CARMHA CENTRE FOR APPLIED RESEARCH IN MENTAL HEALTH AND ADDICTION

CONSTRUCTION SAFETY & SUBSTANCE USE:
BLUEPRINT FOR ACTION IN BC

BCCSA

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Acknowledgement and Preamble

The Blueprint Project was sponsored by the British Columbia Construction Safety Alliance and was actively facilitated by Board members and their networks. The topic of substance use is sensitive and the project was made possible by candid industry wide involvement. Leaders with responsibilities throughout BC's construction sector provided insights and advice, including 35 who served as formal Key Informants. Over six hundred workers representing diverse roles, regions, and demographics provided details of their experiences involving their own substance use and use by others that they work with. Despite the remarkable diversity within the BC construction sector there was consensus on areas to be improved and sources of strengths and resilience that could be usefully built on. The project's team members are grateful for the opportunity to learn important insights and offer empirically-supported recommendations intended to further improve safety and wellbeing within one of BC's most vital and rapidly evolving sectors.

Introduction and Background

Background & Current State of Knowledge

The construction sector is a vital part of British Columbia's economy, employing nearly 240,000 people across the province in 2021. Strong demand for new workers is expected through 2029, with several industry roles ranked among the top 15 trades in terms of projected job openings over the next decade (Government of BC, n.d.).

Construction is known as a high-risk sector for workplace-related injuries, diseases and fatalities. Falls, being caught between and/or struck by objects, and electrocution make up approximately 70% of construction-related fatalities and are known as "the Fatal Four" (Albert et al., 2020). Other inherent dangers include repetitive strenuous work tasks (Antwi-Afari et al., 2017), use of heavy machinery and dangerous tools (Bhole, 2016), and prolonged exposure to various agents with toxic properties (Burstyn et al., 2000; van Broekhuizen et al., 2011).

Rates of serious injuries and work-related death claims are higher in the construction industry than among all other sectors in BC (e.g., manufacturing, utilities, agriculture and fishing, forestry and logging, etc.). The incidence of reported injuries in the BC construction sector rose steadily from 136,579 in 2010 to 158,184 in 2019, and 354 work-related death claims were filed during the same period (WorkSafe BC, n.d.). Higher prevalence of violent and accidental deaths including homicides, suicides, and poisonings has also been documented among construction workers (Lipscomb et al., 2000; Sun et al., 1997; Wang et al., 1999). Observers have implicated stereotypically masculine workplace norms as contributors to elevated risks in the construction industry, including the expectation that workers accept hazardous working conditions, ignore signs of poor health or injury and avoid help-seeking behaviour (Hanna et al., 2020).

A recent systematic review of factors leading to workplace-related harms worldwide highlighted the role of avoidable risk-taking behaviours and lapses in safety supervision in the construction trades specifically (Dodoo & Al-Samarraie, 2021). Long working hours, organizational pressures and substance use were identified as particularly problematic in the US and Canada. A well-established literature describes a strong association between construction work and alcohol and other drug use, with consistently higher rates of use among construction tradespeople when compared to the national average (Chapman et al., 2021; Pidd Ken, Duraisingam Vinita, Trifonoff Allan, 2017). A 2019 study based on data from the American Survey on Drug Use and Health found that construction and extraction workers were significantly more likely to report past-month marijuana, cocaine and non-prescription opioid use when compared to other occupational groups (Ompad et al., 2019). Alcohol and use among construction workers is associated with impaired safety and cognition, lost productivity, absenteeism and employee turnover, cost overruns and legal issues, workplace-related accidents, injuries and fatalities, and occupational mortality (Biggs & Williamson, 2013; Olbina et al., 2011)

Research conducted with construction workers suggests that awareness and perceptions of work-related risks can be incongruent with self-reported health behaviours, including frequency of alcohol use and quantity consumed (Strickland et al., 2017) and workplace availability (Chapman et al., 2021). A 2016 survey conducted by Alberta Health Services found that construction workers were nearly twice as likely to report that alcohol and other drug use had a moderate or extremely serious impact on their coworkers' performance, despite also reporting higher than average use of illicit drugs and harmful or hazardous use of alcohol (Alberta Health Services, 2016). A similar gap between risky alcohol and other drug use and perceived dangers to workplace safety was identified among Australian (Roche et al., 2020) and Portuguese (Arezes, 2011) construction workers. Male construction workers under the age of 25 were significantly less likely to perceive the use of cannabis or cocaine before or during work as posing a high risk to workplace safety (Roche et al., 2021).

A recently published study based on survey data from nearly 8,000 American construction workers showed that 10% of respondents reported using pharmaceutical opioids. Use was most strongly related to occupational injuries (Dong et al., 2020). Significant associations with non-work-related variables, including insurance coverage, have also been demonstrated. A national report for the US Centre for Construction Research and Training found that the percentage of workers prescribed opioids was slightly *lower* than among those employed in other industries. This may be due to the finding that construction workers were less likely to have health insurance when compared to employees in other major occupational groups (Dong, XS., Brooks, R., Cain, 2019). Occupational characteristics including working conditions and job control were significantly correlated with opioid use disorder (Choi, 2020).

While prescription opioid use may be an important contributor to excess mortality in the sector, the published findings suggest that socioeconomic determinants and other occupational characteristics are likely important drivers of alcohol and other drug risks in the construction trades.

Within the broad category of alcohol and other drug use, harms related to alcohol are dominant (Bonomo et al., 2019), including when compared to heroin (Lee & Forsythe, 2011). Alcohol use remains one of the leading causes of accidents, disease and death worldwide (World Health Organization, n.d.) and research conducted in western nations demonstrates that construction workers are at high risk for alcohol-related morbidity and mortality (Kaila-Kangas et al., 2016).

Results from the American Survey on Drug Use and Health (2008-2012) indicate that the highest annual rates of heavy alcohol use were associated with the mining and construction sectors. Heavy alcohol use among full time construction workers (16.5%) was nearly twice the overall rate (8.7%) among full-time employees in 19 industry groupings (Bush, Donna M, Lipari, 2015). Frequent binge drinking has also been described in the construction trades (Barnes & Brown, 2013). Drinking among construction workers has been associated with accidents (Macedo & Silva, 2005), fatal and non-fatal injuries sustained in and outside the workplace (Lipscomb et al., 2000), cirrhosis of the liver (Leigh & Jiang, 1993), violent and aggressive behaviour (du Plessis et al., 2013) and bullying (Ross et al., 2021).

While the prevalence and social costs associated with alcohol use vastly exceed those associated with the use of opioids, alcohol misuse and related disorders have received relatively little public health attention. This is especially concerning given strong evidence that concurrent use of alcohol and other drugs significantly increases the risk of fatal poisoning and hepatic death (Bogdanowicz et al., 2015). The well-established role of chronic pain in this dynamic, implicating the use of alcohol, cannabis, and other drugs (Witkiewitz & Vowles, 2018) is particularly relevant in the construction industry.

Deaths attributable to alcohol and other drug-related poisonings, chronic effects of substance use (e.g., liver disease) and suicide are collectively known as "deaths of despair", and have steadily increased since the mid-1950s, with a sharp increase since 2000 (Case & Deaton, 2015). Mortality rates attributed to deaths of despair in the construction sector are among the highest of all occupational categories in census industry data (Hawkins et al., 2020). Thought to reflect the effects of psychological stress associated with growing social-economic inequality, social breakdown and economic instability, they occur disproportionately in occupational groups characterized by higher levels of job insecurity, work-related injuries and illness, and temporary work arrangements (Applebaum et al., 2019; Hawkins et al., 2020; Martin et al., 2020). Socio-demographic factors (age, sex, ethnicity, education) and psychosocially poor working conditions including few opportunities for promotion, non-unionized work environments, and social isolation also contribute to the risk of deaths of despair among construction workers (Heller et al., 2007).

There is an urgent need to address alcohol and other drug use and related harms in the construction sector; an industry that some have described as having a "complacent attitude" towards alcohol and other drug policy development (Flannery et al., 2021). Despite accident and injury rates among the highest across all employment sectors, strategies to mitigate the risk of alcohol and other drug-related harms are not frequently implemented within the industry. Results of a large survey published in 2016 found that only half (51%) of US construction companies had a formal policy on alcohol and other drug use, while 28% had employee assistance programs and 21% used drug testing (Waehrer et al., 2016). Little research *specific to the construction industry* addresses the impact of these interventions, and empirical evidence of their effectiveness is mixed (Deria & Lee, 2020).

Rationale for the Blueprint Project

The purpose of the current study is to address important gaps in our understanding of alcohol and other drug use in the BC construction industry and to build on existing peer-reviewed literature. Extant research has largely been conducted in the US, yielding findings that do not necessarily generalize to the Canadian context. Studies conducted in Canada and the UK are limited by small sample sizes or a focus on single companies (e.g., Flannery et al., 2021; Meister, 2018). A substantial majority of studies have limited their investigations to describing the prevalence of alcohol and other drug use and its impact at the overall industry level.

Robust empirical research is needed to identify the modifiable causes and risk factors associated with alcohol and other drug misuse among construction workers. The diversity of

roles and professions, worker profiles, occupational characteristics, and work environments that comprise the sector has been largely overlooked in existing literature. This significant omission obscures meaningful variability of alcohol and other drug use-related risks and harms in the industry. Effective mitigation strategies designed to address modifiable risk factors and reduce harms necessitate the collection and analysis of comprehensive, individual-level data.

The current study aimed to identify priority areas of alcohol and other drug use-related risk throughout the BC construction sector and the extent to which these differ according to previously identified factors including occupational demands, characteristics and settings, socio-demographic profiles, and geographic regions. The findings are intended to inform evidence-based, practical interventions and effective policy strategies as a Blueprint for Action in BC.

Project Objectives

With a focus on the BC construction sector, the project aimed to:

1. **Generate** empirical evidence addressing the harms, and risks to health and safety associated with alcohol and other drug use.
2. **Identify** factors that are meaningfully associated with heterogeneity of alcohol and other drug-related risks including individual, occupational and work setting-related factors.
3. **Assess the relevance of** modifiable alcohol and other drug-related factors identified through research.
4. **Identify** occupational factors, industry-specific dynamics and individual characteristics that are most modifiable.
5. **Develop** recommendations, including interventions, to reduce risks and costs associated with alcohol and other drug use.
6. **Describe** the scope for improvements to workplace health and safety, quality of the work environment, and costs associated with employee turnover, absenteeism and accidents.

Methods

Design

The current study used a sequential mixed method design. Research questions were developed following a literature review and examination of findings produced by previous initiatives investigating substance use in the construction sector. Peer-reviewed and grey literature (e.g., industry reports) were included in the examined materials.

