DALHOUSIE UNIVERSITY

Substance use by social workers and implications for professional regulation

Journal:	*Drugs and Alcohol Today*
Manuscript ID	DAT-08-2018-0040.R1
Manuscript Type:	Research Paper
Keywords:	social worker, substance use, professional regulation, policy, conduct unbecoming, Canada

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ABSTRACT

Purpose. This study explores the prevalence and patterns of substance use among Canadian social workers. Legalisation of cannabis is forthcoming in Canada in 2018 and it is anticipated that professional regulatory bodies will be pressed to consider implications for their members.

Methodology. An online survey collected data about demographics and substance use prevalence and patterns. Statistical analysis involved pairwise comparisons, binary logistic regression models, and logistic regression models to explore correlations between substance use and demographic and work-related variables.

Findings. Among the n=489 respondents, findings indicate that past-year use of cannabis (24.1%), cocaine (4.5%), ecstasy (1.4%), amphetamines (4.3%), hallucinogens (2.4%), opioid pain relievers (21.0%), and alcohol (83.1%) are higher than the general Canadian population. Years of work experience and working night shift were significant predictors of total number of substances used in the past year. Use of a substance by a person when they were a student was highly correlated with use when they were a professional.

Discussion. Prevalence of substance use among social workers was found to be higher than the Canadian population; potential due to the anonymous nature of data collection.

Originality. This study has implications for social conceptualisations of professionalism and for decisions regarding professional regulation. Previous literature about substance use by professionals has focussed predominantly on implications for increased surveillance, monitoring, and disciplinary action. We contend that since substance use among professionals tends to be

concealed, there may be exacerbated social misconceptions about degree of risk and when it is appropriate to intervene.

Keywords: social workers, substance use, policy, professional regulation

Background

Our research was designed to explore the nature and prevalence of substance use by professionals in Canada at a historical time of legislative changes to regulation of cannabis distribution and use. This article presents the findings of a Canadian survey about prevalence of substance use in relation to factors in the work context (e.g., profession-related stressors) as reported by social workers. We define substances as all chemicals that alter brain function, affecting consciousness, mood, and perceptions. They encompass licit drugs (e.g., caffeine, alcohol, over-the-counter medication), prescribed medication (e.g., oxycodone, benzodiazepines), illicit drugs (e.g., marijuana, cocaine, MDMA), and traditional healing plants (e.g., peyote) (Kiepek & Baron, 2017) . Professionals are typically members of profession-specific societies, associations, colleges, and/or regulatory bodies, subject to codes of professional ethics or codes of conduct, and/or subject to professional licensure or accreditation.

Substance use is not conceptualised in this study as inherently problematic; rather a wide range of patterns of use were anticipated, with some patterns of use being widely accepted and condoned within the professions (Kiepek & Beagan, 2018). This research was grounded in an effort to minimise reification of assumptions that substance use poses individual or social risk, particularly among professionals who are often responsible for clients or patients.

With legalisation of marijuana forthcoming in Canada in 2018, professional regulatory bodies will be pressed to consider implications for their members. A majority of existing

research about substance use by professionals examines prevalence of use, without examining personal, professional, or contextual factors that may relate to patterns of use (Kiepek & Baron, 2017). Qualitative research about the use of substances by professionals predominantly draw participants from addiction service settings or regulatory discipline boards (Kiepek & Baron, 2017), a group likely to have already experienced discernible negative work-related outcomes. Those results may not be generalisable to the typical population of professionals who use substances.

There is little peer-reviewed evidence about use of substances by social workers. Aspects of social work set it apart from other professions, which may shape substance use experiences. As part of professional socialisation, Canadian social workers are taught to be "social justice professionals" (Canadian Association of Social Workers, n.d.-a). There are dual expectations that social workers will foster a "positive image of the profession" (Canadian Association of Social Workers, n.d.-b) among the public while guiding "policy makers to understand the impact of policy on social justice" (CASW Stat Plan). Social workers simultaneously uphold social values and images of what it means to be a professional, while working to critique social policies that function to create inequality and disadvantages. Conforming to social ideals of professionalism while critiquing underlying values and systems that shape ideals and expectations may impact choices about substance use, perhaps contributing to practices that are less constrained by conventional values and norms.

