

Cannabis use by workers before and after legalization in Canada

On October 17, 2018, the recreational (non-medical) use of cannabis was legalized in Canada. This change was enacted after calls for a public health approach to cannabis use had been growing over many years. It made Canada only the second country in the world (after Uruguay) to legalize the production, distribution, sale and use of cannabis for non-medical purposes among adults. The change followed the 2001 legalization of cannabis for medical use.

In the lead up to legalization of recreational cannabis, managers and business owners across the country had many questions about the potential implications of this unprecedented change for workplaces. While cannabis use in the general population had been increasing over 30-years prior to legalization (Rottermann, 2018), employers wondered if, after legalization, they should expect to see more workers using cannabis at work? How would they know whether a worker was impaired? Would legalization mean more mistakes and safety incidents and less productivity at work? Should they respond to at-work cannabis use differently depending on whether the use was for medical or recreational reasons—and how would they be able to tell the difference?

Despite these concerns, little was known about the extent to which workers in Canada were already using cannabis, including at work, and the impact of such use. Nor was much known about these questions in other comparable jurisdictions. Beyond questions about patterns of use, there was also an absence of data on modifiable factors that may influence at-work cannabis use post-legalization—factors such as risk perceptions and social norms. In light of such research gaps, the Institute for Work & Health (IWH) embarked on two research projects on the topic of cannabis and the workplace, both led by IWH Scientist Dr. Nancy Carnide.

The first project, which involved surveying workers across Canada, set out to explore:

- changes in cannabis consumption habits among workers;
- changes in their perceptions about such consumption; and
- associations between cannabis consumption and occupational injury risks.

KEY MESSAGES

- Following the 2018 legalization of non-medical use of cannabis in Canada, the prevalence of use of cannabis in the past year by a sample of Canadian workers increased steadily—from 30 per cent pre-legalization to 45 per cent in 2021. Daily or near-daily use by these workers also rose in prevalence—from seven per cent pre-legalization to 14 per cent in 2021.
- Between 2018 and 2021, the prevalence of workplace cannabis use—that is, use at, during or within two hours before work—did not change. Workplace use was reported by about one in 10 workers.
- Workplace cannabis use was found to be associated with a two-fold increase in the risk of a work-related injury. No such association was found for the use of cannabis outside of work. Rather than considering any cannabis use as an occupational safety risk, these analyses suggest that employers need to focus their policies and practices on use that is likely to lead to impairment at work.
- Both before and after legalization, over 11 per cent of workers in the sample believed that there was no or slight risk to using cannabis within two hours before safety-sensitive work.
- Workplaces should consider the broader context of substance use among workers (not just cannabis), including the need for education of workers about the potential risks of substance use (including workplace use), cultivating a supportive environment that encourages workers to come forward should they be impaired and addressing aspects of the work environment that contribute to substance use.

The second project, which relied on a survey of workers with accepted workers' compensation claims in Ontario, looked at the use of cannabis to treat symptoms in the aftermath of a work-related injury/illness.



This Issue Briefing provides an overview of the data collected, the findings from the two projects and the potential implications of this research for employers and policy-makers.

What information was collected?

In the first project, an IWH research team led by Dr. Carnide conducted yearly surveys of Canadian workers. The first survey took place in 2018, four months before legalization and the second was held in 2019, nine to 11 months post-legalization. The third and fourth surveys were conducted in 2020 and 2021, respectively.

Study participants included workers from across the country and in various occupations and industries, and who were employed at least 15 hours per week in workplaces with five or more employees. The samples included 2,014 respondents in the first survey, 4,101 in the second, 4,177 in the third, and 4,406 in the fourth.

Respondents were asked a number of questions about cannabis use, including:

- their lifetime use of cannabis;
- frequency of cannabis use in the past year;
- frequency of cannabis use within two hours before work, during work, during breaks, and at the end of a work day at the workplace (workplace use);
- reasons for using cannabis; and
- perceptions regarding risks of workplace use.