A key informant interview script and an online employee survey were developed by the research team in consultation with the BCCSA Board.

The Key Informant (KI) interview script was prepared to guide structured consultations with KIs responsible for workplace safety and successful human resource management in the BC construction industry. Questions were designed to elicit participants' perceptions of the prevalence of alcohol and other drug use; alcohol and other drug-related harms to employees and costs to business; experiences of empirically-based interventions (including workplace policies, drug testing and employee assistance programs); and insights on how best to effectively mitigate alcohol and other drug use and related risks in the workplace. Interviews were expected to take a minimum of 30 minutes.

The online survey was designed to identify individual, occupational and organizational characteristics associated with meaningful differences in alcohol and other drug use and related risks among construction workers across the province. The survey included questions about socio-demographics (i.e., age, gender, marital status, etc.), job specific factors (i.e., work setting, place of primary work place, etc.), as well as experiences, observations and opinions of alcohol and drug use and related safety risks at the workplace. Questions were based on specific components from standardized instruments (i.e., AUDIT-C[1], BARC-10[2]) and the inclusion of relevant procedures used in previous research (Bradley et al., 2007; Vilsaint et al., 2017). These were adapted and integrated where appropriate, and supplemented by questions developed specifically for the current project.

Eligibility criteria required that all participants be of legal adult status (19 years and older), and employed in the BC construction industry during the most recent 12 months, with construction work as their primary source of income. The minimum sample size for survey respondents (n=383) was derived using the number of people employed in the BC construction industry in 2020 (n=221,600; Government of BC, 2021) and a 95% confidence interval and a 5% margin of error for analyses.

An online platform was developed (using SFU Survey Monkey) for use on mobile phones and personal computers enhancing flexibility and convenience for respondents, and allowing for results to be collated. Following approval by the Research Ethics Board of Simon Fraser

[1] Alcohol Use Identification Test
[2] Brief Assessment of Recovery Capital

University, the survey was pilot tested using a convenience sample of 10 people with past or current experience in the construction sector. The survey included a brief introduction to the purpose of the study and respondents were asked to confirm their consent (online) to participate. To maximize participation and increase the response rate, individuals who completed the survey were offered a Tim Hortons© or Subway© gift card in the amount of $30.00. Personal information (i.e., name, address & phone number) was not collected due to the anonymous nature of the survey. However, email was required for receipt of the gift card. Participants who intended to receive the gift card were asked to provide the email at the end of the survey. Email was only used to process gift cards.

Analysis Plans

Key informant interview data were managed and organized by one investigator using computer assisted qualitative data analysis software (NVivo 12) (QSR International Pty Ltd. (2018). Anonymized transcripts were uploaded to NVivo and coded line by line. Initial codes were generated based on interview questions and then clustered based on recurring responses, ideas, concerns, and observations in the data. Line by line coding allowed for the emergence of potentially 'hidden' patterns that might otherwise be overlooked. Codes were regularly shared and discussed with members of the research team (who all participated in the interview process) to reduce potential bias. Codes were then clustered and used to build nested tree structures to organize emerging themes. Themes were continuously reviewed, merged and refined by the team until sufficiently developed to reach 'theoretical saturation', where all relevant themes in the data were identified.

Questionnaire-based data were analysed using descriptive statistics (counts and proportions for nominal variables and mean and standard deviation for continuous variables) to characterize the sample. Chi-square tests were used for comparisons between groups. Bivariate and Multivariable Binary Logistic Regression analyses were conducted to generate the inferential statistics (Odds ratios and 95% confidence intervals). STATA 16 was used to conduct these analyses (StataCorp. 2019.

Findings

Study Population & Recruitment

Key Informant Interviews

Semi-structured interviews were completed with (n=35) key informants from industry associations, safety officers and supervisors, union and management officials, insurers and employers from diverse workplace settings, representing all major regions of British Columbia. Key informants were identified with advice and feedback from the BCCSA Board. Interviews took place between March 2 and June 26, 2022, via online media (i.e., Zoom) to minimize any risks associated with Covid-19. All interviews were conducted by teams of two investigators.

Verbal informed consent was obtained online prior to conducting interviews, and all informants consented to interview recordings. Potentially identifying information included in quoted remarks (e.g., organizational employer) was changed or redacted to maintain confidentiality.

Worker Questionnaires

Sample recruitment was facilitated by Key Informants to promote representation from all regions of BC and across relevant levels of skill and experience. The survey was open from July 25 to Dec 31, 2022.

A demographically diverse sample of survey participants was recruited representing a range of skill levels, subtrades and work settings. The survey was initiated by 797 individuals, of whom 688 met eligibility criteria and provided consent. A total of 639 individuals provided complete responses to the survey and comprise the analysed sample.

Results From Key Informant Interviews

Key informants (KIs) represented diverse bodies within the construction sector (e.g., industrial, residential, commercial) in unionized and non-unionized environments, as well as governmental and publicly-funded organizations with shared responsibilities for the safety and wellbeing of people who work in the sector. The organizations represented are listed below.

1. ***Beedie Construction***
2. ***BELFOR Property Restoration***
3. ***Best Personnel Inc***
4. ***BC Assoc for Crane Safety***
5. ***BC Building Construction Trades Council***
6. ***BC Construction Association***
7. ***BC Government & Service Employee Union*** (now BC General Employees Union)
8. ***BC Labour Relations Board***
9. ***BC Ministry of Labour***
10. ***BC Ministry for Mental Health & Addiction***

11. ***BC Road Builders & Heavy Construction Assoc.***
12. ***BC Tradeswomen Society***
13. ***Canadian Construction Association***
14. ***Canadian Homebuilders' Assoc***
15. ***Construction Industry Rehab Plan***
16. ***Construction Labour Relations Assoc.***
17. ***Embers Staffing Solutions***
18. ***Employers Advisors' Office***
19. ***Fenestration Assoc. of BC (FEN BC)***
20. ***Homebuilders Association of Vancouver***
21. ***Independent Contractors & Businesses Association of BC***
22. ***IUOE Local 115***
23. ***JPW Earthworks***
24. ***Lacey Developments Inc.***
25. ***Lafarge/Holcim***
26. ***Lower Mainland Purpose Society for Youth & Families***
27. ***Marine Roofing***
28. ***McRae's Environmental Services Ltd.***
29. ***Technical Safety BC***
30. ***Vancouver Island Construction Association***
31. ***Western Pacific Enterprises***
32. ***Western Roofing***
33. ***WorkSafe*** *BC*
34. ***Western Canada at Ledcor Construction***
35. ***Woodbrook Aggregates***

KIs included 12 women and 23 men in senior leadership roles including CEO, President, Vice-president, and Executive Director.

Thematic Analysis Overall Structure

Six overarching categories emerged from the data and were used to organize KI statements about the BC construction sector:

1. Changes in the use of alcohol and other drugs (AOD).
2. Current AOD use.
3. Opportunities to address AOD-related safety in BC.
4. Relevant characteristics of the construction sector.
5. Experience with AOD policies.
6. Temporary labour.

Statements within each category were classified in sub-groups based on whether they referred to positive, negative, or neutral/descriptive content. The resulting categories were merged into dominant themes based on similarity.

Dominant Themes

Dominant themes were selected from among those articulated by at least ten KIs. Dominant themes and sub-themes are listed below along with the number of times they were referred to by KIs (in brackets):

A. Culture Change Regarding Alcohol and Other Drug Use (127)

- Culture in the construction sector is evolving positively/improving (51)
- Initiatives to improve culture and promote beneficial culture change (50)
- Changing culture regarding AOD use (26)

B. Experiences with Alcohol and Other Drug-related Policy (126)

- Challenges associated with drug testing (32)
- The reality of a drug-free workplace (13)
- Barriers to disclosure of AOD-related problems (22)
- Inconsistent standards (20)
- Naloxone and "met un-need" (22)
- Effective policies (17)

C. Relevant Features of the BC Construction Sector (169)

- Labour shortage (30)
- Risks inherent to construction (31)
- Pain management (24)
- Industry willingness to help and related constraints (25)
- Factors promoting disclosure (19)
- Challenges facing smaller companies (20)
- Challenges specific to labour shortage (20)

D. AOD-related Concerns in the BC Construction Sector (231)

- AOD-related risks (76)
- Onsite access to AOD (39)
- Consequences of cannabis legalization (15)
- Perceptions regarding opioid use (21)
- Absenteeism/presenteeism (12)
- BC compared to rest of Canada (48)
- Alcohol remains a concern (20)

E. Mitigation of Alcohol and other Drug-related Concerns (118)

- Practices that can be built on (34)
- Harmful stereotyping of the sector/stigma production (22)
- Messaging opportunities and obligations (13)
- The role of associations (17)
- The role of unions (32)

Dominant Themes with Exemplary Quotes[3]

A. Culture Change Regarding Alcohol and Other Drug

"You go back 20-30 years and musculoskeletal injuries were kind of in the same place as addiction is now. If you had a back injury, you just fought through it and you did the job. Now it's not seen the same way and I think, you know, hopefully, 20-30 years from now, we're saying the same thing about mental illness and substance use, where you can go into the workplace and you can have these conversations, and everyone is supportive of each other. I like to believe everyone wants to get there."

"I find that employers have very low tolerance for [onsite drug use] now. It doesn't mean they fire employees, they support them, but they have extremely low tolerance for, you know, knowing that someone may not be 100% sober on the job. With co-workers there isn't a lot of tolerance [either]. So like, you want to be fit for work. You want to be seen to be fit for work. So that if you're standing, you know, on the 30th floor with another worker and like, your safety depends on each other, you don't want anyone to think of you as a liability. And you're acutely aware of others. It becomes self-regulating. So if someone is coming to work impaired, you know, often that won't continue because people know it has serious consequences."

"I will say that, as someone who started in the industry 20, years ago, it's changed tremendously. I think that people are looking at it and saying, you know, no judgment, no stigma. You want help, no questions asked. We're going to get you that help. And I think that the guys, you know, the boots on the ground, are getting the message that somebody cares, you know? We've built a stronger safety culture, not only about directing employees to be safe, or you know, being punitive if they aren't safe. It's about personalizing safety and ensuring that employees appreciate the fact that, you know, as a company, as leaders, as management, our job is to make sure that they go home to their families at the end of the end of the day and that they can throw the ball, play the piano, be with their kids. So we've evolved from, you know, almost no safety culture to a punitive safety culture, to a personal safety culture. My hope is that it's because people feel more open and feel like there's a safe space to do that."

