Work and health challenges of Indigenous people in Canada

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The Truth and Reconciliation Commission of Canada has published 94 calls to action to redress the legacy of residential schools where thousands of Indigenous children have died. The objective of this narrative review is to address some of these calls by summarising the available evidence on work and health issues encountered by Indigenous workers in Canada. We searched seven databases to retrieve studies on Indigenous people, in Canada, and on occupational health as defined by the International Labour Organization. We included 31 studies, from which we found that Indigenous workers are experiencing intersectionality issues: in addition to having differential health issues related to a below-average socioeconomic status, Indigenous workers face discrimination in workplaces that affects their mental health. Indigenous workers might also cumulate occupational and environmental exposures from industries that have settled close to their dwellings (eg, exposure to polychlorobiphenyls). There is a scarcity of studies on major occupational health topics such as occupational cancers or musculoskeletal disorders in Indigenous people.

Introduction

The Indigenous people discussed in this study are the descendants of the original inhabitants of the land now identified as Canada. In 2016, the number of Indigenous people in the country was approximately 1700 000, which represents 4·9% of the country’s total population. Indigenous people in Canada comprise three main groups: the First Nations, Métis, and Inuit people. First Nations are the first peoples of the landmass called Turtle Island, the term many Indigenous people use to describe northern America. This term reflects the absence of borders and traditional stories about how Mother Earth was created on the back of a turtle. There are more than 630 different First Nations across Canada, with more than 50 languages, and they account for 976 000 individuals. Of these people, approximately 744 000 are registered under the Indian Act of Canada and are known as status First Nations, and 232 000 are not registered under the Act (non-status First Nations). Over 331 000 (about 44%) of the status First Nations population live on one of the 3100 government-defined communities across Canada called reserves.

Métis people are usually described as being of mixed Indigenous and French European settlers’ ancestry. However, this description is not how Métis people would describe themselves. Métis are politically and relationally connected to Red River, Manitoba (figure 1), the first Métis settlement, and account for over 588 000 individuals.

Inuit people are a circumpolar people of a land called Nunavut, comprising Nunavut (a northeast territory in Canada), Nunavik (located in Quebec), Nunatsiavut (located in Newfoundland and Labrador), and Inuvialuit (located in Yukon and the Northwest Territories; figure 1). It is the smallest group of the three, with 65 000 individuals.

Indigenous people in Canada face substantial socioeconomic inequality compared with non-Indigenous Canadians due to impacts of colonisation, such as forced removal from their land and communities. Thousands of Indigenous children have died in residential or industrial schools. The residential school programme was created to assimilate Indigenous children into the settlers’ culture and often involved forcibly removing children from their communities, with the overall goal of eliminating Indigenous people in Canada as distinct peoples. Survivors of residential schools have reported mistreatment including psychological abuse, and physical and sexual violence. Analyses of registers concluded that almost half of the recorded deaths of children were caused by tuberculosis, in combination with poor care, malnourishment, and poor hygiene. Residential schools have constituted a major source of trauma for Indigenous people in Canada and the impact of these schools continues to live on as intergenerational trauma today. The total number of victims of this system is unknown. Not all deaths were recorded in registers, and buried bodies of children are still being discovered on the premises of former residential schools as of 2022.

Nowadays, Indigenous people face systemic issues, including racism, discrimination, and bias within institutions (eg, hospitals and health-care facilities) related to this historical context, which have not stopped after the closure of the last residential school in Canada in 1996. These systemic issues contribute to explaining disparities in health outcomes for Indigenous people in Canada compared with non-Indigenous Canadians. These disparities include increased rates of type 2 diabetes, hypertension, substance-use disorder, and mental health challenges, and increased post-surgery mortality and complications. Indigenous people in Canada tend to live in more rural regions, have lower rates of educational attainment, and are more likely to live in intergenerational housing and face housing insecurity than non-Indigenous Canadians. The average income and lifetime earnings are lower for Indigenous than non-Indigenous people, with the lowest incomes found for First Nations who live on reserve. In 2011, the life expectancy at age 1 year for girls in Canada was 76·1 years for Inuit, 77·7 years for First Nations, 82·3 years for Métis, and 87·3 years for non-Indigenous people. The life expectancy at age 1 year for boys in Canada was 70·0 years for Inuit, 72·5 years for First Nations, 76·9 years for Métis, and 81·4 years for non-Indigenous people.
The report from the Truth and Reconciliation Commission of Canada entitled *Calls to Action*, published in 2015, lists 94 calls for further action to redress the legacy of residential and industrial schools. Some of these calls constitute an agenda for research and education in health care. Call to Action 19 includes the identification of gaps in health outcomes between Indigenous and non-Indigenous communities. Call to Action 23 recommends that all levels of government provide cultural competency training for all health-care professionals.

