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Comparing the risk of work-related injuries between immigrant and Canadian-born labour market participants.

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Abstract (252 words)

Objectives: To examine the burden of work-related injuries among immigrants to Canada compared to Canadian-born labour force participants.

Methods: Using data from the 2003 and 2005 Canadian Community Health Surveys (N = 99,115), two nationally representative population samples, we examined the risk of self-reported, activity limiting work-related injuries among immigrants with varying time periods since arrival in Canada. Models were adjusted for hours of work in the last 12 months as well as various demographic and work-related variables.

Results: Immigrant men in their first five years in Canada reported lower rates of activity limiting injuries compared to Canadian-born respondents. Surprisingly, the percent of injuries that required medical attention was much higher among recent immigrants compared to Canadian-born respondents, resulting in an increased risk of activity limiting injuries requiring medical attention among immigrant men, compared to Canadian-born labour force participants. No excess risk was found among female immigrants compared to Canadian-born female labour market participants.

Conclusions: Immigrant men in their first five years in Canada are at increased risk of work-related injuries that require medical attention. A similar risk is not present among immigrant women. Further, given differences in the number of activity limiting injuries requiring medical attention across immigrant groups, we believe this excess risk among immigrant men may be underestimated in the current data source. Future research should attempt to fully capture the barriers faced by immigrants in obtaining safe employment, the number of injuries that are sustained by immigrants while working, and the consequences of these injuries.

MESH headings: Emigrants and Immigrants; Occupational Safety; Canada; Injuries

Immigrants are fundamental to Canadian society. Since 1990, on average more than 225,000 immigrants arrive in Canada every year [1]. Immigrants are also a central part of Canada's future, with a recent United Nations report ranking Canada 3rd on projected net immigration numbers between 2005 and 2050, behind the United States and Germany, which both have larger population bases [2].

Immigrants are also vitally important to the Canadian labour market. The number of immigrants specifically coming to Canada for the purpose of work (skilled worker immigrants) increased by over 80% between 1991 and 2005; from 86,496 people in 1991 to 156,310 people in 2005. Skilled workers now comprise over half of all new permanent residents to Canada [1]. In addition, Human Resources and Development Canada forecasts that immigration will account for all net labour force growth by 2011 [3]. Although the proportion of immigrants entering the Canadian labour force continues to grow, there still remain important unanswered questions concerning the labour market experiences of immigrants after arrival (outside of labour market earnings); and the consequences of these labour market experiences on immigrants' short and long term health status. Risk of work-related injury is one such area.

There are a number of factors that may place immigrants at higher risk of work-related injury. Previous research on the labour market conditions of immigrants has documented that immigrants receive less training than Canadian-born workers [4], although another study documented no differences between immigrants and Canadian-born employees in relation to occupational health and safety training during the first year of a new job in particular [5]. Immigrants and workers who are visible minorities are also less likely to be unionized [6, 7]. Immigrants, due to the non-recognition of their non-Canadian qualifications and education, may also be forced into jobs for which they are overqualified, which in turn may expose them to particular workplace hazards, increasing their risk of work-related injury [8-12]. Finally, recent immigrants place a large importance on having any job, in part due to the financial strain associated with resettlement [11, 13]. This need to keep employed may make immigrants less likely to express concerns about unsafe work or the need for training, which may increase their risk of injury. These barriers may also be exacerbated by many immigrants in recent cohorts not having strong language proficiency in English or French [14].

Although immigrants are central to the Canadian labour market, and may be differentially exposed to particular workplace hazards, relatively little research has examined if they have an increased risk of occupational injury compared to Canadian-born workers. Workers' compensation boards in Canada do not routinely collect any information on immigration status in work injury reports, other than if the respondent required an interpreter, and Statistics Canada has only recently started collecting information on immigration status in the Labour Force Survey [15]. We are aware of one Canadian study that has specifically examined occupational injuries only among immigrants [16], while two others have examined risk of injury, comparing visible minorities, who are for the most part immigrants to Canada, to non-visible minorities [17, 18]. The first study, using a non-probability sample of immigrants, documented that immigrants suffered injuries similar to young labour force participants (e.g. burns, cuts, scrapes) [16].