B. Alcohol and Other Drug-related Policy Experiences

Re. promoting the disclosure of substance use-related problems:
"We have an employee assistance program that's 100% confidential and company paid, and all our supervisors are trained on it. If you have a staff member that you think might be vulnerable to this stuff, there's nothing wrong with sticking your phone number in their lunch box and, you know, absolutely assuring them it's confidential. We put it [the program] in place probably five years ago and now it's being used so much, to the point that the company provides us money to run it."

[3] Quotes are presented verbatim with the exception of clearly labelled edits to preserve anonymity or add clarity.

Re. the AOD policy & accessing assistance/support:
“It's there and if you look at the employee handbook, it is spelled right out. You know, it's been there for 20 or maybe 30 years. For the first 20 nobody even looked at it for fear of reprisal. I think now it's much more available and people are aware that there are options and there is help. And companies have recognized this as a way of helping people.”

“We encourage our guys to call in. Just, you know, I was on a bender last night. I'm not coming in. Phil's not coming in, he's on a bender with his buddies. Done deal.”

Re. drug testing:
“If a guy smokes a joint on Friday night, he’s hooped for the next 30 days. But if he’s out there doing coke all weekend or whatever, he’s fine Monday morning, right? So people are making that conscious decision: “I want to party my face off Friday and Saturday night, but I might have a random test on Tuesday morning and I need to be ok.” These people aren't slouches, right? It's not like people who do this work all are all troglodytes. These are some highly intelligent people, and they know exactly what they're doing. Their choice of substance and pattern of use is a reflection of that intelligence.”

Naloxone:
“When they first brought out the Narcan kits and all that stuff, like we jumped on that right away. Not just us - several large general contractors went out and got trained on how to administer Narcan and all that sort of stuff, right? And how to, you know, manage opioid overdoses, but we’re not seeing overdoses on our job sites.”

Re. drug-free worksite:
“We can get really draconian drug tests and we can do all these types of things, but I don't want to work like that. I want a world that's a bit more human. And so I imagine that on the margins, there could be situations where people come in and they're hung over or halfway hung over and sort of mildly impaired and I think we should have some human tolerance to say look, take the morning off or take the day off. Come back tomorrow or whatever. So if you consider that to be a drug free worksite, then I would say yes I think it's possible.”

“Legalizing more drugs and having those discussions seems to be going beyond cannabis now. I think we're going the other direction. I think we're making it easier, more mainstream, more accepted. And as long as that's the direction it's going, the less likely we are to get to job sites that are drug free.”

Re. barriers and zero tolerance:
“So you go into the job site and in orientation you're taught that there's zero tolerance, or there's a you know a zero tolerance policy on drug or alcohol use on site. So of course, no one's going to be upfront about it.”

Barriers:
“Fear of repercussions prevents people from coming forward, you know, fear of the unknown, of what’s going to happen, and depending on what your job is, what’s going to happen now that others know. If you’re in a position of authority, even more so.”

C. Relevant Features of the BC Construction Sector

Pay-related:
“We know that in construction, if you don't work you don't get paid. So if you wake up in the morning and your back is sore, you go to work or you don't get paid. And so, there's a real reliance on pain management in the industry and, you know, sort of a ‘can do’ attitude, you know? You don't want to let your team down. If somebody is coming in that is self-medicating on opioids or Tylenol threes it’s for pain management, they're doing it so they can do their job.”

“So, in my opinion, the seasonal nature of a lot of the work in the sector is a sort of ‘below the surface’ stressor for these people. Because a lot of construction work is project based, right? And a lot of work is seasonal, right? You look at industries like concrete or roofing, and they can only work during certain times of the year or in certain weather conditions. They don't have a January to December static paycheck. It's much more common that you see a bit of a bell curve with pay, right? Because there's a lot of overtime. During periods of good weather and long daylight hours there’s a push to complete projects before things like winter break. And then things will fall off a cliff.”

“It's a bit of a trap. You know, good wages. You can have a good living. And then all of a sudden your body starts to give up on you, and now you've got a family to support so you start medicating to be able to get through your day. And that applies across all trades.”

Factors promoting disclosure:
“Being more familiar with the policy. I think if people were more familiar with the benefits package available to them, you know? It’s sort of this thing where you don’t really know about it until you use it. If I was hired 5 years ago, I wouldn’t remember it. And I think if there was a mental health or a counselling component to the benefits package – someone that people could just talk to with no repercussions – that would certainly help. Then maybe those issues would come out. Those conversations, it’s hard to come to a peer-to-peer level and say “I have an issue”, right? It’s hard to walk into the head office or HR and sit down with someone. That generally happens when someone reaches rock bottom, and they have no other recourse, or they’re caught, right?”

Risks:
“The construction industry is not just a stereotype, it is a hard place, it’s archaic. That’s probably a little bit too pejorative but I mean it is a very traditional work environment where those sort of feelings are not… or you know, people are not open to sharing their feelings.”

“There are underlying issues, whether it’s at home, whether it’s financial. Mental illness [is often a factor]. There’s usually something behind it, whether it’s a divorce or something going on in the home, or financially.”

BC v. the rest of Canada:

“I'm paying attention to what's going on out here and I think it's significant enough that it doesn't matter what's happening anywhere else. We've got a big problem.”

“I think it's hard to ignore or discount the fact that the opioid crisis seems to be concentrated in metropolitan regions with liberal social policies, right? So not to get into the weeds, but you can imagine places with things like safe injection sites and stuff like that are gonna have a more visible issue.”

“The BC construction industry operates in British Columbia, which is, you know, the province that is obviously struggling the most with drug use. Cannabis culture here is probably the most cannabis positive culture in the country.”

“Cannabis uses is many, many times, more normalized here in BC than anywhere else.”

“I think it's more acceptable to be open about your marijuana use here.”

“The BC construction industry is different from the rest of Canada. In the last, you know, 15 years, it's doubled. And so we've had an explosion of residential construction and residential construction has very low barrier entry points. So we went from less than 100,000 workers in construction to 230,000, and you know, a ton of that is residential growth, and so low barrier entry points to the workforce. Last week the government just restored compulsory trades, but BC was the only province [where] you didn't need any certification to do any construction work. So electrical, plumbing, steam fitter, pipe fitter… you didn't have to have any training at all to do that work.”

“In every other province, to be an electrician, you actually have to have a Red Seal or be an apprentice, same for pipe fitter, boiler maker... And so our industry is just a different composition of skill.”

“From my experience from Alberta, we have more robust alcohol and other drug testing. There’s a lack of want to do that in BC.”

“The majority of housing in British Columbia is actually built by companies who are constructing less than 10 homes a year, if you can believe that. And that's because we haven't got the same kind of culture as you might find in Alberta or let's say southern Ontario, where you have 80% of the homes being built by 20% of the builders and the scale and scope of their operations is huge.”

“There's more media coverage about the opioid crisis here in BC, compared to Ontario.”

D. Alcohol and Other Drug-related Challenges in the BC Construction Sector

Re. unequal access to assistance & benefits in the sector for employees in an open shop:
“You wouldn't have equal access. They wouldn't have like, their own programs to help you. Like I worked for […..] and they had so many different resources. No, I don't think they'd have equal access. You'd be left with the resources that are just public, and those resources are not that great.”

Re. consequence of the labour shortage:
“There's so much work that no one's afraid to get fired. 10-15 years ago, if they got caught, they got fired. They'd be unemployed for a period of time, right? And when their record of employment showed termination, you know, that was a black mark in our industry anyway. Now they are so empowered - and sorry, not to use a sweeping brush because there's lots of good folks that are very diligent - but those who want to cheat do so with very little regard for what the consequences are.”

Demographics:
“I think it's the nature of men. We can see this in vaccinations. And we're healthcare hesitant to begin with. We're help hesitant.”

“I think our industry is one of camaraderie and brotherhood and often they're in work sites away from home, so their entire social network is the buddies that they work with. It starts out as a few drinks and then it just grows and expands from there and becomes the only thing they have available to occupy their time. It starts out as a social thing and it gets out of hand. That's on the alcohol and on the cannabis side.”

“A lot of people on the job site don’t know how to deal with problematic substance use. And I don't want to say they don't have the intelligence because they're extraordinarily intelligent people, it's just they don't have that skill set to be able to know how to deal with it. So they use an alternative, and the alternative is probably most often alcohol, but it still ends up being a problem. It enters the home and now they’ve got a cranky home life, and it follows them back to work. And it creates the bullying and harassment and the venting that goes on at the work site, because their whole life has just become this tumultuous circle of anger and resentment that no one is helping them with.”

Drug poisonings & opioids:
“We know that people are overdosing at a much higher rate in the construction industry. It's just a thing. It's just known in the harm reduction world, right? We just sort of know that.”

“You know, anecdotally you hear that in the industry… that there's a big problem. I'll be blunt when I say it, I don't see it.”

“Opioids? Really, really not good, but I’ve never heard of anyone on opiates, and on a construction site, I know what happens. There's lots of anecdotal evidence, but just being honest, cannabis is more of an issue.”

“There is a lot of attention now in the sector in this regard. And, you know, I think I would just be a little cautious about just jumping to the conclusion that somehow construction, is like, that this is just out of control. When I look at the nature of accidents on construction sites, I’m not hearing about accidents coming from impairment. I'm not hearing about workers overdosing on site. It’s falling from heights, exposure to asbestos, shotcrete, that kind of thing.”

Alcohol:
“Alcohol – by leaps and bounds is the number one problem. First and foremost, just because it's the most common form of substance abuse. And secondly, and this is where you know, it gets potentially controversial, because it's socially acceptable.”

“You think, what do you do on a Friday afternoon? Where are we going? We're going to the pub together to celebrate; the site supervisor is going to buy a burger and a beer for everybody. Well, that acceptable. We're not going to an opium den.”

Cannabis:
“I'll never forget when legalization happened - some of the challenges that were coming across my desk. I had long-term employees walking in and saying, “Hey pot’s legal at the end of the month and I'm going to start using it again and what are you going to do about it?” kind of thing, like just really bold challenges, right?”

“Of course I've seen people using cannabis on site, and then like, operating machinery and people being mad about it and obviously there was like, a big HR investigation into it, but I don't think that is because of legalization. I think there's always just going to be someone who's doing something like that, no matter what.”

“Cannabis plays a major role, to be completely honest with you. We get a lot of calls and a lot of arguments with workers who think that cannabis is okay because it's legal now, so you can smoke it like a cigarette.”