There is a scarcity of available resources for occupational medicine specialists and occupational health providers on the specific problems encountered by Indigenous people with regards to work-related health issues. These problems include occupational health issues and social determinants of health related to work and employment. The International Labour Organization (ILO) defines occupational health as including “the maintenance and promotion of workers’ health and working capacity; the improvement of working environment and work to become conducive to safety and health and the development of work organizations and working cultures in a direction which supports health and safety at work and in doing so also promotes a positive social climate and smooth operation and may enhance productivity of the undertakings.” Occupational health includes, and goes beyond, the usual categories of occupational hazards (biological, chemical, physical, biomechanical, and psychosocial hazards). WHO defines social determinants of health as the non-medical factors that influence health outcomes. Several of these determinants are related to work and employment: income and social protection, unemployment and job insecurity, and working life conditions.

Our objective is to summarise the available evidence in the field of work and health for Indigenous people in Canada.

**Methods**

**Search strategy and selection criteria**

We conducted a narrative review to summarise the existing research focusing on the specific population of Indigenous people in the specific geographical settings of Canada about occupational health, as defined by ILO. This narrative review has taken into account the Scale for the Assessment of Narrative Review Articles framework, which is a tool for readers to assess the quality of narrative reviews, and includes six domains: justification of the article’s importance for the readership, statement of specific aims, description of the literature search, referencing, scientific reasoning, and appropriate description of data. This research involves two people who are Indigenous themselves. One of the coauthors of the study (JW) is Umpqua and her research is in decolonisation and Indigenisation of post-secondary education. Another coauthor of the study (JL) is Métis. The last coauthor of the study (QD-M) is a content expert in occupational health and medicine.

The research strategy (appendix) was built with the support of a librarian with expertise in health sciences and Indigenous studies. Studies were included irrespective of their study design. We searched the following databases: MEDLINE, CINAHL, Embase, PsycInfo, Academic Search Complete, Business Search Complete, and Cochrane Library. All databases were searched from database inception up to June 1, 2021.

Since the 1970s the term Indigenous has been recognised by the UN. However, collective terms used historically such as Indian, Native, and Aboriginal, which are not commonly used nowadays, show up in the research gathered for this Review. In these cases, we have opted to use the term Indigenous to reflect data that pertains to the collective groups of Indigenous people.

Title and abstract screening was conducted by two researchers (JL and QD-M) independently. The language of titles and abstracts was restricted to English. Disagreements were solved by reaching consensus. Full-text analysis and categorisation of included papers were conducted by two researchers (JL and QD-M). Each included paper has been fully read and summarised. Papers found to be irrelevant to our research question or redundant after full-text reading were excluded by reaching consensus. Categorisation of topics for the included papers were identified by reaching consensus.

**Results**

**Study selection**

A total of 31 studies are summarised in this narrative review (table 1). Relevant findings are summarised in
different categories that are listed in the following paragraphs. The two researchers (QD-M and JL) both agreed on including 76 references and excluding 720 references, and they were in disagreement (ie, one researcher had included the paper for full-text analysis, and the other had not) for 30 references. These 30 references were reviewed, and the researchers reached a consensus to include nine of them. Therefore, the total number of papers included for full-text analysis was 85, of which 54 were excluded because they were not related to occupational health and medicine (figure 2).

