1.69†	0.78
Smoking Status				
Current Smoker (ref.)	1.00	1.00	1.00	1.00
Former Smoker	1.37†	2.06***	2.14†	3.38**
Never Smoked	0.93	1.69*	1.73	3.19**
Physical Activity				
Active (ref.)	1.00	1.00	1.00	1.00
Moderate	1.23	2.50**	0.87	1.23
Inactive	1.36†	4.07***	2.51**	1.98*
Health Insurance				
No Insurance (ref.)		1.00		
Basic Insurance		1.97*		
Basic-plus Insurance		1.81*		
Constant	0.107	0.310	250.1	2.54
Pseudo-R^2	0.027	0.125	0.143	0.130
n	1,028	1,554	690	1,030

Notes: **Odds ratios adjusted for all other variables in the table. Odds ratios and significance tests corrected to account for the complex sample design of the 2002–2003 Joint Canada/United States Survey of Health. Statistically different from the reference category (ref.) at † $p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$.**

Table 4: Adjusted odds ratios for cognitive impairment by age group and country

Variables	Canada	U.S.	Canada	U.S.
	45 – 64 Years	45 – 64 Years	65+ Years	65+ Years
Race/Immigrant Status				
Native-born Whites (ref.)	1.00	1.00	1.00	1.00
Native-born Non-Whites	1.52	1.01	1.00	1.07
Foreign-born Whites	1.01	1.27	0.87	1.34
Foreign-born Non-Whites	1.00	1.08	2.12†	2.26*
Age in Years	0.98	1.03*	1.07***	1.04**
Gender (ref.: men)	1.07	1.18	1.02	0.88
Marital Status				
Married (ref.)	1.00	1.00	1.00	1.00
Widowed	1.18	0.91	0.68†	1.08
Separated/Divorced	1.53*	1.01	0.90	1.35
Single	1.50†	1.35†	0.48*	0.97
Educational Level				
< High School (ref.)	1.00	1.00	1.00	1.00
High School/College	0.65*	1.10	0.72†	0.66*
University	0.49**	0.64†	0.82	0.42***
Income – All Sources				
Lowest Quintile (ref.)	1.00	1.00	1.00	1.00
2nd and 3rd Quintiles	0.85	0.99	1.49†	0.67*
4th and 5th Quintiles	0.72†	0.70†	0.94	0.61*
Missing	0.48*	0.82	0.99	0.64*
Smoking Status				
Current Smoker (ref.)	1.00	1.00	1.00	1.00
Former Smoker	1.58*	0.82	0.99	1.77†
Never Smoked	0.85	0.70*	0.78	1.69†
Physical Activity				
Active (ref.)	1.00	1.00	1.00	1.00
Moderate	1.36	1.06	0.71	1.20
Inactive	2.07**	1.63**	1.06	1.70*
Health Insurance				
No Insurance (ref.)		1.00		
Basic Insurance		0.89		
Basic-plus Insurance		0.80		
Constant	0.672	0.218	0.004	0.018
Pseudo-R^2	0.078	0.076	0.079	0.029
n	1,051	1,594	708	1,060

Notes: **Odds ratios adjusted for all other variables in the table. Odds ratios and significance tests corrected to account for the complex sample design of the 2002–2003 Joint Canada/United States Survey of Health. Statistically different from the reference category (ref.) at † $p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$.**

to be obese than their White counterparts at ages 45 to 64, and 65 and over respectively. Interestingly, the odds of being obese were 62 per cent (1.0 to 0.38) lower for foreign-born non-White Americans compared to native-born Whites in middle age.

Disparities in cognitive health in Canada and the U.S. were less extensive than those of self-rated health and obesity. Table 4 reveals that elderly Canadian and American foreign-born non-Whites had an increased likelihood of having cognitive problems relative to native-born Whites. Race/nativity, however, was not strongly associated with cognitive impairment at ages 45 to 64 in either country.