E. Opportunities to Improve Alcohol and other Drug-related Safety

Re. the role of associations & smaller companies:
“It's been left to employers to manage this [alcohol and other drug use] and there hasn't been enough industry commitment or direction or support or whatever, right? And I think that the only way you're going to help the small to mid-level employers is to do that, right? I think we need to have a more organized industry. I think it needs to come from, you know, the Form Work Association, the Roofing Association, the Concrete Association… like we can’t really address it from a management perspective, and we can’t really deal with it at the employee level. We need somewhere in between, right? Where they connect more broadly with people who follow the same rules. Like the Concrete Pumping Association, or the Roofing Association

or the Millwork Association talking with their people and supporting them, because they understand their challenges best, you know? The Roofing Association understands the roofing contractors' labor issues and understands any drug and alcohol issues they would have. And they can push it into training for their tradespeople, right? The Roofing Association making sure it's part of the program for you know, first-year roofing apprentices, right? I think we need that level of commitment and we need those people to push it into training."

"You know, construction is very much a team environment. And just like any team, you're kind of as strong as your weakest link, and if somebody is really struggling with substance use and doesn't have the supports it almost certainly increases the risk. Associations need to be providing those smaller groups with the tools to be at the same level as the multinationals. Because at the end of day it's two things, right? It's money or resources, and its will. And I think that associations can address both of those. For the smaller producers in British Columbia, I think that should be part of our raison d'être really, to help create will amongst those local producers… If the problem is that they can't economically manage a drug and alcohol program, maybe associations can help distribute the cost and provide the structure that the small to mid-sized companies need to make it work for them, right? Because they can't do it on their own."

"You gain efficiencies of scale bringing people together. So are there ways of creating programs that smaller employers can tag to when they need it, you know? The more people you get involved in that the less cost is going to be per user. So is there a way of being able to bring together some sort of centralized program that an employer can access rather than trying to get these small employers to implement their own programs?"

"We were going to have a team bonding session - go somewhere, do a little bit of a professional development, talk and then go to a winery. And for a change, someone said, "You know what? Why do we need to go to a winery? Why don't we go do something else?" So we actually went [somewhere else]. We brought our team and we … did something that was *completely* different than what we thought we would do, instead of saying let's go and have a drink… We don't give ourselves enough options."

"Women are incredible trades people because they really want to be there. They're not plumbers and electricians because their Daddy was a plumber and electrician and they got tapped. They're willing to climb mountains of obstacles, and they need to be top of their game every day in order to survive. The whole atmosphere changes when there's women on the team. Drawing dicks on the back of trucks and other really infantile humor – it doesn't stand anymore when you've got a bunch of women around."

Messaging:
"There's a secret sauce to construction sites, it's not a traditional job where you show up on the eighth floor every day. You put up posters, sometimes in the middle of nowhere. Sometimes they've got a trailer, sometimes they don't. Every company has a way to get content to their staff, including construction companies that send a paycheck every two weeks in an envelope, if you can imagine it, along with any information that they want attached to a pay stub."

“All the messaging I see… it focuses on restrictions. Don't do this, stop doing that. What it doesn't do is say, you know, “Don't do that, but have you thought about doing this instead? Have you thought about checking this out?”

“I think we need a poster child. I think we need somebody who's gone through it, who has come through the other side.”

Unions:
“In the non-union sector there's that constant push-pull around who’s responsible for the cost [of treatment]. Employers certainly don't want to be, they would argue that it's not their responsibility, and then the employee has to cover it themselves. Within the unionized sector the programs are in place. Make sure that people are members of those unions. It's all part of an insurance program that all members pay into and everybody has access to.”

“I have seen people who are, you know, literally drinks away from death - their alcoholism is so bad - and in hospital with heart problems because of it, [who] turn their life around and get their career back on track because of these supports. I worked a brief time in the non-union sector before I got into the union sector and there was, you know, there was no support, so you were on your own. There's much more of a team mentality when a bunch of people who are local members are working together. There is that brotherhood, that sisterhood within members of the same union. And so, you know, quite often if somebody like a shop steward sees somebody and they think they might be struggling, they will go talk to them, they'll talk to the business rep and it's not like it's a true intervention, but it's like. “Hey, we’re worried about you. Are you okay? And by the way you can talk to these people if you need help.” And then, you know, you try and get them in touch with supports.”

“The unionized sector is different because there is an obligation, a responsibility that unions have to look after their members. So from an employer’s perspective, we can say “This individual had such-and-such substance on board which likely contributed to the incident. We don't want that person on our job site.” Then it goes back to the unions and they have to work with their member to address treatment, the duties and responsibilities that they have while they're getting treatment and ultimately getting them back on a work site. Every effort is made to keep that person in the industry and to get them healthy.”

“The trades are a young man’s work, you don't see too many trades persons that have started out of high school or in their early 20s still around working full-time when they're 50 without walking somewhat bent over, or a limp here and there. So, you know, what do you do when these really hard working, honest workers that have a ton of integrity and gave it their all… When their body starts to fail, how do we transition them into something else? How do we work with this so we don't have a bunch of people in their 50s struggling to try and get through? If people want to work in our industry, they could work in our industry for a lifetime; there is plenty of work to go around. I think the stereotypes that exist in construction could draw certain individuals who have a desire to make some quick cash, as a means to an end. But that's different from what we're talking about in terms of cultivating opportunities for a lifetime with a career and the skills and support that come along with being part of the trades or professionals in this industry.”

Results from Questionnaires

Sociodemographic Characteristics of the Full Sample

The full sample reflected the overall diversity of the BC Construction sector. Most respondents were men (72%). Many were either married or in common-law relationships (60%), did not identify with any religion (58%), and identified as White/Caucasian (70%) followed by Indigenous (7%) ethnicity. Five-year age groups between 19 and 64 years describe a moderate bell-shaped pattern. Half of respondents owned their homes (50%) and over one-third (37%) had children. Slightly over half of respondents (52%) had completed post-secondary training or education. Further sociodemographic details are presented in Table 1.

Table 1: Socio-demographic Characteristics (n=639)

Variable	**Total (n=639) N (%)**
Age	
19-24 years	70 (11.0)
25-34 years	165 (25.8)
35-44 year	169 (26.4)
45-54 years	137 (21.4)
55-64 years	83 (13.0)
≥65	15 (2.3)
Gender	
Woman	168 (26.3)
Man	458 (71.7)
Other	13 (2.0)
Ethnic or cultural identity	
Asian (SEA, SA, Chinese/Korean/Japanese)	80 (13.1)
Indigenous	40 (6.5)
White/Caucasian	429 (70.1)
Other	63 (10.3)
What is your level of formal education?	
Less than High school	39 (6.1)
Completed high school[4]	267 (41.8)
Completed business/trade/technical school	173 (27.1)
Completed Bachelor/graduate school	160 (25.0)
Current relationship status	
Single, never married	191 (29.9)
Common-law	134 (21.0)
Married	248 (38.8)
Widowed	7 (1.1)

[4] -Included respondents who attended Trade School/University.

Variable	Total (n=639) N (%)
Divorced	41 (6.4)
Separated	18 (2.8)
Household status	
Person living alone	115 (18.0)
Couple	178 (27.9)
Couple with children	205 (32.1)
Single parent	32 (5.0)
Adults sharing house or apartment	57 (8.9)
Living with parents	52 (8.1)
My home	
Owned	320 (50.1)
Rented	279 (43.7)
Other	40 (6.3)
Average number of working hours (per week)	
1-14 hours	13 (2.0)
15-29 hours	25 (3.9)
30-39 hours	105 (16.4)
40-49 hours	346 (54.1)
≥50 hours	150 (23.5)
Gross/pre-tax construction-related income	
Less than $20,000	25 (3.9)
$20,000-$49,999	121 (18.9)
$50,000-$74,999	191 (29.9)
$75,000-$99,999	149 (23.3)
≥$100,000	125 (19.6)
Prefer not to say	28 (4.4)
Years worked in the construction industry	
Less than 2 yrs.	105 (16.4)
2-5 yrs.	131 (20.5)
6-10 yrs.	125 (19.6)
11-20 yrs.	136 (21.3)
> 20 yrs.	142 (22.2)

Job-related Characteristics of the Full Sample

Participants identified a wide variety of job titles, with one in four (25%) working on job sites with 10 or fewer people. The regions where people worked reflect a geographic breakdown that is roughly similar to the Provincial adult population in each regional Health Authority. Over three quarters of respondents worked full time (77%) and the vast majority (82%) of those who worked part-time stated that they would accept full-time work. Most respondents worked overtime (74%) on a weekly basis (see Table 2).

Table 2: Job-related Characteristics (n=639)

Variable	**Total (n=639)** **N (%)**
Primary job title	
Labourer, general worker or helper	66 (10.3)
Equipment operator	32 (5.0)
Tradesperson	82 (12.8)
Apprentice	51 (8.0)
Office worker	48 (7.5)
Supervisor (directs others)	70 (11.0)
Manager (directs supervisors)	92 (14.4)
Field support (safety, quality control, etc.)	80 (12.5)
Electrician	25 (3.9)
Roofer	13 (2.0)
Other	80 (12.5)
Size of primary workplace	
1-10 persons	159 (24.9)
11-20 persons	98 (15.3)
21-100 persons	229 (35.8)
101-500 persons	101 (15.8)
>500 persons	33 (5.2)
Unsure/don't know	19 (3.0)
Primary work place	
Vancouver coastal health	167 (26.1) **25%**[5]
Fraser health	232 (36.3) **37%**
Island health	57 (8.9) **16%**
Interior health	144 (22.5) **16%**
Northern health	30 (4.7) **5.8%**
Out of province	9 (1.4)
Workplace setting	
Commercial & Industrial	248 (38.8)
Residential	169 (26.4)
Restoration	18 (2.8)
Renovation and demolition	25 (3.9)
Road construction and maintenance	108 (16.9)
Aggregate producer/supplier	5 (0.8)
Concrete supplier	<5
Other	64 (10.0)
If currently part-time/casual, would you accept full-time construction work?	
Yes	120 (18.8)
No	27 (4.2)

[5] Calculated from BC Population Size (2013): http://www.bccdc.ca/resource-gallery/Documents/Educational%20Materials/Epid/Other/DOAP2014Ch1.pdf

Variable	**Total (n=639)** **N (%)**
Currently working full-time	492 (77.0)
Average number of overtime hours worked per week	
None	164 (25.7)
1-5 hours	186 (29.1)
6-10 hours	148 (23.2)
11-15 hours	46 (7.2)
15-20 hours	44 (6.9)
>20 hours	44 (6.9)
Other	7 (1.1)

Nearly three quarters (74%) of respondents were not members of a union. Most respondents worked with co-workers the majority of the time (80%), and many had some supervisory responsibilities (61%). Living away from home at least 25% of the time due to work was reported by over one fifth (22%) and nearly one third (30%) were required to work an unusual or unconventional schedule (see Table 3).