### Employment and unemployment rates

The nature of the occupational risks encountered by Indigenous people depends on their access to the job market. From 2007, when such data started to be tracked, to 2019, unemployment rates have been shown to be higher and wages to be lower for Indigenous people than for non-Indigenous people.\(^1\) In 2019, the unemployment rate for the non-Indigenous population was 5·5% versus 10·1% for Indigenous people, which is the largest difference since 2007.\(^1\) In 2019, the First Nations’ unemployment rate was 11·7% versus 8·3% for Métis.\(^1\) However, when data are adjusted for level of education

| Location of Indigenous populations | Years of study | Topic | Study design |
|-----------------------------------|---------------|-------|-------------|
| Oppenheimer (2020)\(^2\) | Canada | 2007-19 | Employment rates and wages | Literature review |
| Oppenheimer (2017)\(^2\) | Canada | 2007-16 | Employment rates and wages | Literature review |
| Feir (2013)\(^3\) | Canada | 1996–2005 | Employment characteristics and wages | Literature review |
| Lamb (2015)\(^4\) | Canada | 2007-12 | Employment rates and characteristics | Literature review |
| Hesseln and Hall (2017)\(^5\) | Northern Canada | Literature review up to 2015 and interviews in 2015\(^6\) | Education and skills training | Literature review and interviews |
| McCormick and Amundson (1997)\(^7\) | Canada | 1997 | Education and skills training | Case study |
| Hodgkins (2016)\(^8\) | Beaufort Delta region, NT, Canada | 2009-12 | Education and skills training | Case study |
| Denkenberger et al (2015)\(^9\) | Isolated communities, Canada | 2015 | Education and skills training | Case study |
| Hobart (1983)\(^10\) | Rural areas, Canada | 1968-79 | Social and cultural impact of industrial employment | Literature review |
| Holcombe and Kemp (2020)\(^11\) | Canada and Australia | Literature review up to 2020\(^\ast\) | Mining employment | Literature review |
| Hodgkins (2016)\(^12\) | Municipality of Wood Buffalo, AB, Canada | 2010-11 | Mining employment and vocational education | Case study |
| Caron et al (2019)\(^13\) | Quebec and Nunavut, Canada | 2017-18 | Mining employment | Case study |
| Laberge Gaudin et al (2015)\(^14\) | Cree community of Mistissini, QC, Canada | 2009 | Traditional food consumption | Case study |
| Galloway et al (2015)\(^15\) | Inuit living in Arctic, Canada | 2007-08 | Traditional food consumption | Case study |
| Harper et al (2015)\(^16\) | Rigolet, NL, and Iqaluit, NU, Canada | 2012-13 | Environmental risk of acute gastrointestinal illness | Cross-sectional study |
| Nizeen (1993)\(^17\) | James Bay Cree, QC, Canada | 1992 | Hydro-electric developments | Editorial |
| Fitzgerald et al (1996)\(^18\) | Attikamek (Quebec and Ontario, Canada, and New York, USA) | 1986-92 | Environmental contamination | Ecological study |
| Wennberg et al (2021)\(^19\) | Canada | 2000-20 | Cannabis use | Systematic review |
| Richardson et al (2010)\(^20\) | Vancouver, BC, Canada | 1999-2003 | Injection drug users and employment | Prospective cohort study |
| Williams et al (2016)\(^21\) | Urban cities in Alberta, Saskatchewan, and Manitoba, Canada | 2012-13 | Gambling | Cross-sectional study |
| Foulds et al (2013)\(^22\) | Canada | 1991-2011 | Cardiometabolic risk | Literature review |
| Anand et al (2006)\(^23\) | Canada | 1998-2000 | Cardiovascular risk and social disadvantage | Cross-sectional study |
| Kraut et al (2003)\(^24\) | Manitoba | 1983-90 | Diabetes, and employment and income | Prospective cohort study |
| Storme et al (2017)\(^25\) | Cree of Eeyou Istchee, QC, Canada | 2006-13 | Intestinal lung disease | Cross-sectional study |
| Hossain and Lamb (2019)\(^26\) | Canada | 2012 | Economic insecurity and psychological distress | Cross-sectional study |
| Kolahdoob et al (2015)\(^27\) | Canada | 2000-14 | Social determinants of health | Literature review |
| Jones et al (2018)\(^28\) | Canada | 2014 | Disability and workplace discrimination | Cross-sectional study |
| Mills et al (2006)\(^29\) | Alberta, Saskatchewan, and Manitoba, Canada | 2006 | Workplace culture | Case study |
| Murry and James (2020)\(^30\) | Indigenous peoples in Canada, USA, Australia, and New Zealand | 1976-2020 | Industrial-organisational psychology | Literature review |
| Honigmann (1949)\(^31\) | Indigenous peoples in Canada (Attawapiskat Cree, Ontario) | 1947-48 | Employment motivation | Editorial |
| Jin et al (2014)\(^32\) | Indigenous peoples in Canada living in Northwest Territories | 2007-08 | Supplement use | Cross-sectional study |