Professionals are often expected to 'bracket' or set aside their personal values, beliefs and experiences in order to be professionally 'objective' and value-free. However, lived experience of diverse life events is understood to draw individuals to the field of social work and enrich their work as professionals (Gilbert & Stickley, 2012; Goldberg, Hadas-Lidor, & Karnieli-Miller,

2014; Newcomb, Burton, & Edwards, 2017). Social work education entails extensive and rigorous acquisition of knowledge and skills, but lived experience of struggles such as poverty, violence, mental health issues, addictions, and so on may help social workers to achieve deeper connections with clients and deeper understanding of their issues, potentially facilitating more empathic responses (Gilbert & Stickley, 2012; Newcomb et al., 2017). Canadian social work programs also have a reputation for more inclusive affirmative action and equity admission policies than other professions, which may make it more appealing for those who have backgrounds (e.g., familial) and experiences typically under-represented in the professions.

Substance use is hypothesised to serve as a form of self-medication or self-management in response to stressors (Lillibridge, Cox, & Cross, 2002; Merlo, Singhakant, Cummings, & Cottler, 2013) and mental illness (Bravo, Pearson, & Henson, 2017; Brière, Rohde, Seeley, Klein, & Lewinsohn, 2014; Hogarth & Hardy, 2018). Social workers may be subject to high stress, particularly given the likelihood of working with clients who experience trauma or crisis. Compassion fatigue may result from intensively supporting others and witnessing sometimes devastating outcomes (Bourassa, 2012; Wagaman, Geiger, Shockley, & Segal, 2015). Information about personal substance use or mental health among social workers is scarce, though previous research indicates high prevalence of distress and mental health symptoms. One study found that 47% of social workers in England and Wales received scores indicating a potential psychological disorder using the General Health Questionnaire (GHQ-12) (Evans et al., 2006).

Among the professions in general, research has shown mixed results regarding relationships between stressors and substance use. While some studies have found no or weak correlations (Jex et al., 1992; Maddux, Hoppe, & Costello, 1986; Watts & Short, 1990; Watts et

al., 1991), others have shown weak negative correlations, suggesting substances may provide effective means to manage these stresses (Newbury-Birch, Lowry, & Kamali, 2002; Newbury-Birch, Walshaw, & Kamali, 2001).

Methodology

Recruitment

Recruitment was targeted at Canadian social workers, occupational therapists, lawyer, and accountants. Advertising differed between organisations, resulting in higher response rates from social workers and therefore the analysis was conducted specific to social workers. To participate in this online survey study, respondents had to be a professional, reside in Canada, and be 19-years or older. Previous or current use of psychoactive substances was not an inclusion criterion. A recruitment notice was emailed to all members of the Canadian Association of Social Workers (CASW; n=18,801) once during Social Work month in 2017. Given financial costs associated with advertising, contact was limited to once. The CASW email list is comprised of members who are or were social workers in Canada and may include few inactive or duplicate accounts. All social workers who join a provincial or territorial social work organisation, with the exception of Ontario and Quebec, are automatically affiliated with the CASW. In British Columbia membership is optional. Social workers in Ontario and Quebec are offered individual memberships, as the CASW is not in partnership with another organisation in those provinces and therefore membership numbers are low, despite these provinces having a high number of social workers relative to other provinces [personal communication with CASW]. In Alberta, membership in the CASW is mandatory and there are relatively more social workers in this province compared to other provinces.