However, the two population-based studies have both reported a lower risk of injury for visible minorities compared to white Canadians [17, 18]. Although, visible minority status is a crude measure of immigration status, as it does not differentiate between length of time in Canada or language proficiency, both of which may increase the probability of work injuries among immigrant groups.

A recent systematic review of immigrant occupational health and safety experiences commented that the majority of studies in this area have utilized US population samples. These studies have documented that Hispanic workers may have an increased risk of occupational fatalities and injuries (both in number and length of time off work) compared to the US-born population [19, 20]. However, these findings have been somewhat mixed, with other studies reporting no excess risk between groups [21]. In addition, evidence from US based studies cannot be extended into the Canadian context given the immigrant populations in each country differ in both the regions of the world where they come from (the majority of US immigrants are from South America and the majority of Canadian immigrants are from Asia), and the educational levels they possess, with Canadian immigrants having higher levels of education [14].

The objectives of this paper are to compare differences in self-reported, work-related injuries between immigrants to Canada and Canadian-born labour market participants.

Methods

This study used secondary data from the 2003 and 2005 Canadian Community Health Surveys (CCHS). Using a multi-staged, stratified sample frame the CCHS targets individuals aged 12 and over, who are living in private dwellings within Canada, with questions on labour market conditions asked for respondents aged 15 and over. People living on Indian reserves or Crown lands, residents of institutions, full-time members of the Canadian Armed Forces, and residents of certain remote regions were excluded from the sampling frame. The household response rate to the 2003 CCHS was 87%, with the selected person response rate being 93% [22]. For the 2005 CCHS, the household response rate was 85%, with the selected person response rate being 94% [23].

For the purpose of this paper we restricted both samples to those respondents who were working in the previous 12 months and were asked questions on their working conditions (N = 79,213 respondents to the 2003 cycle; N = 19,902 respondents to the 2005 cycle).

To remove barriers in conducting interviews, Statistics Canada recruited interviewers who had a wide range of language competencies. When necessary, cases were transferred to an interviewer with the language competency needed to complete an interview. Respondents from our sample in both the 2003 and 2005 CCHS's were interviewed in 23 different languages. In addition, survey questions were also translated into Chinese, Punjabi and Inuktitut [22, 23].

Main Dependent Variable

Work-related injury: Respondents were asked if they had been injured in the past 12 months seriously enough to limit their normal activities. Respondents who reported an activity limiting injury were further asked what they were doing when injured, with one option being "working at a job or business". Respondents were also asked if they received medical attention for their injury within 48 hours.

Main Independent Variable

Immigrant status and length of time in Canada: Respondents were asked if they were born in Canada or were a citizen of Canada at birth. Those who responded no to both questions were then asked the year they first came to Canada to live. From these questions we derived a five-level variable: those respondents born in Canada; those living in Canada for 21 years or more; those living in Canada for 11 to 20 years; those living in Canada for six to 10 years; and those who have lived in Canada for five years or less.

Other variables

Other variables included in our models as confounders or mediators between immigrant status and work injuries included: hours of work in the last 12 months; if the respondent identified themselves as a visible minority; the language which they were interviewed in (English, French or Other); age; gender; highest level of education (categorical); occupational physical demands (manual, mixed or non-manual: see [24] for more details on this classification); self-employment (yes/no); and the province in which they currently live (the Atlantic, mid-western and northern provinces and territories were collapsed due to sample size constraints).

Approval for the secondary data analyses was obtained through the University of Toronto, Health Sciences I Ethics committee.

Analysis

The combined sample of respondents who had worked in the previous 12 months from both surveys totalled 99,115 respondents. Of this sample 105 respondents (0.1%) were missing information on immigration status and 616 (0.6%) were missing information on either work hours or injury status in the previous 12 months, leaving a sample of 98,394. Respondents with missing information were more likely to be female, older, have lower levels of education, or be living in British Columbia. Of this sample an additional 1,212 respondents (1.2%) were missing information on education, 713 respondents (0.7%) were missing information on occupation, and 135 were missing information on visible minority status. Respondents who were recent immigrants, male, or from Quebec and the mid-western provinces (compared to Ontario) were more likely to be missing responses for occupation. Respondents who were male, in older age groups, or from Quebec and Alberta were more likely to be missing responses for education. Given that missing occupation was associated with our main independent variable we decided to code missing occupation as a separate occupational category. This left a final sample of 97,067 respondents.