Data were also collected on participants' demographic characteristics, characteristics of their work (e.g., job permanence, hours worked per week, job tenure, whether the worker had a supervisory role, and a measure of participation in hazardous work tasks) and characteristics of the workplace (e.g., industry, workplace size).

The second project focused specifically on workers who had experienced a work-related physical injury or illness resulting in one or more days of lost time compensated by the Workplace Safety and Insurance Board (WSIB) in Ontario. This project drew data from a cohort of workers with accepted workers' compensation claims as part of the Ontario Life After Work Injury Study led by Dr. Cameron Mustard. Participants (a sample of 1,196) were interviewed 18 or 36 months after their injury/illness. Questions asked included past-year cannabis use, whether the worker regularly used cannabis before the work-related injury or illness, and whether they started using cannabis because of their work-related condition. Participants were also asked about their health status and pain levels and the impact of cannabis use on their physical and mental health.

Key findings

Cannabis use by Canadian workers before and after legalization

In the first two surveys conducted in 2018 and 2019, the proportion of workers who had used cannabis in the previous year increased from 30.4 per cent among workers surveyed four months before legalization to 39.3 per cent among workers surveyed nine to 11 months after legalization (Carnide et al., 2022). Over subsequent waves of the survey, the research team found a steady increase in use. By 2021, the proportion of workers surveyed who reported past-year cannabis use rose to 45.2 per cent (Carnide, 2024).

The rise in past-year use corresponded with a decline in the proportion of workers who reported use in the more distant past (i.e., those who said the last time they used was more than one year ago). This group fell from 40.4 per cent pre-legalization to 33.0 per cent in 2019. This finding suggested that legalization may have prompted people who used cannabis in the distant past to try cannabis again.

Daily use or near-daily use also increased from 7.0 per cent pre-legalization to 8.0 per cent after legalization, a statistically significant but modest change. By 2021, daily or near-daily cannabis use rose to 13.9 per cent (Carnide, 2024).

Use of cannabis before or at work

There was no change in workers' consumption of cannabis before or at work in the early period following legalization. Between 2018 and 2019, the prevalence of study participants who said they used before and/or at work remained stable at approximately nine per cent. This proportion remained stable across subsequent waves of the survey.

Dr. Carnide's team also examined the factors associated with workplace and non-workplace cannabis use (Carnide et al., 2021), using data from the first survey. Several personal factors—including younger age, lower socioeconomic status, and use of cigarettes and alcohol—were associated with both workplace and non-workplace cannabis use.

Workers with less visible jobs and less restrictive workplace smoking policies were more likely to report use cannabis before or at work. On the other hand, having a supervisor who was perceived as skilled at identifying use or impairment was linked to a lower likelihood of workplace use. These findings supported the idea that workplace social controls, especially those that increase the chance of detection, can influence at-work consumption.

There were also some unexpected findings. For example, workers in a supervisory role, as well as workers in safety-sensitive positions, were more likely to report workplace use. It may be that supervisors, by virtue of their position, perceived there to be fewer opportunities for detection or were using

cannabis to cope with the stress of the job. The higher odds of cannabis use by workers in safety-sensitive jobs may reflect both the use of cannabis by workers to cope with pain and stress in industries that are often physically demanding (such as construction and manufacturing) and the social acceptability of cannabis use in those industrial settings (especially construction).

Cannabis use and the risk of workplace injuries

During the lead-up towards legalization, the main concern for workplaces was the potential impact on work outcomes, particularly on safety. However, there was no consistent or robust evidence to support the association between cannabis use by workers and the risk of workplace injury (Biasutti et al, 2020). Prior studies failed to examine cannabis-related impairment or cannabis use in close proximity to work, and few studies showed clear evidence that cannabis use preceded the injury.

To examine the relationship between cannabis use and subsequent risk of work-related injury, the IWH team focused on 2,745 individuals who had taken part in at least two adjacent surveys between 2018 and 2020 (Carnide et al., 2023). By looking at responses from the same person over time, Carnide et al. were able to see whether respondents reported cannabis use before they reported a work-related injury.

