The occupational health and safety vulnerability of recent immigrants accessing settlement services

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Abstract

Objective To compare occupational health and safety (OHS) vulnerability of recent Canadian immigrants and workers born in Canada.

Methods Recent immigrants ($n = 195$) were recruited at four settlement agencies in Southern Ontario, and non-immigrants in Ontario ($n = 1030$) were contacted by phone and email by a third-party survey provider. The questionnaire measured OHS vulnerability using a 27-item measure and collected sociodemographic and workplace information. Responses were used to evaluate one overall and three specific (policy and procedure, awareness, and empowerment) measures of OHS vulnerability. Log-binomial models compared the overall and policy and procedure-, awareness- and empowerment-related vulnerability of recent immigrants to non-immigrant workers. Models were adjusted for demographic and workplace characteristics.

Results New immigrants experience statistically elevated levels of overall (adjusted risk ratio [ARR] = 1.60, 95% CI 1.23–2.07) and empowerment-related vulnerability (ARR = 1.54, 95% CI 1.09–2.17). Compared to workers born in Canada, immigrants also report elevated levels of policy and procedure vulnerability (ARR = 1.37, 95% CI 0.98–1.92), although this estimate did not meet traditional criteria for statistical significance.

Conclusions This study uses a novel multi-dimensional measure to identify how differences in workplace context place recent immigrant workers at increased risk of work-related injury or illness. Recent immigrant workers experience increased risk of OHS vulnerability. In particular, this vulnerability results from exposure to hazards in combination with inadequate levels of empowerment to protect themselves in the workplace. Policy-makers, advocates, and employers should implement strategies that not only build workplaces where occupational hazards are minimized but also ensure immigrant workers are empowered to act on their workplace rights and engaged to improve workplace safety.

Résumé

Objectifs Comparer la vulnérabilité des travailleurs récemment immigrés au Canada et des travailleurs nés au Canada sur le plan de la santé et de la sécurité au travail (SST).

Méthode Des immigrants récents ($n = 195$) ont été recrutés dans quatre organismes d'établissement nationaux situés dans le Sud de l'Ontario, et des non-immigrants de l'Ontario ($n = 1030$) ont été contactés par téléphone et par courriel par une entreprise de sondages externe. Un questionnaire a mesuré la vulnérabilité des répondants sur le plan de la SST à l'aide de 27 questions et recueilli des données sociodémographiques et sur le lieu de travail. Les réponses ont servi à évaluer trois indicateurs particuliers

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(politiques et procédures, connaissance et autonomisation) et un indicateur général de la vulnérabilité sur le plan de la SST. Des modèles log-binomiaux ont permis de comparer la vulnérabilité générale des travailleurs récemment immigrés à celle des travailleurs non immigrants, ainsi que leur vulnérabilité respective sur le plan des politiques et procédures, de la connaissance et de l'autonomisation. Les modèles ont été ajustés en fonction des caractéristiques démographiques et du lieu de travail.

Résultats Les nouveaux immigrants présentent des niveaux statistiquement élevés de vulnérabilité générale (risque relatif ajusté [RRA] = 1,60, IC de 95% 1,23–2,07) et de vulnérabilité liée à l'autonomisation (RRA = 1,54, IC de 95% 1,09–2,17). Comparativement aux travailleurs nés au Canada, les immigrants font aussi état de niveaux élevés de vulnérabilité liée aux politiques et procédures (RRA = 1,37, IC de 95% 0,98–1,92), mais cette estimation ne respecte pas les critères habituels de signification statistique.

Conclusions L'étude emploie un nouvel indicateur pluridimensionnel pour déterminer si les différences sur le lieu de travail présentent des risques accrus d'accidents du travail ou de maladies professionnelles pour les travailleurs récemment immigrés. Ces travailleurs sont plus vulnérables sur le plan de la SST. Cette vulnérabilité résulte en particulier de la combinaison de leur exposition aux risques professionnels et de leurs niveaux d'autonomisation insuffisants pour les en protéger. Les responsables des politiques, les défenseurs des droits et les employeurs devraient appliquer des stratégies qui ne font pas que créer des lieux de travail où les risques professionnels sont réduits, mais qui habilite les immigrants à faire valoir leurs droits en milieu de travail et à participer à l'amélioration de la sécurité au travail.