5,251 members opened the email, 2,737 clicked through to the survey website, and 504 started the survey. Fifteen people completed the demographics, but did not provide information about substance use, so were removed from the analysis. It appeared that some people may have completed the demographics, and started a new survey at a later time. Of the 5,251 people who opened the email, 9.3% (n=489) engaged in the survey. While the number of responses is sufficient to power the analyses, there is no way to know how response bias may affect the representativeness of the sample, and therefore generalisability of results. This is not an unusual response rate for an external survey (Fan & Yan, 2010)

Instrumentation

The survey was designed using Opinio software and posted online for approximately 5 months. The instrument was pilot tested with a group of undergraduate research trainees and professional colleagues who completed the entire survey and provided feedback. The finalised survey consisted of three sections, i) demographics and substances used; ii) effects of substances; iii) health indicators (Patient Health Questionnaire [PHQ-9] and Generalized Anxiety Disorder Assessment [GAD-7]). The length of time to complete the survey depended on the number of substances the respondent had ever used. It would take a minimum of 8-minutes, plus an estimated additional 2-minutes per substance. The types of effects documents have been reported elsewhere (Kiepek, Beagan, & Harris, 2018) , and were categorised as *feeling* (25 emotion-related changes), *bodily changes* (12 physiological-related changes), *thinking* (10 cognition-related changes), and *doing/performance* (21 changes related to engagement, performance, or experience of activities). Relationships between substance use and mental health as indicated by the GAD-7 and the PHQ-9 are also reported elsewhere (submitted manuscript). Here we report

on the patterns of use in relation to work context and demographics, particularly highlighting workplace stressors.

Data Analysis

In the first phase of the analysis, independent variables likely to be predictive of substance use were identified, based on current literature. A series of pairwise comparisons was conducted to identify highly-correlated pairs of predictors (Pearson's correlation coefficient >0.50). The predictor that was of least interest theoretically was removed. A strong correlation between work experience and age range ($r=0.778$; $p<0.01$) was identified; therefore, age range was removed from subsequent analysis. The resultant list of predictor variables included Province, Work Experience, Hours Worked, Total Working Hours, Night Shift, and Crisis Response. To avoid small cell sizes, some response categories were collapsed. Provinces were grouped as Atlantic (NS, NB, PEI, NLFD/Labrador), Alberta, and Other. Hours worked per week, and total hours worked (paid and unpaid work) were collapsed into tertiles.

A series of binary logistic regression models were used to investigate the relationship between the predictors and past-year use of substances. Substances were categorised as prescribed substances (antidepressants, antihistamines, barbiturates, buprenorphine, Ritalin), hallucinogens (ecstasy, GHB, ketamine, khat, LSD, psilocybin, MDMA, peyote), licit substances (alcohol, caffeine, tobacco), illicit substances (amphetamines, cannabis, cocaine, ecstasy, LSD, psilocybin, melatonin, mescaline, MDMA, methamphetamine, heroin), stimulants (amphetamines, caffeine, cocaine, methamphetamine, tobacco), and depressants (alcohol, benzodiazepines, cannabis, sedatives, sleeping medications, Gravol [dimenhydrinate]).

For each categorical predictor with more than two levels, the most frequently-reported level was chosen as the indicator level. Contrasts were made against this indicator level. For

example, for the predictor "Province," the majority of respondents were from Alberta, so this was chosen as the indicator level, against which comparisons were made for the purpose of calculating odds ratios. Similarly, for work experience the comparison level was 20+ years of experience; for hours worked, the comparison level was 27-44 hours; for total working hours, the comparison level was 42-69 hours.

A series of logistic regression models were used to generate odds ratios for each substance as a function of specialisation (Hughes et al. 1999). Finally, in order to explore whether any demographics or work patterns predicted total number of substances used in the past year, multiple linear regression was conducted with the aforementioned independent variables [province, years of work experience, night shift, crisis response, hours worked per week, and total productive (paid and unpaid) hours per week].

Findings

Respondents

The greatest number of respondents (41%) were from the province of Alberta, with an additional 24% coming from the Atlantic provinces (see Table 1). Few respondents worked in the remaining provinces and territories, two of which (i.e., Ontario, British Columbia) have large populations and large professional bodies. Ages ranged from 19 years to over 70, with age evenly distributed through the three categories. Years of work experience was bimodally distributed with 37% having 0-9 years' experience (collapsing categories of 0-4 and 5-9) and 33% having 20+ years' experience.