Tables 5 and 6 examine access to health care services. These results revealed that differences in access to care by race/nativity were most notable among the U.S. aged. At ages 65 and over, foreign-born non-White Americans were four times more likely not to have a regular doctor and almost three times as likely to report unmet health care needs compared to U.S.-born White seniors. U.S.-born non-Whites also had higher odds of not having a regular doctor in old age compared to their White counterparts (odds ratio = 1.66, $p < .10$), yet the odds for Canada-born non-Whites were just a fraction of the odds for native-born Whites (odds ratio = 0.17, $p < .01$).

Table 5: Adjusted odds ratios for not having a regular doctor by age group and country

Variables	Canada	U.S.	Canada	U.S.
	45 – 64 Years	45 – 64 Years	65+ Years	65+ Years
Race/Immigrant Status				
Native-born Whites (ref.)	1.00	1.00	1.00	1.00
Native-born Non-Whites	0.80	0.68	0.17**	1.66†
Foreign-born Whites	1.41	1.08	0.52	1.85
Foreign-born Non-Whites	1.54	1.25	0.76	4.03**
Age in Years	0.94**	0.94***	0.98	1.00
Gender (ref.: men)	0.37***	0.67*	0.60	0.40**
Marital Status				
Married (ref.)	1.00	1.00	1.00	1.00
Widowed	3.51*	1.41	2.80†	2.32**
Separated/Divorced	2.23**	1.34	5.38*	3.36**
Single	2.07*	1.56†	6.10*	8.67***
Educational Level				
< High School (ref.)	1.00	1.00	1.00	1.00
High School/College	1.00	0.68	0.89	0.70
University	0.96	0.62†	1.40	0.51†
Income – All Sources				
Lowest Quintile (ref.)	1.00	1.00	1.00	1.00
2nd and 3rd Quintiles	1.01	0.77	0.35†	0.79
4th and 5th Quintiles	0.66	0.70	0.30†	0.78
Missing	1.42	0.88	0.59	0.64
Health Insurance				
No Insurance (ref.)		1.00		
Basic Insurance		0.25***		
Basic-plus Insurance		0.18***		
Constant	3.39	14.65	0.063	0.384
Pseudo-R^2	0.074	0.147	0.077	0.101
n	1,052	1,596	710	1,068

Notes: **Odds ratios adjusted for all other variables in the table. Odds ratios and significance tests corrected to account for the complex sample design of the 2002–2003 Joint Canada/United States Survey of Health. Statistically different from the reference category (ref.) at † $p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$.**

Conclusion

We have examined differences in racial and immigrant health disparities between Canada and the United States. In Canada, disadvantages are limited to self-rated health at ages 65 and over. Self-reported health, however, is predictive of physical measures of health such as disability, chronic conditions, and mortality (Idler & Benyamini, 1997; Idler, Russell, & Davis, 2000; Mansson & Rastam, 2001; Mossey & Shapiro, 1982). Further research on the health effect of race/nativity in old age in Canada should consider both subjective and objective measures of health. In the U.S., on the other hand, the findings show that native- and foreign-born racial minorities are generally disadvantaged in health outcomes across middle and later life, regardless of socio-demographic and socio-economic status, lifestyle, and health insurance.

There are likely many reasons beyond demographic, SES, and insurance coverage for the existence of racial and immigrant-based health inequalities in the U.S. that are difficult or impossible to take into account in survey research, such as human-biological and cultural differences. Probably the most important and widely accepted explanation is that health inequalities are a reflection of much deeper and systematic racial inequalities in the U.S. compared to Canada (Clarke, 2000; Siddiqi & Nguyen, 2010). Minorities in the U.S., namely African and Hispanic Americans, are more likely than their Canadian counterparts to face discrimination, marginalization, poverty, and joblessness, which foster inequities in access to health care and health status. Canada, on the other hand, has a more racially mixed population with a large well-educated and skilled population of immigrants (Zuberi, 2006).