Overall, 11.3 per cent of workers in the sample experienced a workplace injury, but the risk of injury was different for those who used cannabis at work and those who did not. When compared to those who did not use cannabis in the past year, the risk of workplace injury for those who reported workplace use over the past year (specifically including use during a shift or up to two hours before) was two-fold higher (a risk ratio of 1.97). In contrast, for workers who used cannabis in the past year but not before or at work, the injury risk was not statistically different from that of workers who did not use cannabis in the past year.

These results underscore the importance of distinguishing cannabis use at work and off work when examining the link with injury risk. Rather than considering any cannabis use as an occupational safety risk, this finding suggests that workplaces need to reframe their focus on use that is likely to lead to impairment at work.

It is important to note that the term cannabis encompasses a wide array of products with various potencies and methods of consumption (inhalation, edibles, etc.), which result in different magnitudes and durations of impairment. The study could not identify whether the risk of injury differed according to the type of cannabis used or manner in which it was consumed. Future research should assess the effects of different cannabis product formulations and methods of consumption on risk of workplace injury.

It is also noteworthy that some workers downplay the risk of cannabis use at work. The first two of the IWH surveys of Canadian workers regarding cannabis examined perceptions

regarding risks of workplace use. Among the findings was that, both before and after legalization, over 11 per cent of workers in the sample believed that there was no or slight risk to using cannabis within two hours before safety-sensitive work; another four to five per cent said they were not sure about this risk. This points to a potential unmet need for education about such risk.

Reasons for use of cannabis by workers

Carnide and her team also examined reasons for using cannabis among the working population (Carnide et al., 2024). Among the sample recruited in 2018 before legalization, the team examined the responses of 589 participants who reported using cannabis in the past year.

The most common reasons for using were: relaxation (59.3 per cent), enjoyment (47.2 per cent), social reasons (35.3 per cent), coping with stress, anxiety, and depression (35.1 per cent), medical reasons (30.9 per cent), and sleep (29.9 per cent). Almost 40 per cent of the sample reported a work-related reason for using cannabis, with coping and relaxation the most commonly reported as being work-related. These findings support those of prior qualitative studies that found some workers report using cannabis to detach from work-related concerns, cope with work stress, and relax at the end of the workday (Osborne and Fogel 2008; Hathaway 1997).

Study participants with work-related reasons for using cannabis reported more frequent cannabis use. Also, more than half of these participants reported using cannabis before and/or at work, compared to only 13 per cent of participants who did not have work-related motives. This finding suggested that workers who were motivated to use cannabis for reasons related to their work may be transferring that use to the workplace to support or manage aspects of their working life.

Cannabis use by Ontario workers after a workers' compensation claim

In recognition that a sizable proportion of workers use cannabis for medical or coping reasons and that workers' compensation organizations have been developing policies on medical cannabis for injured workers, an IWH team, again led by Dr. Carnide, examined cannabis use among workers who experienced a work-related physical injury or illness resulting in one or more days of lost time compensated by the Workplace Safety and Insurance Board (WSIB) in Ontario.

Respondents were interviewed 18 and 36 months after they made a workers' compensation claim for a work-related physical injury or illness. In the sample of 1,196 participants, most workers surveyed (72.6 per cent) reported that they had not used cannabis at all in the last year. An additional 13.3 per cent said they used cannabis for reasons unrelated to their work-related condition, and 14.1 per cent said they used cannabis to treat their work-related condition (Carnide et al., 2023).

Compared to injured/ill workers who used cannabis for reasons unrelated to their work-related condition, the injured/ill workers who used cannabis to treat their work-related conditions were more likely to report:

- using cannabis daily;
- using cannabis that does not make them high;
- having started using cannabis because of their condition;
- using cannabis for a mix of medical and non-medical purposes, with pain, sleep, and mental health most frequently cited as medical reasons;
- being able to decrease their use of prescription medications and alcohol in the past year as a result of their cannabis use; and
- experiencing beneficial impact of cannabis use on their physical and mental health.