Table 3: Job-specific Descriptive Factors (n=639)

Variable	**Total (n=639)** **N (%)**
Did you work as a union member?	
Yes	168 (26.3)
No	471 (73.7)
Did you work with co-workers for more than 50% of the day?	
Yes	508 (79.5)
No	131 (20.5)
Did you supervise others as part of your job?	
Yes	390 (61.0)
No	249 (39.0)
Did your work require you to live away from home 25% of the time or more?	
Yes	139 (21.8)
No	500 (78.2)
Did your work require you to work an unusual/unconventional schedule	
Yes	193 (30.2)
No	446 (69.8)

Substance Use in the Full Sample

Tables 4 and 5 present details related to the reported use of varied drugs and alcohol respectively. Among substances used by respondents in the past 12 months, the most prevalent categories were alcohol (82%), cannabis (42%), tobacco (31%), mushrooms/LSD (16%) and cocaine (9%). Use of fentanyl/heroin (<1%) was low.

One fifth of the sample (20%) used illicit drugs in the past year[6]. Substances used shortly before or at work in the past year were primarily cannabis (11%) followed by opioid pain medications (6%), stimulants (3%), and cocaine (3%). A small minority of respondents used illicit drugs shortly before or at work in the past 12 months (5%), increasing to about one in eight (13%) when cannabis use was included. See additional drug use details in Table 4.

Table 4: Substance Use Behaviors (n=639)

Variable	**Total (n=639) N (%)**
Drug use in past 12 months	
Tobacco (smoke/chew/vape)	197 (30.8)
Cannabis (flower/vape/edible)	270 (42.3)
Cocaine	57 (8.9)
Mushrooms/LSD	104 (16.3)
Meth/amphetamine	10 (1.6)
Heroin/fentanyl	<5
MDMA/Ecstasy	29 (4.5)
G-hydroxybutyric acid (GHB) or Ketamine	15 (2.3)
Stimulants	28 (4.4)
Benzodiazepines	29 (4.5)
Anabolic steroids	18 (2.8)
Opioid medications	64 (10)
Methadone or Suboxone	6 (0.9)
Non-opioid pain medications	409 (64)
Any Substance use in past 12 months[7]	
No	348 (54.5)
Yes	291 (45.5)
Any illicit drug use in past 12 months[8]	
No	509 (79.7)
Yes	130 (20.3)
Substance use shortly before or at work in past 12 months	

[6] -including: Cocaine, Mushrooms/LSD, Meth/Amphetamine, Heroin/Fentanyl, MDMA/Ecstasy & GHB/Ketamine.

[7] -included substances are: Cannabis, Cocaine, Mushrooms/LSD, Meth/Amphetamine, Heroin/Fentanyl, MDMA/Ecstasy & GHB/Ketamine.

[8] -including: Cocaine, Mushrooms/LSD, Meth/Amphetamine, Heroin/Fentanyl, MDMA/Ecstasy & GHB/Ketamine.

Variable	Total (n=639) N (%)
Tobacco (smoke/chew/vape)	165 (25.8)
Cannabis (flower/vape/edible)	69 (10.8)
Cocaine	18 (2.8)
Mushrooms/LSD	18 (2.8)
Meth/amphetamine	9 (1.4)
Heroin/fentanyl	<5
MDMA/Ecstasy	5 (0.8)
G-hydroxybutyric acid (GHB) or Ketamine	5 (0.8)
Stimulants	19 (3)
Benzodiazepines	10 (1.6)
Anabolic steroids	13 (2)
Opioid pain medications	35 (5.5)
Methadone or Suboxone	5 (0.8)
Non-opioid pain medications	333 (52.1)
Any substance use shortly before or at work in past 12 months[9]	
No	557 (87.2)
Yes	82 (12.8)
Any illicit drug use shortly before or at work in past 12 months[10]	
No	607 (95.0)
Yes	32 (5.0)

About one-fifth of respondents did not consume alcohol in the past 12 months (19%). Among those who reported any consumption of alcohol (n=521), significant proportions reported drinking four or more times per week on average (19%) and consuming six or more drinks on at least one occasion (68 %). About one third of the sample (34%) reported having six or more drinks at least once a month (see Table 5).

Table 5: Personal Alcohol Use and Frequency in Last 12 months (n=521)

Variable	Total (n=521) N (%)
Did you have a drink containing alcohol in the past 12 months?	
Yes	521 (81.5)
No	118 (18.5)

[9] -including: Cannabis, Cocaine, Mushrooms/LSD, Meth/Amphetamine, Heroin/Fentanyl, MDMA/Ecstasy & GHB/Ketamine.

[10] -including: Cocaine, Mushrooms/LSD, Meth/Amphetamine, Heroin/Fentanyl, MDMA/Ecstasy & GHB/Ketamine.

Variable	Total (n=521) N (%)
How often did you have a drink containing alcohol?	
Never	8 (1.5)
Monthly or less	133 (25.5)
Two to four times a month	155 (29.8)
Two to three times per week	125 (24.0)
≥Four times a week	100 (19.2)
How many standard drinks containing alcohol did you have on a typical day?	
1 or 2 drinks	347 (66.6)
3 or 4 drinks	117 (22.5)
5 or 6 drinks	36 (6.9)
7 to 9 drinks	15 (2.9)
≥10 drinks	6 (1.2)
How often did you have six or more drinks (standard size) on one occasion?	
Never	168 (32.2)
Less than monthly	178 (34.2)
Monthly	92 (17.7)
Weekly	74 (14.2)
Daily or almost daily	9 (1.7)

Alcohol and Drug-Related Harms

Use of alcohol and other drugs to help manage stress, anxiety or depression was common (39%). About one quarter of respondents reported feeling bad about their alcohol and other drug use in the past 12 months (26%). One in ten respondents (10%) missed at least one day of work in the past year due to alcohol and other drug use (10%) and a slightly smaller percentage (8%) reported working when they should have stayed home due to alcohol and other drug use.

Table 6: Alcohol and other Drug (AOD)-related Experiences in Last 12 Months (n=639)

Variable	Total (n=639) N (%)
Have you used AOD to help manage stress, anxiety or depression?	
Yes	251 (39.3)
No	388 (60.7))
Have you felt bad about your AOD use?	
Yes	164 (25.7)
No	475 (74.3)
Have you come to work when you should have stayed home because of AOD use?	

Variable	Total (n=639) N (%)
Yes	49 (7.7)
No	590 (92.3)
Have you been in trouble at work because of AOD use?	
Yes	9 (1.4)
No	630 (98.6)
Have you missed a day of work for reasons associated with AOD use?	
Yes	65 (10.2)
No	574 (89.8)

Most respondents reported that they had worked with someone who seemed impaired due to substance use or being "hungover" (53%), and most worked with someone who had missed time at work due to AOD use (56%). About one quarter (24%) had witnessed AOD use on site, and a similar percentage had been required to take a drug test (28%).

Table 7: Alcohol and other Drug (AOD) Use by Coworkers & Related Harm in Last 12 Months (n=639)

Variable	Total (n=639) N (%)
Has anyone you worked with seemed impaired on the job due to AOD use or being hung-over?	
Yes	336 (52.6)
No	303 (47.4
Has anyone you worked with missed a day of work due to AOD use?	
Yes	356 (55.7)
No	283 (44.3)
Did you witness any AOD use onsite?	
Yes	159 (24.9)
No	480 (75.1)
Were you or anyone you work with required to take a drug test for work-related reasons?	
Yes	176 (27.5)
No	463 (72.5)

The majority (74%) expressed concern that other people's alcohol and other drug use increased work-related risk. Nearly everyone supported the importance of a drug-free worksite (97%).

Similarly high percentages reported that occasional alcohol and other drug use onsite is a safety risk (92%), that they were uncomfortable working with someone who used alcohol and other drugs onsite (91%) and that cannabis use onsite was a safety risk (89%). Eleven respondents (2%) reported having ever administered the drug naloxone (Narcan) at work and about one in nine (12%) were aware of a drug overdose ever occurring at work.

Table 8: Perception of Risk: Co-worker Alcohol and other Drug Use (AOD) Use in Last 12 Months (n=639)

Variable	**Total (n=639) N (%)**
I am concerned that other people's AOD use on and off the job increases safety risk	
Strongly Disagree	31 (4.9)
Disagree	136 (21.3)
Agree	296 (46.3)
Strongly Agree	176 (27.5)
It is important to have a drug-free worksite	
Strongly Disagree	5 (0.8)
Disagree	16 (2.5)
Agree	190 (29.7)
Strongly Agree	428 (67.0)
Occasional AOD use onsite is a safety risk	
Strongly Disagree	28 (4.4)
Disagree	23 (3.6)
Agree	199 (31.1)
Strongly Agree	389 (60.9)
I am comfortable working with someone who uses AOD onsite	
Strongly Disagree	390 (61.0)
Disagree	190 (29.7)
Agree	48 (7.5)
Strongly Agree	11 (1.7)
Use of cannabis products (smoking, vaping or edibles) onsite is a safety risk	
Strongly Disagree	23 (3.6)
Disagree	49 (7.7)
Agree	221 (34.6)
Strongly Agree	346 (54.1)

Working while injured at any time was common (72%). Many respondents had missed days of work due to injury (45%) and were concerned that a work-related injury could restrict their future employment (51%). About one in seven respondents had ever received an opioid prescription in relation to a work-related injury (15%).

Table 9: Injuries and Pain - Lifetime (n=639)

Variable	Total (n=639) N (%)
Have you ever been prescribed opiate pain medication for a work-related injury?	
Yes	93 (14.6)
No	546 (85.4)
Have you ever missed any days of work due to a work-related injury or pain?	
Yes	290 (45.4)
No	349 (54.6)
Have you ever worked when you were injured and/or in pain?	
Yes	462 (72.3)
No	177 (27.7)
Have you ever been concerned that a work-related injury could prevent you from continuing your job?	
Yes	328 (51.3)
No	311 (48.7)

Alcohol and Drug Related Policies

One half of respondents reported that an alcohol and other drug policy applied to their work (50%). Among those who reported working under an alcohol and other drug policy (n=319), a minority reported: the policy had not been explained to them (12%); being unable or unaware how to report alcohol and other drug-related problems (36%); being unaware of available benefits or assistance that was available (26%); or not having access to benefits or assistance (16%).