A preliminary descriptive analysis examined the percentage of the main outcome and other variables across our main independent variable. A series of nested logistic models

then examined the probability of having a work injury that limited normal activities in the previous 12 months across our main independent variables (length of time since arrival in Canada). An initial regression examined the probability of injury in a crude model. A subsequent model then adjusted for hours of work, age, gender, visible minority status and language of interview; with further models adjusting for survey interview year and province of residence; and then occupation and self-employment. All variables were entered into our model as predictors, with the exception of working hours, which we included in each logistic analysis as an offset [25]. Because work tasks and work injuries differ between men and women, even within similar occupations [26, 27], we stratified our logistic analyses by gender. To account for the complex sample design of the CCHS, in line with guidelines from Statistics Canada, the confidence intervals around each point estimate have been adjusted using a bootstrap technique [28]. In addition, all analyses were weighted to account for the probability of selection into the original sample and non-response.

Results

Table one presents the distribution of each of the study variables across categories of length of time in Canada. More recent immigrants to Canada were more likely to be younger, have higher levels of education, and work fewer hours in the previous 12 months. Movement into self-employment increased with increasing length of time in Canada among immigrants. Immigrant cohort effects were seen across visible minority status and interview language, with more recent cohorts of immigrants more likely to be a member of a visible minority and be interviewed in a language other than English or French. Over half of each of the immigrant categories was currently living in Ontario.

[Insert table one about here]

Figure one presents the unadjusted rates of injuries per 1,000 persons for both all injuries and the number of injuries that required medical attention. As demonstrated in the graph the proportion of injuries that required medical attention among the most recent immigrants was substantially higher than among the Canadian-born participants (90% versus 65%).

[Insert figure one about here]

Table two presents the odds of both all work injuries and work injuries that required medical attention across a series of nested logistic regression analyses separately for both men and women. Adjustment for work hours, age, interview language, visible minority status and education (Model two) increased the odds of both types of work injury among recent immigrant men. Given the high percentage of work injuries that required medical attention among immigrants the relationship between length of time in Canada and work injuries that required medical attention were stronger than those for all work injuries, with recent immigrant men having twice the risk of work injuries requiring medical attention (compared to Canadian-born workers) in each adjusted model. However, a graded association between length of time and risk of any injury was not present, with the

risk of injury among immigrant men who had been in Canada for six to 10 years being lower than Canadian-born workers.

Similar relationships were not present among immigrant women who were, in general, less likely to have been injured at work in the previous 12 months. The exception was immigrant women who had been in Canada for six to 10 years, who had a slightly elevated risk of work injuries that required medical attention. Immigrant women in their first five years in Canada appeared to be at reduced risk of work injuries, however the small number of events in this sample made interpretation of points estimates problematic given the large confidence intervals.

[Insert table two about here]

Table three presents the odds ratios and confidence intervals for all variables in our fully adjusted logistic models for both all work injuries and injuries requiring medical attention, stratified by gender. Among men, aside from length of time in Canada increased probability of injury was associated with younger age, being interviewed in French, lower education, residing in the province of British Columbia, and being employed in more physically demanding occupations. Similar factors were associated with increased risk of work injury among our female sample with the exception of interview language, and younger age.

[Insert table three about here]

Discussion

The objectives of this paper were to examine differences in self-reported, work-related injuries between immigrants to Canada, and Canadian-born labour market participants. We found differences in the probability of work-related injury among male labour force participants depending upon whether we restricted our injuries to those that were activity limiting, or those that were limiting and required medical attention. While the probability of injury among male immigrants who had been in Canada for five years or less was heightened compared to Canadian-born men, this risk was reversed among male immigrants who had been in Canada between six and 10 years. These differences were more apparent in our models examining risk of injuries that required medical attention, in particular after adjusting for the higher education levels and fewer hours of work in the previous 12 months among recent immigrants. In addition, a surprisingly high percentage of recent immigrants received medical attention for injuries occurring at work, compared to Canadian-born labour market participants. In general we did not find similar differences in the probability of injury and length of time in Canada among female labour force participants.