*Search dates are not specified further than this.

Table 1: Summary of included studies
attained, employment rates are similar. The mean weekly earnings were CA$945 for Indigenous people compared with $1018 for non-Indigenous people in 2019. The gap in mean weekly earnings between Indigenous and non-Indigenous people continues to decrease and went from –11.7% in 2007 to –7.2% in 2019. The number of weeks worked per year contribute to the earning gaps between Indigenous and non-Indigenous people. However, there is a convergence in the number of weeks worked between Métis people and non-Indigenous people.

Indigenous people were disproportionately burdened by the 2008 economic crisis: the probability of unemployment was higher and more persistent for them than for non-Indigenous people. 11% of employed First Nations people living on reserve were self-employed in 2017, with employed men more likely to be self-employed (13%) than women (8%).

Education and training
Indigenous people have less access to training than do non-Indigenous people. At the end of the 20th century, the majority of Indigenous youth did not finish secondary school, and had no credentials for jobs in the mainstream economy or in their home communities. Several examples of short-term educational and skills-training programmes have been identified, including the federally funded Aboriginal Skills and Employment Partnership programme and the Trades Access Programme. However, the success of these programmes is assessed on participation figures and numbers, rather than on whether these programmes are consistent with Indigenous people’s needs and values. Alternatively, distance-learning opportunities have provided the training and education necessary to access higher-paying and higher-skilled employment opportunities than were previously available, including many remote work careers, especially for those living in isolated communities.

Nature of employment
A higher proportion of Indigenous people are working in the goods-producing sector (agriculture, mining, oil and gas extraction, utilities, construction, and manufacturing) than non-Indigenous people (23.0% vs 20.7% in 2019). Indigenous people in Canada are most commonly employed in health care and social assistance, retail and wholesale trade, and public administration industries. In 2010, there was a higher proportion of Indigenous people than non-Indigenous people employed in the following activity sectors: health care and social assistance (14.4% of Indigenous people vs 12.7% of non-Indigenous people), public administration (10.2% vs 6.1%), and construction (10.8% vs 7.5%). Meanwhile, they were under-represented in professional, scientific, and technical services (3.4% vs 7.8%). Additionally, according to some researchers in the 1980s, the scarce availability of alternative employment sources increased the incorporation of Indigenous people into industrial employment. With regard to the difficulties faced by Inuit communities, worksite facilities and comfort are often tailored to southern (ie, non-Inuit) expectations rather than to the needs of Inuit people.

Mining
In particular, a large number of Indigenous people work in the mining industry, including for major projects such as the Voisit’s Bay nickel mine in Labrador, NL, and the Ekati diamond mine in the Northwest Territories. This sector provides job opportunities for local populations, but such projects also involve land dispossession and industrial pollution. The nature of the challenges that Indigenous people face in their workplaces depends on the proportion of individuals in agreement with the project. In non-signatory projects, in which no form of agreement has been reached with the local Indigenous community, Indigenous workers face more racism and equity issues than in signatory projects. Mining companies with signatory projects have a higher proportion of Indigenous employees than non-signatory projects, and a better working climate. The nature of the issues regarding the working climate seems to be related to language and managers’ skills.