Table 10: Alcohol and other Drug (AOD) Policy-Specific Questions in Last 12 Months (n=319)

Variable	Total (n=319) N (%)
In the last 12 months, was any of your work covered by an AOD policy?	
Yes	319 (49.9)
No	320 (50.1)
Was the AOD policy explained to you?	
Yes	282 (88.4)
No	37 (11.6)

Variable	Total (n=319) N (%)
Was there a zero-tolerance policy for AOD impairment at your work?	
Yes	289 (90.6)
No	11 (3.4)
Don't know	19 (6.0)
Was drug testing part of the policy?	
Yes	113 (35.4)
No	180 (56.4)
Don't know	26 (8.2)
Did the policy describe how to report potential AOD impairment?	
Yes	204 (63.9)
No	57 (17.9)
Don't know	58 (18.2)
Did your work provide access to benefits or assistance for AOD related issues	
Yes	187 (58.6)
No	50 (15.7)
Don't know	82 (25.7)
Did your work provide access to benefits or assistance for mental health-related issues	
Yes	197 (61.8)
No	50 (15.7)
Don't know	72 (22.6)

One in eight workers (12%) considered themselves to be in recovery from addiction. The vast majority (88%) reported that they were making good progress in recovery, and most (79%) credited their home "living space" as a positive contributor. Most considered their work environment as having played an important or meaningful role in the initiation of their recovery (60%) or in the maintenance of recovery (60%).

Table 11: Recovery Experiences (n=79)

Variable	Total (n=79) N (%)
Do you consider yourself to be in recovery?	
Yes	79 (12.4)
No	560 (87.6)
I am making good progress on my recovery journey	
Strongly Disagree	<5
Disagree	7 (8.9)
Agree	33 (41.8)

Variable	Total (n=79) N (%)
Strongly Agree	37 (46.8)
My living space has helped to drive my recovery journey	
Strongly Disagree	16 (20.3)
Disagree	37 (46.8)
Agree	26 (32.9)
Strongly Agree	79 (100.0)
My work community has played an important/meaningful role in initiating my recovery	
Strongly Disagree	<5
Disagree	28 (35.4)
Agree	33 (41.8)
Strongly Agree	15 (19.0)
My work community has played an important/meaningful role in maintaining my recovery	
Strongly Disagree	5 (6.3)
Disagree	26 (32.9)
Agree	33 (41.8)
Strongly Agree	15 (19.0)
Have you ever disclosed an alcohol and other drug-related problem to your employer?	
Yes	22 (27.8)
No	48 (60.8)
I am self-employed	9 (11.4)

Nearly one third (31%) reported that there was no process available at their workplace to support workers with AOD-related problems. And about half (53%) reported that their workplace acknowledges or celebrates employees who have recovered or are in recovery from addictions.

Table 12: Workplace Alcohol and other Drug (AOD) Policies, Practices & Norms: Last 12 months (n=639)

Variable	Total (n=639) N (%)
My workplace had a process to support employees seeking help for AOD-related problems	
Strongly Disagree	43 (6.7)
Disagree	152 (23.8)
Agree	347 (54.3)
Strongly Agree	97 (15.2)
My workplace acknowledged and celebrated employees in recovery from addiction	67 (10.5) 235 (36.8)

Variable	**Total (n=639) N (%)**
Strongly Disagree	298 (46.6)
Disagree	39 (6.1)
Agree	
Strongly Agree	

Integrated Multivariable Results

Statistical models are presented below focusing on: substance use at work; risky drinking; illicit drug use; recovery status.

Substance Use at Work

In multivariable comparisons the sociodemographic variables that were significantly associated with using substances shortly before of at work were: younger age; fewer years of formal education; and renting versus owning one's own home.

In bivariate comparisons several work-related factors were significantly associated with substance use at work: lack of basic conveniences; low priority placed on health and safety; poor relationships between workers and management; low level of freedom to execute work and make decisions; promotion of excellence; opportunities for advancement; and fear of losing one's job. However, when all variables were taken into account concurrently only one variable remained significant: "My work was a strain on my family life and/or personal relationships".

No significant differences were observed in relation to gender or between White and Indigenous ethnicities (please see Table A, next page).

Table A: Bivariate and Multivariable Logistic Regression Analysis to Estimate Predictors for Substance[11] Use Before or At Work Among BC Construction Workers (N=639)

Variable	Total[12] (n=639) N (%)	UOR (95% CI)	P value	AOR (95% CI)	P value
Age					
19-34 years	235 (36.8)	**4.97 [1.73,14.29]**	**0.003**	**4.09 [1.20,13.94]**	**0.024**
35-44 years	306 (47.9)	**3.23 [1.12,9.32]**	**0.030**	**2.84 [0.89,9.06]**	**0.077**
45 years or older	98 (15.3)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Gender					
Woman	168 (26.3)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Man	458 (71.7)	1.23 [0.71,2.12]	0.463	1.53 [0.82,2.85]	0.181
Other	13 (2.0)	0.65 [0.08,5.32]	0.691	0.71 [0.08,6.15]	0.758
Ethnic or cultural identity					
Asian (SEA, SA, Chinese/Korean/Japanese)	85 (13.3)	0.58 [0.25,1.31]	0.192	0.45 [0.17,1.18]	0.103
Indigenous	41 (6.4)	1.33 [0.56,3.13]	0.517	1.01 [0.38,2.67]	0.977
White/Caucasian	447 (70.0)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Other	66 (10.3)	0.89 [0.40,1.96]	0.771	0.89 [0.40,1.95]	0.766
Current level of formal education					
Less than High school	39 (6.1)	**5.48 [2.23,13.48]**	**<0.001**	**5.13 [1.95,13.46]**	**0.001**
Completed high school[13]	267 (41.8)	**1.98 [1.00,3.93]**	**0.049**	**2.14 [1.02,4.50]**	**0.044**
Completed business/trade/technical school	173 (27.1)	1.70 [0.81,3.59]	0.161	2.22 [0.95,5.21]	0.066
Completed Bachelor/graduate school	160 (25.0)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Current relationship status					
Single, never married	191 (29.9)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Common-law/married	382 (59.8)	**0.39 [0.24,0.64]**	**<0.001**	0.6 [0.33,1.11]	0.102
Other	66 (10.3)	0.54 [0.24,1.22]	0.138	0.56 [0.22,1.40]	0.214
My home					
Owned	320 (50.1)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Rented	279 (43.7)	2.83 [1.69,4.72]	**<0.001**	**2.09 [1.10,4.00]**	**0.025**
Other	40 (6.3)	2.18 [0.83,5.70]	0.114	1.08 [0.35,3.35]	0.899

AOR: Adjusted Odds Ratio; CI: Confidence Interval; UOR: Unadjusted Odds Ratio

[11] - Included substances were: Cannabis, Cocaine, Mushrooms/LSD, Meth/amphetamine, Heroin/fentanyl, MDMA/Ecstasy & GHB/Ketamine.

[12] - Total was presented as column percentage to reflect frequency.

[13] -Included partial program completion at Trade School/University.

Variable	Total[12] (n=639) N (%)	UOR (95% CI)	P value	AOR (95% CI)	P value
The worksite lacked basic conveniences (e.g., drinking water, portable toilets, etc.)					
Disagree	483 (75.6)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Agree	156 (24.4)	**1.97 [1.21,3.23]**	**0.007**	1.12 [0.61,2.04]	0.715
Health & safety were high priorities at my workplace					
Disagree	107 (16.7)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Agree	532 (83.3)	**0.39 [0.23,0.67]**	**0.001**	0.68 [0.34,1.35]	0.268
Relationships between management and employees were good at my workplace					
Disagree	98 (15.3)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Agree	541 (84.7)	**0.37 [0.22,0.63]**	**<0.001**	0.95 [0.46,1.95]	0.887
Did your work require you to work an unusual/unconventional schedule					
Yes	193 (30.2)	**1.67 [1.04,2.70]**	**0.035**	1 [1.00,1.00]	Reference
No	446 (69.8)	1 [1.00,1.00]	Reference	1.08 [0.61,1.90]	0.800
My workplace felt like a supportive community					
Disagree	141 (22.1)	**2.17 [1.32,3.58]**	**0.002**	1.02 [0.54,1.94]	0.940
Agree	498 (77.9)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
There were opportunities for career advancement at my workplace					
Disagree	174 (27.2)	**2.11 [1.31,3.41]**	**0.002**	1.7 [0.89,3.26]	0.107
Agree	465 (72.8)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Excellence was promoted at my workplace					
Disagree	164 (25.7)	**1.71 [1.04,2.80]**	**0.033**	0.77 [0.39,1.54]	0.465
Agree	475 (74.3)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
I was given enough freedom to decide how to do my work and/or make decisions at work					
Disagree	107 (16.7)	**2.54 [1.50,4.30]**	**0.001**	1.46 [0.79,2.71]	0.232
Agree	532 (83.3)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
I was worried about losing my job					
Disagree	494 (77.3)	**0.59 [0.35,0.97]**	**0.039**	0.97 [0.52,1.80]	0.931
Agree	145 (22.7)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
My work was a strain on my family life and/or personal relationships					
Disagree	386 (60.4)	**0.33 [0.20,0.53]**	**<0.001**	**0.38 [0.21,0.69]**	**0.002**
Agree	253 (39.6)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference

Risky Drinking

A standardized definition of risky drinking was derived from the Alcohol Use Disorders Identification Test (AUDIT-C). Significant sociodemographic predictors of risky drinking were: younger age; male gender; and non-Asian ethnicity.

Employment-related predictors of risky drinking in multivariable comparisons were: working with relatively few people; part-time or casual employment; work requiring an unusual/unconventional schedule; and not being worried about losing one's job (please see Table B).

Table B: Bivariate and Multivariable Logistic Regression Analysis to Estimate Predictors of Risky Drinking[14] Among BC Construction Workers (N=639)

Variable	Total[15] (n=639) N (%)	UOR (95% CI)	P value	AOR (95% CI)	P value
Age					
19-34 years	235 (36.8)	**1.63 [1.00,2.66]**	**0.051**	**2.39 [1.42,4.02]**	**0.001**
35-44 years	306 (47.9)	1.49 [0.93,2.39]	0.101	**1.87 [1.13,3.08]**	**0.015**
45 years or older	98 (15.3)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Gender					
Woman	168 (26.3)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Man	458 (71.7)	1.39 [0.97,1.99]	0.076	**1.51 [1.02,2.23]**	**0.039**
Other	13 (2.0)	0.49 [0.13,1.84]	0.289	0.56 [0.13,2.30]	0.419
Ethnic or cultural identity					
Asian (SEA, SA, Chinese/Korean/Japanese)	85 (13.3)	**0.34 [0.20,0.57]**	**<0.001**	**0.32 [0.19,0.54]**	**<0.001**
Indigenous	41 (6.4)	0.66 [0.34,1.27]	0.214	0.62 [0.30,1.27]	0.193
White/Caucasian	447 (70.0)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Other	66 (10.3)	**0.48 [0.28,0.84]**	**0.009**	**0.53 [0.30,0.93]**	**0.026**

AOR: Adjusted Odds Ratio; CI: Confidence Interval; UOR: Unadjusted Odds Ratio

[14] -Participants with a score of 4 or more on AUDIT-C questionnaire were categorized as Risky drinkers.