Keywords Emigrants and immigrants · Occupational health · Vulnerable populations · Worker

Mots-clés Émigrants et immigrants · Santé au travail · Populations vulnérables · Travailleur

Introduction

Immigration into Canada is an important driver of the country's economy and a key contributor to the nation's future demographic growth (Association of Workers' Compensation Boards of Canada 2014; Kustec 2012; Chen et al. 2010). Immigrants make up over 20% of the national labour force, with over a quarter of this population having arrived in the country within the preceding 10 years (Kustec 2012).

A key goal of the Canadian immigration system is economic development through labour market participation. To this end, 60% of immigrants are granted entry based on their skills, education and ability to contribute to the Canadian economy (Citizenship and Immigration Canada 2016; Variyam 2006). Despite this focus, immigrants experience poor labour market outcomes compared to workers born in Canada (Citizenship and Immigration Canada 2016). Compared to Canadian-born adults, recent immigrants experience higher unemployment levels and lower employment rates and despite a decline in the overall proportion of Canadians considered low income since 1995, recent immigrants remain 2.5 times more likely to live below the low-income cut-off (Picot and Hou 2014). Recent immigrants also experience significantly worse job quality than workers born in Canada. For example, immigrant workers are three times more likely to earn under \$10 an hour than workers born in Canada, and immigrants with university degrees earn only 70% of the amount earned by Canadian-born graduates (Yssaad 2012). Immigrants tend to work in less-unionized industries, report having more social stressors at work (Hoppe 2011), are more likely to work in involuntary

part-time and temporary jobs (Yssaad 2012; Gilmore 2009) and are less likely to have employer-sponsored health benefits and paid sick leave (Kosny et al. 2012; Park 2011; Dong et al. 2007).

Differences in labour market outcomes and job quality arise for a number of reasons. Many recent immigrants have difficulty finding jobs commensurate with their education and experience because their international credentials are not recognized (Smith and Jackson 2002) and they have few social networks (Nevitte and Kanji 2007) and lack work experience in the country of arrival (Smith and Mustard 2010). When able to find jobs, immigrants are more likely to be employed in "survival jobs" characterized by high hazards and high risk of injury (Gilmore 2009; Breslin and Smith 2005; Teelucksingh and Galabuzi 2005; Premji et al. 2010). For example, recent immigrant men (i.e., in Canada for 5 years or less) have twice the risk of work-related injury compared to workers born in Canada (Smith and Mustard 2009).

As a result of these elevated risks, immigrant workers are often considered "vulnerable workers". The term vulnerable workers is used to identify those at increased risk of workplace injury or illness, and alongside immigrant workers it is used to describe young workers, workers in hazardous industries and workers in temporary jobs (Law Commission of Ontario n.d.). It has been argued, however, that using population characteristics such as immigration status to categorize groups of workers as vulnerable can lead to risk of injury being viewed as something inherent to particular groups and does little to identify the specific factors that place identified subgroups at increased risk of work-related injury (Smith et al. 2015; Lay et al. 2015). Rather, vulnerability should be conceptualized as

the product of workplace context. Vulnerability is the result of worker exposure to a hazardous work environment without adequate protections in place to manage the associated risks. Key protections designed to mitigate the impact of hazard exposure include occupational health and safety (OHS) policies and procedures, worker awareness of health and safety rights and responsibilities, and worker empowerment to engage in injury prevention.

Using this framework of vulnerability, the objective of this paper is to compare the OHS vulnerability experienced by recent immigrants and non-immigrant workers.