Specialisations were entered as an open-ended response, coded by the first author, and classified into 7 subgroups according similar scopes of practice (see Table 2). Small cell sizes

were avoided to enhance the power of analyses (Joos et al., 2012). Of those who reported area of practice, most worked in mental health and addictions as well as child protection.

Table 1: Province of residence, age range and years of experience

Province	**Number of respondents**	**Percent of respondents**
Nunavut	0	n/a
Northwest Territories	1	0.2
Yukon	2	0.4
Newfoundland/Labrador	52	10.6
Nova Scotia	30	6.1
Prince Edward Island	1	0.2
New Brunswick	33	6.7
Quebec	1	0.2
Ontario	10	2.0
Manitoba	82	16.8
Saskatchewan	35	7.2
Alberta	199	40.7
British Columbia	43	8.8
TOTAL	489	100

Age range	**Number of respondents**	**Percent of respondents**
19-24	10	2.0
25-29	64	13.1
30-34	67	13.7
35-39	69	14.1
40-44	68	13.9
45-49	38	7.8
50-54	47	9.6
55-59	54	11.0
60-54	37	7.6
65-69	25	5.1
70+	10	2.0
TOTAL	489	100

Years of experience	**Number of respondents**	**Percent of respondents**
<5	92	18.9
5-9	102	20.9
10-14	75	15.3
15-19	60	12.3
20+	160	32.7
TOTAL	489	100

n=489, margin of error for a 95% confidence interval (population 18,801) is +/- 4.37

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Table 2: Specialisation

	Number of respondents	Percent of all respondents	Percent of respondents reporting speciality[1]
Child protection	68	13.9	20.5
Mental health and addictions	114	23.3	34.4
Community (school, employment, disability)	35	7.2	10.6
Geriatrics	22	4.5	6.6
Trauma, domestic violence	22	4.5	6.6
Clinical and medical	40	8.2	12.1
Counselling (incl. sexuality; family)	30	6.1	9.1
Other or not reported	158	32.5	

[1] Excludes responses of 'other' and 'no answer.'

Most respondents did not work night shifts (89.6%), while most did respond to crisis situations (74.4%). Some people were retired, so hours of paid work ranged from 0-84 hours per week (mean: 36.54; median: 37.5). When asked about how many hours were worked per week, including paid and non-paid work, this increased to 4-168 hours (mean: 55.40; median: 50.75). For respondents who replied to the number of hours of unpaid work with statements such as "all other hours" or "all hours except when I'm sleeping," 74 hours were added to the number of paid hours reported, allowing for 6 hours sleep per night.

Substance use and predictors

A wide variety of substances were reported as ever used by respondents (see Table 3). In further analysis, past-year use is the sum of "past 30-days" and "past year, not past 30-days."

Caffeine and alcohol were the most prevalent substances ever used, followed in descending order of frequency by pain suppressants, antihistamines, cannabis, Gravol and codeine. The top four were also most frequently reported for the previous 30 days, with the

addition of anti-depressants. Some substances were used in the past but not in the year prior to the survey, with tobacco, cannabis and Gravol topping the list, followed by codeine, antihistamines and magic mushrooms.