Compared to all other workers in the study, injured/ill workers who used cannabis to treat their work-related conditions were more likely to report:

- experiencing financial difficulties and longer workers' compensation claim durations;
- not working, or no longer working with the employer where they experienced their injury/illness;
- currently receiving health care for their condition;
- experiencing quite a bit or extreme pain interference, and greater pain intensity due to their work-related condition; and
- experiencing poor general health, greater psychological distress, and sleep difficulties.

Among those using cannabis for their work-related condition, two-thirds (67.3 per cent) did so without receiving guidance on therapeutic cannabis use from a health-care provider.

A separate study (Mustard et al., 2024) drew on the same cohort in Ontario to probe further whether the use of cannabis by injured workers helped in their recovery. The study examined two markers of recovery: (1) the amount spent by the WSIB on health services and (2) the amount spent by the WSIB to replace lost earnings when an injured worker is off work (wage replacement benefits).

The study found that injured workers who used cannabis for the treatment of their work-related condition had similar wage replacement benefit expenditures and higher health-care benefit expenditures compared to injured workers who did not use cannabis. Injured workers who used cannabis for reasons other than to treat their work-related conditions (that is, for recreation or for medical reasons unrelated to the work injury) had lower wage replacement benefit expenditures and equivalent health-care benefit expenditures compared to injured workers who did not use cannabis. This mix of findings suggested neither harm nor significant benefit was associated with cannabis use after injury.

Implications

There are a number of study findings that point to key issues for employers, policy-makers and health-care providers to consider.

Overall use of cannabis

Findings from this body of IWH research show that about one in seven Canadian workers is using cannabis on a daily or near-daily basis, including for therapeutic purposes, and that the use of cannabis has steadily increased among the general working population in Canada.

- ⇒ It is important for employers to recognize that, in a legalized environment, a certain proportion of workers are going to use cannabis and that zero-tolerance workplace policies that prohibit all use (including outside of work) may be overly broad for many occupations and industries. Almost 40 per cent of workers who used cannabis reported a work-related motivation for using cannabis, with coping and relaxation the most commonly reported as being work-related.
- ⇒ This suggests that employers may need to address aspects of the work environment that contribute to substance use.

Among injured workers using cannabis for their work-related condition, two-thirds did not receive guidance on therapeutic cannabis use from a health-care provider.

- ⇒ These findings suggest health-care providers caring for injured workers should be aware these workers may be using cannabis to treat the symptoms of their injuries and be prepared to discuss the potential benefits and risks associated with their use of cannabis.
- ⇒ These findings also highlight the need for workplaces to establish policies and accommodations necessary to ensure the safety of workers who use cannabis with a medical authorization.

Workplace use of cannabis

IWH research found no post-legalization increase in self-reported cannabis use during or before work. Despite this stability, the fact that one in 10 workers reported workplace cannabis use is noteworthy given the two-fold increase in injury risks associated with workplace use (but not for other cannabis use).

- ⇒ These findings underscore the importance of distinguishing cannabis use at work from cannabis use off work. Rather than considering any cannabis use as an occupational safety risk, workplaces need to reframe their focus on use that is likely to lead to impairment at work and craft policies that centre on preventing and managing impairment, as well as fitness for duty.
- ⇒ Workplaces should also cultivate an environment that encourages workers to come forward should they be impaired.

Both before and after legalization, more than one in 10 workers believed there was no or only a slight risk to using cannabis within two hours before safety-sensitive work. Supervisors and those in safety sensitive positions were also more likely to report workplace use of cannabis.

⇒ Employers should consider educating workers, particularly those in safety-sensitive positions, about the risks of impairment associated with cannabis use before or at work.

Having a supervisor who was perceived as skilled at identifying use or impairment was linked to lower likelihood of workplace use by workers, while being less visible to others on the job was associated with a greater likelihood of workplace use.

⇒ These findings suggest that implementing workplace social controls, especially those that increase the chance of detection, such as supervisor training, may mitigate at-work consumption.

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Issue Briefing is published by the Institute for Work & Health, and is available on our website at: www.iwh.on.ca/plain-language-summaries

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