Methods

Study population

This study compares the OHS vulnerability among recent immigrants and non-immigrant workers in Ontario. This study defines recent immigrants as individuals residing in Ontario who were born outside of Canada and are not Canadian citizens. This definition includes temporary foreign workers, permanent residents and individuals who have applied for or been granted refugee status. Immigrants were eligible for the study if they were currently employed or had been employed in Canada within the preceding year, and had arrived in Canada within the last 5 years. As recruitment progressed, the latter criterion was relaxed to include participants who had been in Canada for up to 10 years. Most of the immigrant respondents arrived in Canada through the family stream (41.9%), while 17.2% were refugees, and 22.0% were economic immigrants, skilled workers or temporary work permit holders. Respondents were most often employed in retail, accommodation and food service jobs (22.0%) and in health care and social assistance roles (13.8%). (Results not shown but available upon request.)

Recent immigrant workers were compared to non-immigrant workers in Ontario, that is to say Canadian citizens born in Canada who reside in Ontario. Non-immigrant workers were eligible if they were employed more than 15 h a week at a workplace with more than five employees.

Data

Data were collected from August to October 2015. Different strategies were used to recruit immigrant and non-immigrant participants in order to collect adequate information on recent immigrants, a population group poorly captured by population-level data collection strategies. Recent immigrants were recruited by research assistants at four immigrant settlement agencies in Southern Ontario. These settlement agencies offer a variety of services, including primary care, job preparation and English language classes. A total of 195 responses

were collected at four partner locations, representing a response rate of 28%.

Data from 1030 non-immigrant workers were collected as part of a larger research project examining OHS vulnerability in Ontario and British Columbia (Smith et al. 2015; Lay et al. 2015; Lay et al. 2017). The questionnaire was administered by a third-party survey provider to individuals who had previously agreed to be part of a research panel. The majority of respondents were panel participants contacted by email or by phone (90.5%); a small sample (9.5%) of workers were recruited using random digit dialing (RDD). The response rate for panel contacts was 20.0%, and 10.1% for RDD.

Questionnaire

This study employed the 27-item OHS Vulnerability Measure. Workers responded to a series of questions on each of the four dimensions of vulnerability: hazard exposure; protective policies and procedures; awareness of health and safety rights and responsibilities; and empowerment to participate in injury prevention. The process to develop the vulnerability measure included a literature review, focus groups and testing of the measures' psychometric properties (Smith et al. 2015). Exploratory factor analysis demonstrated the items selected describe related but distinct dimensions of vulnerability. The questionnaire also included sociodemographic and workplace questions and was made available in English and Spanish to immigrant participants, and in English alone to non-immigrant respondents.

Measures

Outcome variable—OHS vulnerability OHS vulnerability was assessed using a 27-question survey that measures worker perception of four dimensions of vulnerability: hazard exposure; workplace health and safety policies and procedures; awareness of hazards and OHS rights and responsibilities; and worker empowerment to participate in injury and illness prevention (Institute for Work and Health 2017). Workers were considered to be “most vulnerable” if they reported being exposed to on-the-job hazards *in combination with* inadequate access to at least one of the three remaining dimensions understood as resources to mitigate the exposure risk (workplace policies and procedures, OHS awareness or empowerment). Four types of vulnerability are defined based on this definition: policy and procedure vulnerability (hazard exposure and inadequate policies and procedures); awareness vulnerability (hazard exposure and inadequate awareness); empowerment vulnerability (hazard exposure and inadequate empowerment); and overall vulnerability (hazard exposure and any inadequate mitigation resource).

Individuals reported their exposure to hazards using a 7-point scale to describe how often (never to every day) they

were exposed to nine workplace hazards such as repetitive movement and workplace harassment. Respondents were classified as exposed to hazards if they reported weekly or more frequent exposure to any two hazards, or if they reported at least weekly exposure to lifting or carrying 20 kg at least ten times a day; work at heights higher than 2 m; bullying or harassment; or work with hazardous substances.

Individuals were classified as having inadequate access to a specific mitigating resource when they disagreed (disagree or strongly disagree) with at least one of the related statements. Adequacy of policy and procedures (PP) was evaluated with seven statements, including “there is an active and effective health and safety committee and/or safety representative” and “incidents and accidents are investigated quickly in order to improve workplace health and safety”. Six statements measured worker awareness (AW) of health and safety rights and responsibilities and safe work practices. Among these statements were “I am clear about my rights and responsibilities in relation to workplace health and safety” and “I know how to perform my job in a safe manner”. Empowerment (EM) was measured using five statements about whether individuals feel free to voice health and safety concerns, such as “I know I can stop work if I think something is unsafe and management will not give me a hard time”.