Food
Fishing, hunting, and gathering are important activities, especially in Inuit communities. Employment has an effect on traditional food consumption. For example, in
some communities (such as the Cree community of Mistissini, QC), the income generated from employment allowed for purchasing of traditional food.\textsuperscript{13} Whereas in Iqaluit, NU, being employed increased the risk of having an acute gastrointestinal illness, which might be explained by employment limiting time available for proper food safety practices or time to access the land for country food, resulting in increased retail food consumption. Alternatively, increased income could be leading to more unhealthy food consumption behaviours.\textsuperscript{14,15} The structuration of communities, such as the James Bay Cree, after large-scale development, has disrupted traditional hunting, trapping, and fishing activities, and reduced the quality of life of affected individuals (eg, increased risk of suicide or substance abuse). The shift from traditional forms of work to the formal labour market might not be beneficial.\textsuperscript{16} Disruption of traditional fishing and hunting might also be related to environmental pollution. The Mohawk Nation at Akwesasne (in northeast America) has been affected by the contamination of the St Lawrence River with polychlorobiphenyls and other pollutants released by several industrial facilities. Increased concentrations of blood serum polychlorobiphenyls have been explained by both dietary exposure and occupational exposure in people working in these industrial facilities.\textsuperscript{17}

Substance use and addictive behaviours
Employment has been found to have a protective effect on substance use in Indigenous communities. Lower socioeconomic status in Indigenous youth is associated with a higher risk of non-medical cannabis use.\textsuperscript{18} Identifying as Indigenous has a stronger inverse association with employment in injection drug users—using heroin or cocaine—than does identifying as non-Indigenous (adjusted odds ratio [OR] 0·72, 95% CI 0·52–0·99).\textsuperscript{39} Unemployment was also predictive of increased concentrations of blood serum polychlorobiphenyls and other pollutants released by several industrial facilities. Increased concentrations of blood serum polychlorobiphenyls have been explained by both dietary exposure and occupational exposure in people working in these industrial facilities.\textsuperscript{17}

Chronic disease and work
Indigenous people have increased rates of chronic diseases compared with the general population. Métis individuals, for instance, have higher rates of cardiovascular diseases, metabolic syndrome, and obesity, than Canada’s non-Indigenous population does.\textsuperscript{18,19} A review published in 2013 found that Métis individuals have a higher prevalence of type 2 diabetes (5·6–7·1%) than the general population in Canada (3–4%).\textsuperscript{4} Further, Indigenous people who had diabetes were found to work more years before retirement than non-Indigenous people. It was unclear whether the longer employment was due to psychosocial variables or to the insufficient financial support available to Indigenous people.\textsuperscript{20} Addressing socioeconomic disparities including employment obtainment is necessary to reduce the chronic disease burden faced by Canada’s Métis population.\textsuperscript{21} The incidence of interstitial lung disease and idiopathic pulmonary fibrosis might be higher in the Cree of Eeyou Istchee, QC, than in other populations. However, this hypothesis requires further diagnostic evidence, and data on occupational exposures are scarce.\textsuperscript{22}

Psychological safety
Unemployed Indigenous people in Canada were found to have decreased levels of psychological wellbeing. Data from the 2012 Aboriginal Peoples Survey showed that only 13·6% of unemployed Indigenous people reported the highest level of psychological wellbeing compared with 20·2% of Indigenous people employed full time.\textsuperscript{41} Policies to address the basic psychological needs of Indigenous people are warranted.\textsuperscript{42} Rates of workplace racism and discrimination faced are higher among Indigenous employees than non-Indigenous employees.\textsuperscript{43} Data from the 2014 Canadian Public Service Employee Survey showed that federal workers identifying as Indigenous were about two times more likely to face harassment (adjusted OR 1·84, 95% CI 1·74–1·94) or discrimination (2·20, 2·04–2·37) than other respondents.\textsuperscript{44} A study conducted with Indigenous women working in forest processing plants in the Northern Prairies showed that some women thought that addressing cultural differences and empowering Indigenous women were more important than directly addressing racism and structured inequality in their workplace.\textsuperscript{45} Work-related values, definition of success, and career choices might differ between Indigenous and non-Indigenous people.\textsuperscript{46} Stereotypes regarding Indigenous people at the workplace have been perpetuated for years, where some employers have reported that Indigenous people worked slowly, loitered for a long time, and had to be constantly supervised.\textsuperscript{47}