The results of this study, however, should be interpreted given the following limitations. Although the CCHS is designed to examine health determinants and health status across Canada, it was not specifically designed to examine these factors among the immigrant population. As such, the sample of immigrants in their first five years in Canada was a

relatively small segment of the total sample (N = 2,859; 3% of study sample); as was those in six to 10 years (N = 3,013; 3% of study sample). This limited our ability to examine specific differences among immigrant groups that may be important, such as where different groups of immigrants have migrated from. All information collected, including that on the occurrence of work injury and the activity when injured, is self-reported and therefore there is a possibility of misclassification in our main outcomes. However, our study also has a number of strengths. These included a large representative data source; the multiple languages used in the interview process; injury information that is provided by self-report, rather than administrative data that may exclude respondents working in informal settings; our ability to examine the probability of work-related injuries while adjusting for hours worked and a variety of other labour market and demographic variables; and our sample was large enough to examine immigrants with different lengths of time in Canada separately. In addition, despite the importance of immigrant to the Canadian labour market, this is the first paper that we are aware of that has specifically examined the risk of injury among immigrants to Canada, separated by different length of time since arrival, compared to Canadian-born workers.

One particularly surprising result of our analyses was the amount of medical attention received for injuries sustained at work by recent immigrants, which was much larger than the Canadian-born (90% of all injuries among recent immigrants compared to 65% of all injuries among the Canadian-born – see figure two). This finding is remarkable given that recent immigrants are generally less likely to utilize health services due to distrust of North American allopathic medicine and a poor fit between immigrant health care needs and services [29, 30]. We offer three suggestions for this finding. The current wording of the injury question in the CCHS only includes those injuries that *"limited normal activities"*. This inclusion may selectively bias positive responses by immigrants who have recently arrived in Canada, as they may be more likely to keep working although injured, given the precarious nature of their employment and financial strain associated with moving to a new country. This is supported by previous research demonstrating the importance of employment earnings on total household income among recent immigrants and the importance in finding and maintaining adequate employment in general [11, 31]. If immigrants are less likely to respond that their injuries did limit their normal activities (such as work), this would bias our results to the null as work injuries that should limit activities but did not (including injuries that received or did not receive medical attention) would not be captured in this survey. This finding may also suggest that immigrants sustain more severe work injuries, possibly due to working in more hazardous environments therefore increasing the likelihood of receiving medical attention. Finally, the meaning of 'limiting normal activities' may differ across respondents from different countries. Previous research across countries has identified large variation in the subjective assessments of being disabled [32]. Our findings may also reflect similar differences across country of birth in the subjective assessment of what it means to be limited across normal activities. Unfortunately, we do not have the information to pursue these hypotheses further. However, we note that in each of the scenarios listed above the result would be to underestimate the true burden of excess work-related injuries among recent male immigrants to Canada. We suggest that research and surveillance in Canada

should attempt to better estimate the true risk of injuries at work that require medical attention (whether it was received or not) or time off among immigrants.

We did not find similar risk of injuries among immigrant women and immigrant men. We suggest three possible reasons for these differences. Previous research has documented that recent immigrant women may face additional barriers finding employment in Canada, compared to recent immigrant men [15, 33]. This may result in less exposure to work hazards in the first five years, thus reducing the frequency of work injury. The partially increased risk of work injuries requiring medical attention among immigrant women who have been in Canada for six to 10 years, who may have more access to work opportunities, may offer partial support for this hypothesis. The CCHS also specifically attempts to capture injuries that are not due to repetitive movements, which may be more common among women in general, and among recent immigrant women in particular. Finally, recent immigrant women may actually have a lower risk of work injury. Similar to the other results presented here, further research and greater surveillance is required to better understand the true risk of work injuries among immigrant women.

Conclusion

Immigration is likely to continue to be an important issue in Canada. Previous research has documented that immigrants to Canada face a number of challenges accessing adequate employment after their arrival. The results of this study suggest that male immigrants are at higher risk of work-related injuries that require medical attention after their arrival. Future research in Canada should attempt to fully capture the barriers faced by immigrants in obtaining safe employment, the number of injuries that are sustained by immigrants while working, and the consequences of these injuries.