For each measure of OHS vulnerability (overall, policy and procedure, awareness and empowerment), participants were classified into three categories. “Least vulnerable” includes those who were not exposed to hazards and reported adequate mitigation resources. “Somewhat vulnerable” includes those without workplace hazards but inadequate mitigating resources and those who report hazards but describe adequate mitigating resources. The “most vulnerable” are those who are exposed to workplace hazards and report insufficient protective resources.

Independent variable—immigrant status Recent immigrants are compared to non-immigrants.

Covariates A number of sociodemographic variables were included as confounders in the analysis: gender (male or female); age (< 35 years old, 35–44 years old, 45–54 years old or 55 years and older); and highest level of education (high school graduation, trades training or college degree, bachelor’s degree, postgraduate degree). Workplace characteristics, including employment relationship (permanent vs. temporary), union membership (yes vs. no) and workplace size, were included in the analysis as mediators in the relationship between immigrant status and OSH vulnerability.

Analysis

A number of steps were taken to prepare data for analysis. For observations with a single missing response in the Policy and

Procedure, Awareness or Empowerment dimensions of OHS vulnerability, the item value was imputed based on the mean of the respondent’s other responses within that dimension. Values were imputed for 119 policy and procedure responses, 43 awareness responses and 55 empowerment responses. After imputation, individuals still missing more than one response on any of these dimensions or who were missing two or more hazard-related responses were removed ($N = 167$), as were those missing information related to immigration status and any covariate ($N = 72$). This left a final sample of 121 recent immigrants (62% of the original sample) and 865 non-immigrants (84% of the original sample). A large number of recent immigrant responses were also missing information on workplace size ($N = 16$, 13% of immigrant sample). As removing this group would substantially reduce the sample of recent immigrants, we kept these respondents in the sample and examined differences in regression results with and without this group.

The distribution of demographic workplace characteristics and of three specific and one overall type of vulnerability was examined and compared across recent immigrants and non-immigrants. Then, a series of log-binomial models were built to investigate the relationship between immigrant status and each measure of OHS vulnerability. The “least” and “somewhat” vulnerable categories were collapsed into one and the risk of being “most vulnerable” was modeled. Log-binomial models were selected because vulnerability outcomes were common and an odds ratio estimated using a logistic regression modeling approach would not approximate the risk ratio (Zhang and Yu 1998). Crude models were fit and then adjusted for gender, age and highest level of education (model 2). Further adjustment was then made for workplace characteristics (except workplace size) (model 3). A final sensitivity analysis compared estimates from model 3 for the sample who had valid workplace size responses. The estimates from this model were not substantively different from the estimates for the full sample. Analyses were completed using SAS 9.3 (SAS Institute, Cary, NC, USA).

Results

The demographic and workplace differences between immigrant and non-immigrant workers are presented in Table 1. Compared to non-immigrant respondents, immigrant respondents were more often female (64.5% vs 49.7%) and were more than twice as likely to be under the age of 35 years (47.1% vs 20.6%). Immigrants in the study were also statistically more likely to be in temporary work relationships compared to non-immigrants (51.2% vs. 10.3%) and were less often union members (9.9% vs. 37.7%).