Workers’ compensation
Indigenous people in British Columbia have a higher incidence of injury (from all causes) than the general population.\textsuperscript{48} With regards to work-related injuries, the disparities might result from the competing effects of employment rates, occupations, and industries. The employment rate increased among Indigenous reserve residents between 2001 and 2006, as did the hazardousness of their occupations. Between 1987 and 2010, the standardised relative risk of worker compensation injuries was lower in Indigenous workers of British Columbia than in the total covered population in British Columbia (standardised risk ratio 0·88, 95% CI 0·87–0·89).\textsuperscript{49} Workers’ compensation injury rates declined for the total population (ie, both Indigenous and non-Indigenous), probably reflecting a trend towards safer work climates, but the decline was less substantial for Indigenous people. Among Indigenous people, urban residents were at higher risk of workers’ compensation injury than those not residing in urban
areas. It is plausible that urban Indigenous people are more at risk of workers’ compensation injury because they are more likely to be employed than those residing in rural areas.¹¹

**Discussion**

This Review is the first summary of the available evidence relevant to work and health issues for Indigenous people in Canada that we are aware of (table 2). This Review brings a contribution to some of the calls to action from the 2015 report from the Truth and Reconciliation Commission of Canada.⁹ In particular, this Review helps to identify gaps between Indigenous and non-Indigenous populations (Call to Action 19), and it can be used for educational purposes in the field of occupational health and medicine training (Call to Action 23).

Indigenous people experience intersectionality in the issues they face in workplaces. In a scoping review on intersectionality in health interventions, Ghasemi and colleagues wrote that “human beings are shaped by the interaction of multiple interlocking locations (such as race/ethnicity, gender, social class, age, migration status, etc), and these interactions occur within a context of interconnected systems and power structures.”¹¹ Indigenous people face intrinsic discrimination, which comes in addition to other social determinants of health such as low socioeconomic status, increased unemployment, gender discrimination, and ageism. For instance, Indigenous people (particularly those living on reserve) have a lower rate of completing high school than non-Indigenous people, which is then associated with higher chances of unemployment,¹⁰ which can then negatively influence their health.

Intersectionality was particularly well shown in the data from WorkSafeBC (the Workers’ Compensation Board of British Columbia). Their study showed that the injury rates associated with being Indigenous were reduced—but still existing—when adjusted for other factors such as age, gender, and geographical area, which showed that Indigenous people face adverse effects from various determinants of health in addition to being Indigenous. For example, one study showed that Indigenous women aged 50 years and older have a higher risk of injury than other Indigenous people.¹² Occupational health issues can cumulate with environmental health issues for Indigenous people. Exposures might not be limited to work settings, and in some circumstances, industrial pollution might be a source of occupational exposure for workers that continue to be exposed in their dwellings, as the pollution goes beyond the borders of the workplace.

From an occupational health perspective, the fact that Indigenous people are more likely to be self-employed than the Canadian average means that fewer Indigenous people are covered by a workers’ compensation board, with reduced benefits in case of a disease or injury related to work. The increase of distance-learning opportunities might offer more possibilities for Indigenous people to get higher skilled, higher paid positions than were