Main Messages

- Despite their central part in the Canadian labour market, little is known about the work-related injury experiences of Canadian immigrants
- Immigrant men in their first five years in Canada appear to be at twice the risk of work-related injuries that limit activities and require medical attention compared to Canadian-born labour market participants
- The true risk of work-related injuries among immigrant men may be higher given the differences in activity limiting injuries that required medical attention across groups.

Policy Implications

- More comprehensive surveillance is required in Canada to better estimate the work-injury burden among recent immigrants
- Future work should assess if the consequences of work injuries differ for immigrants compared to the Canadian-born

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Table One: Weighted* percentages of study variables across length of time in Canada (N = 97,067)

	Length of time in Canada				
	0 to 5 yrs	**6 to 10 yrs**	**11 to 20 yrs**	**21+ yrs**	**Canadian born**
N	2,859	3,013	4,972	8,401	77,823
Work Injury					
Yes	2.69%	1.94%	2.56%	2.94%	3.84%
Work Injury req med att'n					
Yes	2.41%	1.35%	1.63%	1.90%	2.51%
Years of age					
Average	33.8	35.8	37.4	48.8	37.7
Interview lanaguage					
English	78.2%	78.4%	82.0%	89.5%	75.4%
French	9.2%	9.0%	9.0%	7.9%	24.5%
Other	12.6%	12.6%	9.0%	2.7%	0.1%
Gender					
Female	44.1%	45.7%	47.2%	45.7%	47.2%
Education					
Less than secondary	10.7%	13.6%	11.8%	11.7%	15.3%
Secondary	17.6%	27.2%	29.3%	23.0%	28.9%
Post-sec dip/cert	21.0%	26.5%	33.2%	36.5%	36.0%
Bachelors plus	50.7%	32.8%	25.7%	28.8%	19.8%
Visible Minority					
Yes	74.9%	71.8%	69.8%	36.2%	5.3%
Occupation					
Manual	35.5%	37.2%	36.2%	28.0%	31.3%
Mixed	20.0%	19.9%	19.4%	18.4%	23.0%
Non-Manual	43.0%	40.7%	44.0%	52.6%	45.0%
Missing	1.5%	2.3%	0.4%	1.0%	0.8%
Self-Employed					
Yes	10.8%	15.2%	15.8%	22.6%	15.5%
Work hours last 12 months					
Average	1,605	1,697	1,827	1,937	1,767
Survey year					
2005	24.8%	22.6%	23.0%	20.2%	21.0%
Geographic Area					
Atlantic Provinces	0.9%	0.9%	0.8%	2.2%	9.8%
Quebec	12.4%	12.2%	11.8%	11.0%	24.8%
Ontario	56.9%	54.8%	58.5%	54.8%	33.0%
Mid-Western Provinces	2.9%	2.9%	3.0%	3.8%	7.8%
Alberta	10.0%	9.1%	9.1%	10.3%	11.7%
British Columbia	16.6%	20.0%	16.5%	17.8%	12.2%
Northern Provinces and Territories	0.3%	0.2%	0.2%	0.2%	0.6%

* Percent estimates have been weighted for survey selection and non-response.

Table Two: Examining the odds of any work injury, and work injuries that required medical attention by length of time in Canada. Stratified by gender