[15] - Total was presented as a column percentage to reflect frequency.

Variable	Total[15] (n=639) N (%)	UOR (95% CI)	P value	AOR (95% CI)	P value
Current level of formal education					
Less than High school	39 (6.1)	1.36 [0.67,2.77]	0.398	1.32 [0.60,2.94]	0.490
Completed high school[16]	267 (41.8)	**1.52 [1.02,2.28]**	**0.040**	1.39 [0.90,2.14]	0.135
Completed business/trade/technical school	173 (27.1)	1.48 [0.95,2.30]	0.082	1.23 [0.77,1.97]	0.381
Completed Bachelor/graduate school	160 (25.0)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Size of primary workplace					
1-10 persons	178 (27.9)	**1.73 [1.09,2.74]**	**0.020**	**2.03 [1.25,3.30]**	**0.004**
11-100 persons	327 (51.2)	1.47 [0.97,2.24]	0.068	1.52 [0.98,2.35]	0.062
101 persons or more	134 (21.0)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Currently working part-time or on a casual basis					
Part-time or casual	147 (23.0)	**0.64 [0.44,0.94]**	**0.024**	**0.65 [0.43,0.98]**	**0.041**
Full-time	492 (77.0)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Did your work require you to work an unusual/unconventional schedule					
Yes	193 (30.2)	**1.44 [1.02,2.02]**	**0.037**	**1.49 [1.04,2.15]**	**0.030**
No	446 (69.8)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
I was worried about losing my job					
Disagree	494 (77.3)	**1.57 [1.07,2.30]**	**0.022**	1.34 [0.87,2.06]	0.178
Agree	145 (22.7)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference

Illicit Drug Use

Use of drugs in the past 12 months was significantly associated with sociodemographic characteristics including: younger age; non-Asian ethnicity; and being single versus in a common-law relationship or being married.

Several work-related variables were significantly associated with drug use in unadjusted analyses. However only one work-related variable remained significant in multivariable comparisons (i.e., where all variables are taken into account concurrently): Not having enough freedom to decide how to perform one's work or make decision at work (please see Table C).

[16] -Included respondents who attended Trade School/University.

Table C: Bivariate and Multivariable Logistic Regression Analysis to Estimate Predictors of Illicit Drug[17] Use Among BC Construction Workers (N=639)

Variable	Total[18] (n=639) N (%)	UOR (95% CI)	P value	AOR (95% CI)	P value
Age					
19-34 years	235 (36.8)	**4.12 [1.89,8.98]**	**<0.001**	**3.79 [1.50,9.59]**	**0.005**
35-44 years	306 (47.9)	**2.69 [1.23,5.85]**	**0.013**	**2.91 [1.26,6.68]**	**0.012**
45 years or older	98 (15.3)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Gender					
Woman	168 (26.3)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Man	458 (71.7)	0.96 [0.62,1.50]	0.870	1.18 [0.71,1.98]	0.525
Other	13 (2.0)	**3.38 [1.06,10.72]**	**0.039**	**5.43 [1.46,20.17]**	**0.012**
Ethnic or cultural identity					
Asian (SEA, SA, Chinese/Korean/Japanese)	85 (13.3)	0.65 [0.35,1.23]	0.184	**0.48 [0.23,0.99]**	**0.045**
Indigenous	41 (6.4)	1.01 [0.47,2.20]	0.970	0.93 [0.39,2.22]	0.868
White/Caucasian	447 (70.0)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Other	66 (10.3)	0.72 [0.36,1.43]	0.351	0.51 [0.24,1.10]	0.085
Current level of formal education					
Less than High school	39 (6.1)	1.77 [0.79,3.97]	0.163	1.39 [0.54,3.59]	0.501
Completed high school[19]	267 (41.8)	1.2 [0.73,1.97]	0.476	1.04 [0.61,1.78]	0.878
Completed business/trade/technical school	173 (27.1)	1.1 [0.64,1.92]	0.722	1.09 [0.60,2.00]	0.78
Completed Bachelor/graduate school	160 (25.0)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Current relationship status					
Single, never married	191 (29.9)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Common-law/married	382 (59.8)	**0.34 [0.23,0.52]**	**<0.001**	**0.46 [0.28,0.77]**	**0.003**
Other	66 (10.3)	0.68 [0.36,1.29]	0.241	0.88 [0.43,1.82]	0.736
My home	320 (50.1)			1 [1.00,1.00]	Reference
Owned	279 (43.7)	1 [1.00,1.00]	Reference	1.32 [0.82,2.10]	0.250
Rented	40 (6.3)	**1.93 [1.29,2.91]**	**0.002**	1.16 [0.46,2.89]	0.757

AOR: Adjusted Odds Ratio; CI: Confidence Interval; UOR: Unadjusted Odds Ratio

[17] - Included substances were: Cocaine, Mushrooms/LSD, Meth/amphetamine, Heroin/fentanyl, MDMA/Ecstasy & GHB/Ketamine.

[18] - Total was presented as column percentage to reflect frequency.

[19] -Included respondents who attended Trade School/University.

Variable	Total[18] (n=639) N (%)	UOR (95% CI)	P value	AOR (95% CI)	P value
Other		**2.15 [1.01,4.59]**	**0.048**		
Years worked in the construction industry					
Less than 5 yrs.	236 (36.9)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
6-10 yrs.	125 (19.6)	0.82 [0.49,1.39]	0.472	0.74 [0.40,1.37]	0.332
11 yrs. or more	278 (43.5)	**0.64 [0.41,0.99]**	**0.043**	0.96 [0.52,1.79]	0.908
Primary job title					
Labourer/helper/Apprentice	117 (18.3)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Tradesperson/Electrician/roofer	120 (18.8)	1.11 [0.61,2.00]	0.735	1.65 [0.79,3.42]	0.182
Supervisor/Manager	162 (25.4)	**0.47 [0.25,0.88]**	**0.019**	0.81 [0.38,1.73]	0.582
Equipment operator/Field support	112 (17.5)	0.82 [0.44,1.54]	0.538	0.97 [0.47,1.99]	0.934
Other	128 (20.0)	0.85 [0.47,1.55]	0.595	1.38 [0.67,2.84]	0.387
The worksite lacked basic conveniences (e.g., drinking water, portable toilets, etc.)					
Disagree	483 (75.6)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Agree	156 (24.4)	**1.81 [1.19,2.76]**	**0.005**	1.35 [0.83,2.19]	0.226
My work was emotionally demanding					
Disagree	238 (37.2)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Agree	401 (62.8)	1.80 [1.18,2.76]	**0.007**	1.47 [0.91,2.36]	0.115
Relationships between management and employees were good at my workplace					
Disagree	98 (15.3)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Agree	541 (84.7)	0.55 [0.34,0.89]	**0.015**	1.27 [0.65,2.47]	0.486
Did your work require you to work an unusual/unconventional schedule					
Yes	193 (30.2)	1.74 [1.16,2.60]	**0.007**	1.25 [0.78,2.01]	0.360
No	446 (69.8)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
My workplace felt like a supportive community					
Disagree	141 (22.1)	1.98 [1.29,3.03]	**0.002**	1.29 [0.69,2.40]	0.424
Agree	498 (77.9)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Excellence was promoted at my workplace					
Disagree	164 (25.7)	**1.51 [0.99,2.31]**	**0.053**	0.88 [0.51,1.52]	0.655
Agree	475 (74.3)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
I was given enough freedom to decide how to do my work and/or make decisions at work					
Disagree	107 (16.7)	**2.36 [1.49,3.74]**	**<0.001**	**1.75 [1.02,3.01]**	**0.043**
Agree	532 (83.3)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference

Variable	Total[18] (n=639) N (%)	UOR (95% CI)	P value	AOR (95% CI)	P value
My work was a strain on my family life and/or personal relationships					
Disagree	386 (60.4)	**0.56 [0.38,0.83]**	**0.004**	0.76 [0.47,1.22]	0.252
Agree	253 (39.6)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference

AOR: Adjusted Odds Ratio; CI: Confidence Interval; UOR: Unadjusted Odds Ratio

Recovery Status

Recovery from problematic alcohol and other drug use was significantly related to having fewer years of formal education, but was not significantly associated with any other personal or work-related factors in multivariable comparisons (please see Table D).

Table D: Bivariate and Multivariable Logistic Regression analysis to estimate predictors of participants with recovery among BC construction workers (N=639)

Variable	Total[20] (n=639) N (%)	UOR (95% CI)	P value	AOR (95% CI)	P value
Age					
19-34 years	235 (36.8)	0.78 [0.38,1.59]	0.493	0.68 [0.29,1.58]	0.373
35-44 years	306 (47.9)	1.01 [0.52,1.98]	0.973	0.86 [0.40,1.85]	0.691
45 years or older	98 (15.3)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Gender					
Woman	168 (26.3)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Man	458 (71.7)	1.46 [0.82,2.61]	0.203	1.78 [0.95,3.32]	0.072
Other	13 (2.0)	1.73 [0.35,8.50]	0.501	1.76 [0.38,8.25]	0.472
Ethnic or cultural identity					
Asian (SEA, SA, Chinese/Korean/Japanese)	85 (13.3)	0.76 [0.35,1.65]	0.484	0.67 [0.27,1.68]	0.392
Indigenous	41 (6.4)	2.05 [0.93,4.52]	0.077	2.11 [0.91,4.93]	0.083
White/Caucasian	447 (70.0)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Other	66 (10.3)	1 [0.45,2.22]	0.992	0.90 [0.37,2.17]	0.809

[20] - Total was presented as column percentage to reflect frequency.