We must be careful in concluding that the results of the current study are caused by deep-seated racism in the United States. On the other hand, it is well documented that discrimination leads to bias in how racial minorities are treated in all aspects of their lives, including employment, occupation, educational,

Table 6: Adjusted odds ratios for perceived unmet health care by age group and country

Variables	Canada	U.S.	Canada	U.S.
	45 – 64 Years	45 – 64 Years	65+ Years	65+ Years
Race/Immigrant Status				
Native-born Whites (ref.)	1.00	1.00	1.00	1.00
Native-born Non-Whites	0.86	1.02	1.13	1.58
Foreign-born Whites	1.03	1.43	0.79	1.23
Foreign-born Non-Whites	0.82	0.89	0.74	2.89*
Age in Years	0.99	0.98†	0.95*	1.00
Gender (ref.: men)	1.19	1.13	0.80	1.07
Marital Status				
Married (ref.)	1.00	1.00	1.00	1.00
Widowed	1.70	1.85†	3.07**	1.02
Separated/Divorced	1.31	1.49†	1.16	0.97
Single	1.94†	1.19	0.43†	2.33
Educational Level				
< High School (ref.)	1.00	1.00	1.00	1.00
High School/College	2.09*	0.68	2.16*	0.59†
University	1.97†	0.59†	0.42†	0.75
Income – All Sources				
Lowest Quintile (ref.)	1.00	1.00	1.00	1.00
2nd and 3rd Quintiles	0.30**	0.53*	0.46†	0.38*
4th and 5th Quintiles	0.28**	0.54*	1.22	0.15**
Missing	0.47†	0.66†	0.52	0.37**
Health Insurance				
No Insurance (ref.)		1.00		
Basic Insurance		0.42*		
Basic-plus Insurance		0.33***		
Constant	0.47	2.72	4.267	0.792
Pseudo-R^2	0.063	0.109	0.101	0.114
n	1,052	1,592	710	1,065

Notes: **Odds ratios adjusted for all other variables in the table. Odds ratios and significance tests corrected to account for the complex sample design of the 2002–2003 Joint Canada/United States Survey of Health. Statistically different from the reference category (ref.) at † $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.**

recreation, family choices and chances, and most importantly socio-economic status. In terms of its effect on health, we need to assume, until we have adequate measures of racial discrimination, that disparate social and economic conditions of both immigrant and racial minorities and native-born White Americans will produce significant differences in their respective physiological profile and health status (Crimmins et al., 2004; Derose et al., 2007; Williams, 2001).

To help substantiate this argument, future research should examine the connection between poor health and racial discrimination in both countries. Measures of racial discrimination therefore need to be included in the next Canada–U.S. health survey. Just as important, these measures must reflect the different types of racial discrimination, namely lifetime-perceived racial discrimination and day-to-day perceived discrimination (Cockerham, 2011). Both types of discrimination can generate short-term and long-term adverse effects

on the physical and mental well-being of immigrants and racial minorities.

One of the strategies to measure these types of racial discrimination, as proposed by Krieger (2000), is to accurately measure socio-economic positions of racial minorities by taking into account individual, household, neighborhood, and regional socio-economic well-being, along with household-related information such as perception of household income adequacy, debt, mortgages, homeownership, employment, and occupation. Failing to have accurate measures of socio-economic position could produce biased results and considerable residual confounding (Krieger, 2000; Jatrana & Chan, 2007). This is because the most detrimental effect of racial discrimination lies in its restricting economic resources of racial minorities, coupled with evidence of the profound impact of economic well-being on health.

The next Canada–U.S. survey of health should further develop comprehensive measures of race and nativity.

We used a limited race measure with only two categories. The JCUSH is a rich source of data, but is also limited to basic questions of race. If researchers are to understand further the underlying basis of differences in racial health between Canada and the United States, a measure of race with many more categories must be considered. Likewise, it was not possible to explore nativity in detail in this study. Questions on country of birth, years since immigration, reasons for immigration (economic, family reunion, etc.), mother tongue, and ethnicity were not asked in the JCUSH. These are limitations that will have to be overcome before race and immigrant-based health inequalities can be thoroughly examined in a comparative context. Our results from the JCUSH, despite its limitations on variables, make the case for additional, more-developed comparative research on race, immigration status, and health.

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