	Crude Model		Model Two*		Model Three**		Model Four***	
Length of time in Canada	**OR**	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**
Men - Any Work Injury								
Canadian-born	*ref*		*ref*		*ref*		*ref*	
21+ years	0.69	(0.52 -- 0.92)	1.02	(0.77 -- 1.35)	1.04	(0.79 -- 1.38)	1.12	(0.84 -- 1.48)
11 to 20 yrs	0.61	(0.40 -- 0.92)	0.88	(0.57 -- 1.36)	0.91	(0.59 -- 1.42)	0.89	(0.57 -- 1.37)
6 to 10 yrs	0.38	(0.17 -- 0.86)	0.64	(0.28 -- 1.44)	0.65	(0.29 -- 1.47)	0.63	(0.28 -- 1.43)
0 to 5 yrs	0.78	(0.41 -- 1.49)	1.57	(0.83 -- 2.96)	1.62	(0.85 -- 3.05)	1.47	(0.77 -- 2.81)
Men - Work Injuries requiring medical attention								
Canadian-born	*ref*		*ref*		*ref*		*ref*	
21+ years	0.66	(0.46 -- 0.94)	0.93	(0.65 -- 1.32)	0.93	(0.66 -- 1.33)	1.01	(0.70 -- 1.44)
11 to 20 yrs	0.66	(0.39 -- 1.09)	0.86	(0.50 -- 1.46)	0.88	(0.51 -- 1.51)	0.85	(0.50 -- 1.46)
6 to 10 yrs	0.31	(0.15 -- 0.67)	0.48	(0.22 -- 1.07)	0.49	(0.22 -- 1.09)	0.47	(0.21 -- 1.03)
0 to 5 yrs	1.14	(0.56 -- 2.31)	2.08	(1.02 -- 4.25)	2.13	(1.05 -- 4.34)	1.93	(0.93 -- 4.02)
Women - Any Work Injury								
Canadian-born	*ref*		*ref*		*ref*		*ref*	
21+ years	0.90	(0.61 -- 1.35)	0.92	(0.61 -- 1.41)	0.95	(0.62 -- 1.45)	0.88	(0.57 -- 1.35)
11 to 20 yrs	0.78	(0.45 -- 1.36)	0.83	(0.45 -- 1.54)	0.88	(0.47 -- 1.66)	0.81	(0.43 -- 1.54)
6 to 10 yrs	0.82	(0.32 -- 2.06)	0.94	(0.37 -- 2.40)	0.97	(0.38 -- 2.46)	0.85	(0.33 -- 2.18)
0 to 5 yrs	0.33	(0.09 -- 1.24)	0.44	(0.11 -- 1.68)	0.46	(0.12 -- 1.75)	0.39	(0.10 -- 1.49)
Women - Work Injuries requiring medical attention								
Canadian-born	*ref*		*ref*		*ref*		*ref*	
21+ years	1.00	(0.61 -- 1.62)	0.90	(0.54 -- 1.51)	0.93	(0.56 -- 1.55)	0.86	(0.51 -- 1.44)
11 to 20 yrs	0.60	(0.26 -- 1.40)	0.58	(0.26 -- 1.32)	0.61	(0.27 -- 1.41)	0.56	(0.24 -- 1.29)
6 to 10 yrs	1.15	(0.42 -- 3.14)	1.20	(0.44 -- 3.33)	1.24	(0.45 -- 3.42)	1.06	(0.38 -- 2.94)
0 to 5 yrs	0.30	(0.00 -- 20.24)	0.37	(0.01 -- 18.89)	0.38	(0.01 -- 19.41)	0.32	(0.01 -- 15.04)

Crude Model: Unadjusted

***Model Two:** Adjusted for work hours in the previous 12 months, age (continuous), level of education, interview language and visible minority status

****Model Three:** Adjustd for interview year and province of residence, plus all variables in model two

*****Model Four:** Adjusted for occupation and self-employment, plus all variables in model three

All analyses weighted for selection in survey and non-response. Standard errors have been adjusted to account for complex survey design

Table Three: Odds of any work-related self-reported injury that limited normal activities, and odds of work-related injury that limited normal activities and required medical attention. Fully adjusted model, stratified by gender.