| Data | Possible implications for occupational health professionals |
|------|----------------------------------------------------------|
| **Employment and unemployment rates** | Indigenous people might have an increased need to stay employed despite health issues; there might be risks related to both occupational exposures and ageing, they might not be covered for workers’ compensation |
| **Education and training** | Reduced possibilities of professional promotion, which might prolong the exposure to occupational hazards by staying in low hierarchical levels, and the feeling of injustice |
| **Nature of employment** | Exposure to typical occupational hazards in these industries; increased risk of staying in low hierarchical levels, which comes with an increased risk of occupational hazards in these industries and a possible feeling of injustice |
| **Mining** | Internal psychological conflicts linked to working for a business sector that is contributing to land dispossession and pollution; risk of disruption of the work-life balance by the impact of the industry on the Indigenous people’s lands; occupational exposures are in addition to environmental exposures |
| **Food** | Possibility of cumulated occupational and environmental exposures |
| **Substance use and addictive behaviours** | Need for an analysis of addictive behaviours in Indigenous people adjusted for socioeconomic factors, risk of stigmatisation and perpetuation of stereotypes |
| **Chronic diseases** | Indigenous people with chronic disease might need to retire later in life than non-Indigenous people; they need to have access to the appropriate financial support |
| **Psychological safety** | Indigenous workers experience additional psychosocial hazards at workplaces, specific to their status |
| **Workers’ compensation** | The amount of injuries might be mitigated by the socioeconomic status of Indigenous workers; Indigenous people might face institutional barriers, and they might require specific assistance in reaching out to workers’ compensation boards |

Table 2: Summary of main findings and possible implications for occupational health practitioners
available before, which might also help to reduce exposure to physical, chemical, and biological hazards. The higher prevalence of type 2 diabetes in Indigenous people, especially in Métis, than in the general Canadian population could possibly lead to an increased risk of excluding them from safety-sensitive positions due to the potential risk of hypoglycaemia.

There are several studies that have shown that Indigenous workers face psychosocial hazards at the workplace that are in addition to general psychosocial hazards encountered by any worker.

First, Indigenous workers encounter increased amounts of racism, discrimination, harassment, and stigmatisation. These prejudices are not surprising, and they are supported by existing findings. Demeaning stereotypes are still perpetuated in workplaces. We hypothesise that the effect could be multiplicative; a poor psychosocial climate in the workplace might trigger more demeaning comments unrelated to the work performed by Indigenous workers. Consequently, they would experience both the poor psychosocial climate and an increased number of specific psychosocial exposures, which can be made worse because of the overall psychosocial climate.

Second, there are specificities pertaining to the work–life balance of Indigenous workers. The situation faced by miners illustrates the intertwined challenges of obtaining a job, which might be associated with Indigenous land dispossession and environmental pollution. Indigenous workers in this situation are likely to have—both at the workplace and at home—an intrapsychic conflict of obtaining a salary from a company that might contribute to land pollution and dispossession. We can parallel this situation with those of workers exposed to important occupational risks in exchange for high-paying employment opportunities. In research done with nuclear workers in France, some retirees diagnosed with work-related cancers were reluctant to criticise their former company for failing to protect their health. It is possible that Indigenous people might have similar behaviours, leading to conflicts imported from the workplace, and the work contract in particular, to their home (and vice versa).

One way to reduce work-related psychosocial issues specific to Indigenous people is to associate the issues to the work, considering their culture. For instance, psychosocial issues can be mitigated in mining industries when Indigenous communities are associated with signatory mining projects, or by addressing cultural differences and empowering the workers. A typical way companies have chosen to address cultural differences is to have all employees go through mandatory e-learning or in-class training sessions. Among the six reasons why companies are using e-learning, listed by Welsh and colleagues in a highly cited paper on this topic (ie, provide consistent worldwide training, reduce delivery cycle time, increase learner convenience, reduce information overload, improve tracking, and reduce expenses), none are about improving working conditions. The use of e-learning services is somewhat similar to the management of psychosocial risks: by providing some top-to-bottom training sessions to raise awareness on psychosocial risks, some employers feel that they have completely and definitely fulfilled their obligations. In doing so, they are transferring the responsibility for psychosocial issues in the workplace from the employer to the employees; if psychosocial risks remain once the workers are trained to manage them, the company could blame the workers for not applying the principles they had been taught, and relinquish itself of any responsibility. A similar strategy might be being used by employers of Indigenous people. By having their workers go through mandatory e-learning or training sessions on psychosocial risks, employers feel that they can transfer the responsibility of arranging a safe psychosocial working climate to the workers, dismissing other psychosocial factors that are out of the workers’ hands (eg, workload, or unequal participation of all workers in decision making). These methods beg the question as to whether a workplace can be durably improved with such cosmetic training modules.