Table 3: Past substance use (percent of respondents)

	Ever	Past year	Past 30-days
Alcohol*	97.1	83.1	71
Caffeine*	96.1	92.5	89
Pain suppressants*	78.7	56.6	42.1
Antihistamine*	75.3	46.4	21.7
Cannabis*	68.7	24.1	14.5
Tobacco*	65.5	19.8	13.5
Gravol*	64.4	19.8	13.5
Codeine*	63.2	21	10.4
Anti-depressants*	44.8	24.6	21.7
Melatonin*	43.1	22.3	10.2
Sleeping medications*	42.7	23.7	15.3
Benzodiazepines*	38.2	18.4	9.2
Magic mushrooms (psilocybin)*	30.3	2.4	0.8
Morphine	21.5	4.7	0.8
Nicotine Replacement Therapy*	19.6	5.4	2.7
Cocaine*	18.6	4.5	1.2
LSD*	17.4	1.6	0.8
Ecstasy*	14.3	1.4	0.4
Amphetamines*	14.1	4.3	3.1
Oxycodone	13.3	4.1	1.4
MDMA*	11.7	2	1
Ritalin	7	1.6	0.8
Barbiturates	6.7	0.8	0.6
Methamphetamine	6.3	0.9	0.5
Solvents	5.7	1.8	1.6
Mescaline	5.3	0.2	0
Alkyl nitrite	4.9	1.8	1
Hydrocodone	4.5	1.8	0.2
Adderall	4.1	1.4	0.8
Fentanyl	3.7	1.6	0.6
GHB	3.3	0.8	0.6

Ketamine	3.1	0.8	0.2
Anabolic steroids	2.5	1	0.4
Heroin	2.5	0.4	0.2
Peyote	1.8	0	0
Buprenorphine	1.6	0.6	0.6
Ayahuasca	1	0.2	0
Methadone	1	0	0
Khat	0.6	0.2	0
Suboxone	0.4	0	0

Note: The substances indicated with * were used by 10% or more of respondents and are used in subsequent comparison analyses.

Few substances that were listed in the survey were inaccurately reported by participants in the category of "other" and each only once or twice (hashish, crack cocaine, steroids, psilocybin, melatonin, regular Tylenol, codeine). Some substances reported as "other" were not included on the survey (e.g., mephedrone, anti-psychotics, Demerol, dexadrine, dilaudid, PCP, muscle relaxer, salvia X4, nitrous oxide, DMT). Each was only noted once or twice, and these are not included in the statistical analyses.

Analysis of substance use and demographic factors

To explore whether any demographics or work patterns predicted total number of substances used in the past year, multiple linear regression was conducted with the independent variables. Only years of work experience (beta = -.384 t= -4.293 $p < 0.001$) and working night shift (beta = 1.017 t = 2.322 p =0.021) were significant predictors of total number of substances used in the past year. For each additional 5-year increment of work experience, the number of substances used in the previous year decreased by an average of 0.384.

Individual substances

To investigate relationships between the independent variables and past-year use of individual substances, binary logistic regression models were fitted separately for each substances whose past-year use was reported by 20 or more participants [alcohol, amphetamines, antidepressants, antihistamines, benzodiazepines, caffeine, cannabis, cocaine, melatonin, nicotine replacement therapy (NRT), codeine, morphine, oxycodone, pain medications, sleeping medications, tobacco and Gravol]. Findings are reported in Table 4.

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Table 4: Binary logistic regression analysis of past-year substance use and independent variables

Past-year substance use	Independent variables collectively	Province	Years of work experience	Night shift	Crisis response	Hours worked per week	Total productive (paid and unpaid) hours per week
Alcohol	p=0.193						
Amphetamines	p=0.289						
Antidepressants	p=0.641						
Antihistamines	p=0.172						
Benzodiazepines	p=0.005[a]		p=0.002 [a]				
Caffeine	p=0.310						
Cannabis	p<0.001 [a]		p<0.001 [a]				
Cocaine[b]	p=0.001 [a]						
Gravol	p=0.028 [a]			p=0.019 [a]			
Melatonin	p=0.015 [a]	p=0.038 [a]		p=0.001 [a]			
NRT	p=0.391						
Codeine	p=0.603						
Morphine	p=0.853						
Oxycodone	p=0.935						
Pain medications	p=0.512						
Sleeping medications	p=0.839			p=0.036 [a]			
Tobacco	p<0.001 [a]		p=0.008 [a]				
Prescription medications	p=0.008 [a]		p=0.005 [a]				
Hallucinogens[b]	p=0.015 [a]						
Licit substances	p=0.351						
Illicit substances	p<0.001 [a]		p=0.002 [a]	p=0.013 [a]			
Stimulants	p=0.461						
Depressants	p=0.420						

[a] Indicates significant relationship
[b] Indicates the model was significant, but none of the individual predictors were significant.