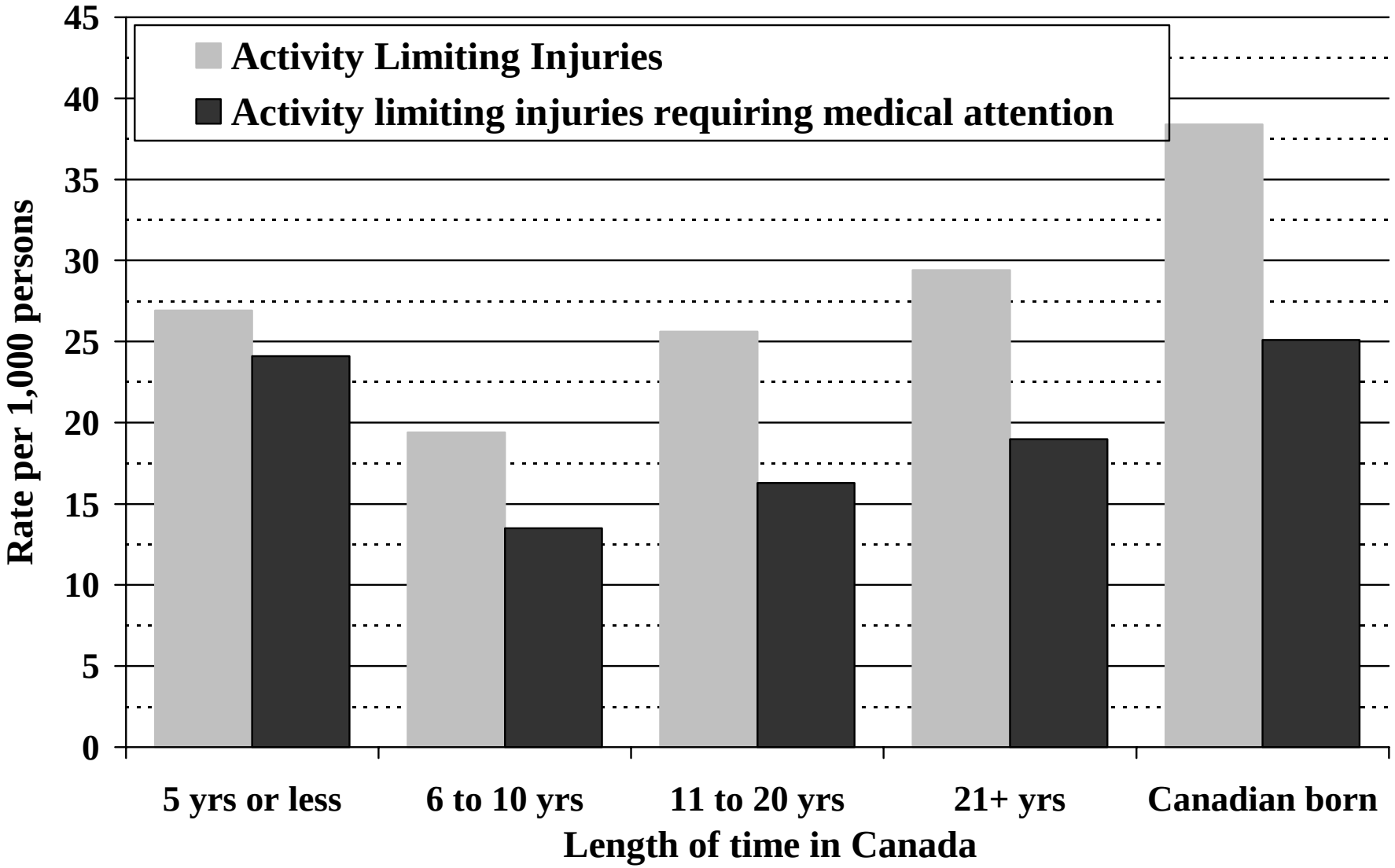
	Men				Women			
	Any injury		Injuries requiring medical attention		Any injury		Injuries requiring medical attention	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Length of time in Canada								
Canadian-born	*ref*		*ref*		*ref*		*ref*	
21+ years	1.12	(0.84 -- 1.48)	1.01	(0.70 -- 1.44)	0.88	(0.57 -- 1.35)	0.86	(0.51 -- 1.44)
11 to 20 yrs	0.89	(0.57 -- 1.37)	0.85	(0.50 -- 1.46)	0.81	(0.43 -- 1.54)	0.56	(0.24 -- 1.29)
6 to 10 yrs	0.63	(0.28 -- 1.43)	0.47	(0.21 -- 1.03)	0.85	(0.33 -- 2.18)	1.06	(0.38 -- 2.94)
0 to 5 yrs	1.47	(0.77 -- 2.81)	1.93	(0.93 -- 4.02)	0.39	(0.10 -- 1.49)	0.32	(0.01 -- 15.04)
Age								
Years	0.98	(0.98 -- 0.99)	0.99	(0.98 -- 0.99)	0.99	(0.99 -- 1.00)	1.00	(0.99 -- 1.01)
Interview lanuage								
English	*ref*		*ref*		*ref*		*ref*	
French	1.40	(1.09 -- 1.78)	1.47	(1.13 -- 1.91)	0.84	(0.51 -- 1.36)	0.82	(0.46 -- 1.43)
Other	0.60	(0.22 -- 1.60)	0.75	(0.27 -- 2.08)	0.62	(0.21 -- 1.83)	0.61	(0.07 -- 5.58)
Education								
Bachelors plus	*ref*		*ref*		*ref*		*ref*	
Post-sec dip/cert	1.83	(1.45 -- 2.32)	1.85	(1.35 -- 2.52)	1.17	(0.85 -- 1.60)	1.02	(0.71 -- 1.47)
Secondary	1.56	(1.23 -- 1.99)	1.53	(1.12 -- 2.08)	1.06	(0.77 -- 1.47)	0.91	(0.60 -- 1.33)
Less than secondary	1.87	(1.42 -- 2.48)	1.79	(1.25 -- 2.56)	1.53	(1.05 -- 2.22)	1.31	(0.82 -- 1.99)
Visible Minority								
No	*ref*		*ref*		*ref*			
Yes	0.66	(0.50 -- 0.87)	0.75	(0.53 -- 1.06)	0.88	(0.60 -- 1.30)	1.02	(0.69 -- 1.52)
Survey Year								
2003	*ref*		*ref*		*ref*		*ref*	
2005	1.00	(0.86 -- 1.17)	0.99	(0.83 -- 1.18)	0.72	(0.56 -- 0.92)	0.80	(0.59 -- 1.069)