Although there is some research available related to psychosocial hazards faced by Indigenous workers, research on some main topics in occupational medicine, such as occupational cancers or musculoskeletal disorders, is scarce. Additionally, we did not find a lot of data published by workers’ compensation boards on Indigenous workers’ occupational diseases and injuries. The 2017–19 Association of Workers’ Compensation Boards of Canada report does not include any information on Indigenous status, as such information is not collected by all workers’ compensation boards. Further research might include linkage between data from workers’ compensation boards and provincial medical registry and vital statistics, as completed in British Columbia.

Recent data from 2021 published by CAREX Canada showed that rates of occupational exposure to asbestos in the three territories were among the highest in Canada. In 2016, exposure to asbestos occurred in 290 per 10 000 workers in Nunavut, 247 per 10 000 in Yukon, and 191 per 10 000 in the Northwest Territories, compared with the federal mean of 129 workers exposed per 10 000 workers. Meanwhile, the proportion of people identifying themselves as belonging to at least one Indigenous group is the highest in the three territories (86% in Nunavut, 23% in Yukon, and 51% in the Northwest Territories) according to the 2016 Canadian census data. However, these differences need to be statistically adjusted depending on the nature of industries, and it is very likely that such differences will be reduced after such adjustment. These disparities might illustrate the cumulation of several risk factors for
Indigenous workers. Assessing occupational exposures in the three territories might be a convenient proxy to assess the specificities of exposures for Indigenous workers.

Our Review has some limitations, partly because the scope of occupational health is broad. Our aim was to describe the current state of what has been studied so far, and what has not been studied. As we said earlier, the usual topics in occupational health were not aligned with the main topics that we retrieved in our research. The methodology of a narrative review was the best fit for this initial investigation into the challenges faced by Indigenous people with regards to occupational health. However, given that this Review was a first assessment of this topic, the choice of keywords was very broad (appendix). Although we did not identify many studies on occupational cancers or musculoskeletal disorders, it might be useful to do subsequent research with a narrower scope and more specific keywords targeting these topics. Further studies on data provided by workers' compensation boards for Indigenous and non-Indigenous people might be interesting, as well as qualitative studies on the difficulties encountered by Indigenous people trying to access workers' compensation. Further studies on the empowerment of Indigenous workers might also provide some useful insight for preventing psychosocial risks in workplaces. Additional investigation into the cumulation of environmental and occupational exposures (such as with polychlorobiphenyls) might also help improve prevention strategies. Finally, the scope of our Review was about Indigenous people in Canada, but it might be interesting to compare our findings with further research in occupational health issues for Indigenous people living in other areas in the world.

Conclusion

To our knowledge, this narrative review is the first attempt to describe the specificities of occupational health issues encountered by Indigenous workers. For many Indigenous people, workplaces are sites where they encounter discrimination, bias, and culturally unsafe conditions that can impact their wellbeing and life beyond the workplace. However, Indigenous workers are not only experiencing psychosocial risks and mental health issues at the workplace, they might also accumulate environmental and occupational exposure to chemicals produced by industries that have settled on their lands. It seems that empowerment of Indigenous people in workplaces, with initiatives such as signatory industrial projects, could be beneficial to their occupational health.

Contributors

QD-M and JL wrote the original draft. QD-M did the conceptualisation, funding acquisition, methodology, project administration, supervision, and reviewed and edited the draft. JL did the data collection, and reviewed and edited the draft. All authors had full access to all the data in the study and had final responsibility for the decision to submit for publication.

Declaration of interests

QD-M reports grants from the section of Occupational Medicine, Alberta Medical Association, during the conduct of this study. JL and JW declare no competing interests.

Acknowledgments

Section of Occupational Medicine, Alberta Medical Association, and University of Alberta, Division of Preventive Medicine and Department of Medicine Startup Funding helped to fund this narrative review. The funders had no role in the study design, data collection, data analysis, data interpretation, writing of the report and decision to submit the paper for publication. Allison Sivak helped with designing the research strategy.

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