The recent immigrant and Canada-born workers also differed with respect to the four dimensions of OHS

Table 1 Demographic and workplace characteristics, and prevalence of vulnerability dimensions across recent immigrants and non-immigrants ($n = 986$)

	Recent immigrant		Non-immigrant		<i>p</i> -value for difference
	<i>n</i> = 121		<i>n</i> = 865		
	N	%	N	%	
Sex					
Female	78	64.5	430	49.7	0.002
Male	43	35.5	435	50.3	
Age					
< 35 years	57	47.1	178	20.6	< 0.001
35–44 years	40	33.1	197	22.8	
45–54 years	16	13.2	224	25.9	
55 + years	8	6.6	266	30.7	
Education					
High school graduation	26	21.5	138	16.0	0.003
Trades certification	21	17.3	285	33.0	
Bachelor’s	40	33.1	270	31.2	
Postgraduate degree	34	28.1	172	19.8	
Work relationship					
Permanent	59	48.8	776	89.7	< 0.001
Temporary	62	51.2	89	10.3	
Union membership					
Yes	12	9.9	326	37.7	< 0.001
No	190	90.1	539	62.3	
Workplace size					
Less than 20 employees	42	34.7	158	18.3	< 0.001
20–99 employees	43	35.5	270	31.2	
100 or more employees	20	16.5	437	50.5	
Missing	16	13.2	0	0	
					< 0.001
Hazard exposure	80	66.1	433	50.1	0.0009
Inadequate policies and procedure	54	44.6	344	39.8	0.31
Inadequate awareness	24	19.8	190	22.0	0.59
Inadequate empowerment	49	40.5	303	35.0	0.24

vulnerability. Nearly two thirds (66.1%) of recent immigrants reported hazard exposure, statistically higher than just half (50.1%) of the non-immigrant sample exposed to hazards. Recent immigrants, as compared to non-immigrants, were also more likely to report inadequate policies and procedures (44.6% vs. 39.8%) and inadequate empowerment (40.5% vs. 35.0%), though these differences were not statistically significant. The prevalence of inadequate awareness was similar in the recent immigrants (19.8%) and non-immigrants (22.0%).

The distribution of OHS vulnerability across immigrant and non-immigrant groups is presented in Table 2. In all four measures of OHS vulnerability, there are significant differences between the two samples. Overall, 45.5% of recent immigrants were classified as most vulnerable, statistically higher than the 30.3% of non-immigrants classified as such. Immigrants are also statistically more often classified as

having the “most” policy and procedure vulnerability. While a similar proportion of immigrants and non-immigrants were considered to be most vulnerable to awareness-related vulnerability, non-immigrants were statistically more often (40.7%) classified as least vulnerable compared to immigrants (28.1%). The highest level of empowerment-related vulnerability was statistically more common among immigrants, while non-immigrants were more likely to have low vulnerability.

Risk ratio estimates and 95% confidence intervals are presented in Table 3. The crude relationships are reported followed by models adjusted first for demographic characteristics (model 2) and then for demographic and workplace characteristics (model 3). The estimate in model 2 can be understood as the difference in the risk of vulnerability for recent immigrants compared to non-immigrants, if the samples were equivalent

Table 2 Vulnerability classification across recent immigrant and non-immigrant groups ($n = 986$)

	Recent immigrant		Non-immigrant		<i>p</i> value for difference
	<i>n</i> = 121		<i>n</i> = 865		
	<i>n</i>	%	<i>n</i>	%	
Overall vulnerability					
Least vulnerable	19	15.7	227	26.2	0.002
Somewhat vulnerable	47	38.8	376	45.5	
Most vulnerable	55	45.5	262	30.3	
Policy and procedure vulnerability					
Least vulnerable	25	20.7	291	33.6	0.01
Somewhat vulnerable	58	47.9	371	42.9	
Most vulnerable	38	31.4	203	23.5	
Awareness vulnerability					
Least vulnerable	34	28.1	350	40.5	0.03
Somewhat vulnerable	70	57.9	407	47.0	
Most vulnerable	17	14.1	108	12.5	
Empowerment vulnerability					
Least vulnerable	29	24.0	327	37.8	0.01
Somewhat vulnerable	55	45.4	340	39.3	
Most vulnerable	37	37.6	198	22.9	

with respect to age, gender and education, whereas in model 1 these differences are not taken into account. In model 3, the change in estimate can be interpreted as the difference in vulnerability between recent immigrants and non-immigrants if workplace characteristics between these two groups were equivalent. The difference between the risk estimates in models 2 and 3 allows us to understand whether the difference in risk of OHS vulnerability for recent immigrants compared

to non-immigrants is due to their working conditions. This is important as working conditions are a potentially modifiable way to reduce OHS vulnerability among recent immigrants.