Table Three (cont): Odds of any work-related self-reported injury that limited normal activities, and odds of work-related injury that limited normal activities and required medical attention. Fully adjusted model, stratified by gender.

	Men				Women			
	Any injury		Injuries requiring medical attention		Any injury		Injuries requiring medical attention	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Geographic Area								
Ontario	*ref*		*ref*		*ref*		*ref*	
Atlantic Provinces	1.02	(0.84 -- 1.24)	0.98	(0.78 -- 1.24)	1.23	(0.93 -- 1.63)	1.21	(0.83 -- 1.75)
Quebec	0.86	(0.65 -- 1.13)	0.90	(0.67 -- 1.21)	1.49	(0.91 -- 2.44)	1.55	(0.85 -- 2.83)
Mid-Western Provinces	1.15	(0.94 -- 1.41)	1.00	(0.79 -- 1.27)	1.41	(1.01 -- 1.98)	1.48	(0.96 -- 2.27)
Alberta	1.12	(0.94 -- 1.34)	1.09	(0.87 -- 1.36)	1.02	(0.74 -- 1.41)	1.07	(0.71 -- 1.63)
British Columbia	1.31	(1.11 -- 1.56)	1.46	(1.18 -- 1.81)	1.46	(1.10 -- 1.95)	1.43	(0.99 -- 2.05)
Northern Provinces and Territories	1.17	(0.85 -- 1.62)	1.22	(0.83 -- 1.78)	1.40	(0.80 -- 2.46)	1.02	(0.57 -- 1.83)
Occupation								
Non-manual	*ref*		*ref*		*ref*		*ref*	
Mixed	2.16	(1.72 -- 2.71)	2.15	(1.64 -- 2.81)	1.81	(1.40 -- 2.33)	2.29	(1.70 -- 3.08)
Manual	3.27	(2.69 -- 3.98)	3.94	(3.14 -- 4.95)	3.59	(2.81 -- 4.58)	4.13	(3.04 -- 2.29)
Missing	1.52	(0.75 -- 3.08)	1.93	(0.77 -- 4.85)	--	--	--	--
Self-Employed								
No	*ref*		*ref*		*ref*		*ref*	
Yes	0.88	(0.75 -- 1.04)	0.75	(0.61 -- 0.93)	0.60	(0.43 -- 0.83)	0.68	(0.45 -- 1.02)

* All analyses weighted for selection in survey and non-response. Standard errors have been adjusted to account for complex survey design

Figure One: Comparing rate of injuries limiting activities and those limiting activities and requiring medical attention across length of time in Canada



Comparing the risk of work-related injuries between immigrants to Canada, and Canadian-born labour market participants.

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Notes