Variable	Total[20] (n=639) N (%)	UOR (95% CI)	P value	AOR (95% CI)	P value
Current level of formal education					
Less than High school	39 (6.1)	**5.65 [2.36,13.57]**	**<0.001**	**4.36 [1.72,11.05]**	**0.002**
Completed high school[21]	267 (41.8)	1.71 [0.87,3.33]	0.118	1.61 [0.80,3.23]	0.178
Completed business/trade/technical school	173 (27.1)	1.31 [0.62,2.78]	0.476	1.29 [0.59,2.80]	0.521
Completed Bachelor/graduate school	160 (25.0)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
My home					
Owned	320 (50.1)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Rented	279 (43.7)	**1.69 [1.04,2.74]**	**0.036**	1.46 [0.82,2.61]	0.203
Other	40 (6.3)	0.73 [0.21,2.50]	0.616	0.68 [0.20,2.33]	0.536
Currently working part-time or on a casual basis					
Part-time or casual	147 (23.0)	**1.66 [0.99,2.78]**	**0.053**	1.41 [0.82,2.41]	0.211
Full-time	492 (77.0)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
My work was emotionally demanding					
Disagree	238 (37.2)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Agree	401 (62.8)	**1.75 [1.03,2.96]**	**0.038**	1.6 [0.89,2.88]	0.119
I felt overworked					
Disagree	340 (53.2)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
Agree	299 (46.8)	**1.80 [1.11,2.90]**	**0.017**	1.4 [0.80,2.44]	0.242
The income from my job was enough to meet my usual monthly expenses and bills					
Disagree	180 (28.2)	**1.78 [1.09,2.91]**	**0.021**	1.6 [0.90,2.83]	0.110
Agree	459 (71.8)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference
I was worried about losing my job					
Disagree	494 (77.3)	**0.55 [0.33,0.92]**	**0.022**	0.68 [0.38,1.21]	0.192
Agree	145 (22.7)	1 [1.00,1.00]	Reference	1 [1.00,1.00]	Reference

AOR: Adjusted Odds Ratio; CI: Confidence Interval; UOR: Unadjusted Odds Ratio

[21] -Included respondents who attended Trade School/University.

Integrating Questionnaire and Key Informant Results

Evidence collected from construction workers and key informants (KIs) in British Columbia (BC) confirmed that alcohol and other drug use is regarded as a serious safety risk. Key Informants (KIs) and Province-wide workers confirmed that alcohol and cannabis were the specific substances most commonly associated with risks to safety and worker wellness.

There was a high level of agreement that actions addressing alcohol and other drug use are necessary. Nearly every worker surveyed stated that alcohol or other drugs, including cannabis, pose a safety risk and should not be used onsite. Nevertheless, workers and KIs reported gaps between the goal of preventing impairment in the workplace and current practices in BC. Most BC construction workers reported working alongside people who appeared impaired or hung-over, and one in four had witnessed alcohol and other drug use onsite. Over one in five reported that they had observed an accident or narrowly avoided an accident involving someone who appeared impaired, and one in ten reported experiencing medical problems caused by their own alcohol or other drug use.

In addition to raising concerns related to onsite safety, KIs emphasized the importance of addressing alcohol and other drug use as it relates to current and projected labour shortages in the construction sector, including projected retirements.

The project's results detail objective challenges associated with construction work including physical, emotional, and financial factors. Despite these challenges, the results also indicate considerable strengths and signs of resilience in the BC construction sector, including strengths that are relevant to reducing risks involving alcohol and other drugs.

A small proportion of workers reported using substances shortly before or at work on a weekly or daily basis, primarily involving cannabis. Use of other drugs was comparatively uncommon. For example, less than one percent of workers reported using opioids (heroin/fentanyl) shortly before or at work, and KI's reported similarly low exposure to evidence of opioid use on job sites.

Results raise concerns involving alcohol use and its relationship with worker wellness. About one in eight workers reported heavy drinking (six or more standard drinks) on a daily or weekly basis. Over one-third of workers reported consuming alcohol at least twice per week and one in four typically consumed 3 or more drinks when they drank. By contrast, a substantial minority of workers reported no alcohol consumption in the past year (19%) and one in eight workers identified as being in recovery from alcohol and other drug problems. These findings attest to the diversity of alcohol and other drug use in the construction sector and to areas associated with risk. About one-fifth of workers reported daily use of tobacco.

Results emphasized that positive changes in the safety culture related to alcohol and other drugs have been underway for many years in BC. Factors contributing to improvement include the diversification of the workforce such as the greater inclusion of women, and increasing

willingness on the part of both employers and employees to acknowledge and address challenges involving alcohol and other drug use. Respondents reported that the implementation of relevant resources has been integral to improvement. However, the successes described were characterized as benefitting workers unevenly due to heterogeneity of access to services and supports within the sector. The following recommendations incorporate the advice of KIs in order to address the reported evidence of alcohol and other drug-related risks.

Recommendations

Overarching Priority: Minimizing Risk & Promoting Wellness

The BC construction sector is increasingly professional and is in competition with other sectors for employees. The recruitment and retention of workers are positively affected by minimizing alcohol and other drug-related harms, including safety-sensitive risks as well as risks related to employee wellness. Recommendations recognize that construction work frequently and foreseeably involves the combined efforts of diverse trades, organizations, and individuals. Moreover, each worker's alcohol and other drug use affects others as well as themselves. Industry-wide approaches are necessary to ensure consistent standards AND the means to comply with those standards supporting the wellbeing and safety of workers.

The recommended actions respond to acute risks including accidents and injuries as well as chronic risks related to longer-term substance use. Practices associated with harm reduction as well as the promotion of wellness are indicated.

Clear Communication of Drug & Alcohol Policies and Objectives

The BCCSA could develop a fact sheet on the prevalence and types of alcohol and other drug use within the sector, workers' perspectives on safety related to alcohol and other drugs, and risk factors associated with alcohol and other drug use.

Careers in the Industry Should be Promoted and Supported by Trades & Associations

With coordination provided by the BCCSA, Trades and Associations within the BC construction sector could:

- Adapt evidence from the current project to provide relevant details to their respective members, including training materials and curricula; and
- Identify specific gaps within trades and associations in the availability of resources that are responsive to reducing alcohol and other drug use and related harms among workers.

Clarifying the interface with government and Increasing government support for smaller organizations

Details of alcohol and other drug-related resource gaps could be presented on a sector-wide basis to Government as a basis for partnership and support aimed at ensuring the equal availability of alcohol and other drug-related resources to all workers including 24x7 remote access to independent confidential consulting.

Complementing in-person resources, services delivered remotely may be a practical and effective means of addressing resource gaps involving the confidential assessment of alcohol and other drug use, counseling/coaching, and treatment.

Promoting Professionalization and Benefits of Certification

The BC construction sector is characterized by increasingly robust standards of certification and a high level of formal education. Norms related to alcohol and other drug use in other safety-sensitive fields (e.g., airlines, medicine) illustrate standards and practices that may be useful to emulate and disseminate within the BC construction sector, consistent with the evolution of professionalism.

Facilitating "safe" disclosure & open discussion of substance use-related problems:

Successfully encouraging workers to seek assistance for alcohol and other drug-related concerns is influenced by the availability and accessibility of relevant resources, and the implications of accessing them. As noted above, a centralized service with remote (e.g., video) access may be an effective and pragmatic way of offering high-quality professional and regulated resources to diverse subgroups of construction workers who currently lack access to supports.

Promoting safe disclosure can be further encouraged by highlighting and celebrating individual stories that illustrate successful actions taken to address alcohol and other drugs. Relevant stories can be based on the experience of workers in the BC construction sector as well as the stories of respected individuals in other sectors (e.g., sports, business, culture).

Shifting Away from a 'Drinking Culture'

The project's results indicate the likelihood of harms associated with chronic substance use, particularly involving alcohol and tobacco. KIs reported relatively recent changes in the organization of work-related social events away from settings that traditionally are associated with alcohol consumption. These changes are reinforced by the finding that a substantial minority of BC construction workers don't consume alcohol. They also reflect the finding that a significant number of workers identify as being in recovery from alcohol and other drug problems, and who also reported that their work community played an important role in the initiation and maintenance of recovery. These findings reinforce the well-established relationship between employment and reduced alcohol and other drug-related risk.

Focusing on Alcohol and other Drugs' Association with Quality of Life, Community, and Career

The forgoing recommendations address identified risks within the context of an incredibly diverse and evolving sector that is integral to life in all BC communities. Problems related to alcohol and other drugs are not restricted to job sites and can adversely affect personal, family, and community wellbeing for many years before receiving helpful attention.

By affirming and addressing the importance of alcohol and other drugs in the context of safety, the BC construction sector can also affirm support for the wellbeing of workers and their quality of life. These recommendations aim to communicate facts about substance use and establish the consistent availability of relevant supports as a basis for promoting sector-wide norms related to seeking help for oneself and in consideration of others whose safety is interdependent. However, actions to promote safety within the sector intrinsically relate to life beyond work, encouraging a more holistic view of the wellbeing of the over quarter million British Columbians that comprise the province's construction sector.

Study Limitations & Strengths

Some limitations associated with this study should be considered when interpreting the findings. Sample recruitment and selection were purposeful and non-random. All data were collected between spring and winter of 2022, and responses could differ based on season. Workers without access to the internet were unable to complete the survey with unknown impact on the generalizability of results. The use of Likert scales may introduce methodological bias by constraining response options. Existing studies indicate that anonymity does not necessarily mitigate underreporting of alcohol and drug use among survey respondents. Nevertheless, the sensitive nature of alcohol and other drug use may have increased the likelihood of desirability bias and omission of information.

Strengths of the current study include a multi-method design, large numbers of respondents, and expert-level project governance. Industry leaders confirmed the representativeness of Key Informants as well as workers, considering factors such as geographic and job-related characteristics. Finally, the robustness of the project's findings is reinforced by the convergence between results collected from different samples and using differing methods. To our knowledge the current project is the most comprehensive study to date addressing opportunities to improve alcohol and other drug-related safety and wellbeing in a large geographically-defined construction sector.

The BC construction sector is increasingly professional and is in competition with other sectors for employees. Recruitment and retention of workers are each affected by an industry norm that successfully minimizes alcohol and other drug-related harms, including safety-sensitive risks as well as risks related to employee wellness. These recommendations recognize that construction work frequently (and foreseeably) involves the combined efforts of diverse trades, organizations, and individuals. Moreover, each worker's alcohol and other drug use affects others as well as themselves. Industry-wide approaches are necessary to ensure consistent

standards AND the means to comply with those standards supporting the wellbeing and safety of workers.

The recommended actions respond to acute risks including accidents and injuries as well as chronic risks related to longer-term substance use. Practices associated with harm reduction as well as the promotion of wellness are both indicated by the project's findings.

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