Table 3 shows that after adjustment for potential sociodemographic confounders, recent immigrants were more likely to experience all types of vulnerability compared to non-immigrants. The differences in overall vulnerability (ARR 1.51, 1.20–1.90), policy and procedure vulnerability

Table 3 Immigrant status and OHS vulnerability (MOST vulnerable). Risk ratio (RR) and 95% confidence intervals (CI) for crude and adjusted models ($n = 986$). Estimates that are statistically significant are italicized

	Crude model			Model 2			Model 3		
	RR	95% CI		RR	95% CI		RR	95% CI	
Overall vulnerability									
Non-immigrant	Ref.			Ref.			Ref.		
Recent immigrant	<i>1.50</i>	<i>1.20</i>	<i>1.87</i>	<i>1.51</i>	<i>1.20</i>	<i>1.90</i>	<i>1.60</i>	<i>1.23</i>	<i>2.07</i>
Policy and procedure vulnerability									
Non-immigrant	Ref.			Ref.			Ref.		
Recent immigrant	<i>1.34</i>	<i>1.00</i>	<i>1.79</i>	<i>1.43</i>	<i>1.05</i>	<i>1.95</i>	<i>1.37</i>	<i>0.98</i>	<i>1.92</i>
Awareness vulnerability									
Non-immigrant	Ref.			Ref.			Ref.		
Recent immigrant	<i>1.13</i>	<i>0.70</i>	<i>1.81</i>	<i>1.27</i>	<i>0.77</i>	<i>2.10</i>	<i>1.22</i>	<i>0.71</i>	<i>2.11</i>
Empowerment vulnerability									
Non-immigrant	Ref.			Ref.			Ref.		
Recent immigrant	<i>1.34</i>	<i>0.99</i>	<i>1.78</i>	<i>1.37</i>	<i>1.01</i>	<i>1.87</i>	<i>1.54</i>	<i>1.09</i>	<i>2.17</i>

Model 2: adjusted for age, sex and highest education level. Model 3: adjusted for age, sex, highest education level, work relationship and union membership

(RR 1.43, 1.05–1.95) and empowerment vulnerability (ARR 1.37, 1.01–1.87) are statistically significant. Taking both individual and workplace characteristics into consideration, immigrants were more than one and a half times as likely (ARR 1.54, 1.09–2.17) to experience empowerment-related vulnerability and 60% more likely to experience overall OHS vulnerability (ARR 1.60, 1.23–2.07). After full adjustment, risk of policy and procedure vulnerability was elevated among immigrant workers compared to non-immigrant respondents, though the difference was not statistically significant (ARR 1.37, 0.98–1.92).

Discussion

Work-related injuries and illness are an important public health concern. Data from the 2013/2014 Canadian Community Health Survey demonstrate that 16% of traumatic physical injuries among 25- to 64-year-old Canadians occur at work, as do more than a quarter (28%) of activity-limiting repetitive movement injuries (Statistics Canada 2014). The objective of this study was to compare the OHS vulnerability experienced by recent immigrants to that of non-immigrants. We found that recent immigrant workers experience significantly higher levels of empowerment vulnerability and overall vulnerability, even after models were adjusted for demographic and workplace characteristics. These persisting differences in vulnerability suggest that differences cannot be explained by differing population characteristics or differing levels of union membership or type of employment relationship. Even when immigrant workers are in similar types of jobs as workers born in Canada, they experience elevated levels of OHS vulnerability.

We observed that recent immigrants were more likely to report being exposed to workplace hazards and were far more likely to work in temporary jobs and in a non-unionized environment. These findings are similar to other research that indicates recent immigrants, even when they have high levels of education and experience, can end up in “survival jobs” that are characterized by hazardous work conditions and increased precarity (Noack and Vosko 2011).

Recent immigrants in our study had elevated levels of empowerment-related vulnerability compared to non-immigrants. This inequality in empowerment vulnerability is likely due to the well-documented struggle that recent immigrants experience in finding employment that reflects their training and education (Smith and Jackson 2002). Often, immigrants’ international qualifications are not recognized and employers place a high value on local work experience—something that by virtue of being a newcomer will be absent (Chen et al. 2010; Smith and Mustard 2010). Many immigrants also remit funds to family in their home country or wish to sponsor family members (Ruddick et al. 2005). These factors make securing a job and maintaining employment very important.

Recent immigrants may not speak up when they see something unsafe or stop working if they view their job as hazardous because they feel that this will jeopardize their employment. While this study has identified high levels of empowerment vulnerability among recent immigrants, future research should examine the reasons why immigrants may not feel that they can speak up when they see something unsafe.

We observe that immigrant workers experience elevated risk of policy and procedure vulnerability. While the result is shy of statistical significance, the effect size remains noteworthy. The finding that immigrant workers have access to less complete workplace protections mirrors previous findings that suggest that immigrants are more likely than non-immigrant workers to hold jobs without adequate systems in place to identify, communicate about and address workplace hazards. Further research is needed to understand this finding and to determine whether it reflects a real lack of protective policies and procedures or a difference in immigrant and non-immigrant understanding and knowledge of the protections that are in place.

Immigrants and non-immigrants were most similar with respect to awareness vulnerability. This finding differs from previous research which has found that recent immigrants are less likely to receive work-related training and do not receive information on employment standards or occupational health and safety rights during the settlement process (Kosny et al. 2012; Premji et al. 2008). Compared to other protections, the prevalence of inadequate awareness was relatively low in both recent immigrant and non-immigrant samples (see Table 1). This may reflect some workers being unable to recognize the gaps in their own knowledge reporting awareness when in fact their knowledge of rights and responsibilities is limited. Alternatively, it may reflect that awareness levels are generally high among Ontario labour force participants, but that empowerment to act on the health and safety knowledge is the primary barrier to improving OHS conditions. Future studies might investigate workers’ depth of knowledge of employment and OHS rights alongside the self-reported level of awareness.

The results of this study should be interpreted given the following strengths and limitations. A fruitful collaboration with four settlement organizations serving diverse communities allowed for access to respondents who may not regularly participate in research and whose experiences had not previously been captured in studies using the OHS vulnerability measure. However, caution should be exercised in generalizing the results to all recent immigrants to Canada. For example, administration of the survey in only English and Spanish means that the employment experience of workers who do not speak one of these two languages was not recorded. Workers who do not access settlement services may have less knowledge about workplace rights and less access to community-based supports. On the other hand, fully employed immigrant workers in positive workplace relationships may not seek resources available from settlement agencies and as a result have

not been captured in our sample. The sample of non-immigrant workers includes a diverse cross section of workers and was sampled at the same time as immigrant data were collected. However, it too is limited in its representativeness. Compared to the Canadian-born labour force, young workers and workers in sales and service and natural and applied science occupations are underrepresented. In both the immigrant and non-immigrant samples, volunteer bias may inflate the prevalence of OHS vulnerability as workers who experience acute OHS risks may be more inclined to participate in a study on the issue. To address these limitations, more detailed questions on work context as it relates to work injury and illness must be included in representative population-based surveys. The cross-sectional nature of the data used in this study also limits the conclusions drawn; only associations can be reported upon, although reverse causality between our outcome and main exposure is not possible.

Conclusion

Immigration is a fundamental building block of the Canadian economy and a significant feature of Canadian national identity. While economic development through labour market participation is articulated as a priority of Canadian immigration policy, new immigrant workers continue to find themselves in low-paying, precarious, high hazard workplaces without access to resources to protect themselves.

This study employs a novel framework to provide a snapshot of the contexts Ontario immigrants work in. The study moves beyond simply identifying recent immigrants as a vulnerable group by examining the workplace conditions that contribute to this increased risk. Based on our results, we suggest that activities to reduce on-the-job hazard exposure should be coupled with efforts to build workplaces where workers are empowered to enact their rights and responsibilities and initiatives to strengthen workplace policies and procedures where immigrants are employed.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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