In the analysis of past-year substance use, the model was not significant for alcohol, amphetamine, antidepressants, antihistamines, caffeine, codeine, cocaine use, morphine, NRT, oxycodone, or pain medication.

The model was significant for benzodiazepine use (p=0.005). Work experience emerged as a significant predictor of past-year use (p=0.002). As compared to respondents with 20+ years of experience (reference level), the odds of having used benzodiazepines in the past year were

more than 2 times greater for respondents with less than five years of experience, and 3.4 times greater for those with 5-9 or 10-14 years of experience.. Those with 15-19 years of work experience reported benzodiazepine use similar to those with 20+ years' work experience.

The model was also significant for past-year cannabis use ($p<0.001$). Work experience emerging as a significant predictor ($p<0.001$). As compared to those with 20+ years of experience (reference level), the odds of having used cannabis in the past year were more than 6 times greater for respondents with less than five years of experience, 4.5 times greater for those who had 5-9 years' experience and 2.9 times greater for those with 10-14 years' experience. Respondents with 15-19 years of work experience reported past-year cannabis use similar to the reference group.

For past-year melatonin use, the model was also significant ($p=0.015$). The odds of having used melatonin in the past year were 2.687 times greater for respondents who worked night shift than for those who did not work night shift ($p=0.001$). As compared to respondents from Alberta, the odds of having used melatonin in the past year were 0.456 times greater for respondents from the Atlantic provinces ($p=0.014$).

For past-year sleeping medication use, the model was not significant but night shift itself was a significant predictor, with the odds of having used sleeping medications in the past year being almost twice as high for those who worked night shift as those who did not ($p=0.036$).

The model was significant for past-year Gravol use ($p=0.028$), with the odds of having used Gravol in the past year being 2.1 times as great for those working night shift as for those who did not work night shift ($p=0.019$).

For past-year tobacco use, the model was significant ($p<0.001$) with work experience ($p<0.001$) emerging as a significant predictor. As compared to those with 20+ years of

experience, the odds of having used tobacco in the past year were 2.8 times greater for respondents with less than five years experience, and 3.1 times greater for those with 5-9 years of experience($p \leq 0.005$). Other experience levels reported use similar to the reference group.

Categories of substances

The regression model was tested as a predictor of past-year use of categories of substance (listed above). The model was not significant for stimulants, licit substances, or depressants. It was significant for past-year hallucinogen use ($p=0.015$), but none of the individual predictors reached significance.

The model was significant for past-year prescription medication use ($p=0.008$), with work experience emerging as a significant predictor. While other groups reported similar use to the reference group, those with 5-9 and 10-14 years' work experience had 1.9 and 2.7 times greater odds respectively of reporting prescription drug use in the past year ($p \leq 0.02$). No other predictors reached statistical significance.

The model was also significant for past-year use of illicit substances ($p<0.001$), with work experience a predictor. The two groups with least work experience had odds 2.5 and 2.1 times greater (respectively) to report illicit substance use ($p \leq 0.002$); other groups reported patterns of use similar to those in the reference group. Those who worked night shift had odds 2.2 times greater ($p=0.013$) than those who did not work night shift to report illicit substance use.

Patterns of substance use

To further explore patterns of use, follow up questions were asked about each substance a person reported having ever used. Not all respondents who reported using a substance completed the follow up questions.

Some substances were reported to only have been used once or twice in a lifetime, such as khat, mescaline, methadone, peyote, and GHB. This was also true for ecstasy and magic mushrooms, though use 3-9 times in a lifetime was somewhat more common. Some substances were reported by almost all respondents as having been used more than 10 times in a lifetime, including caffeine, alcohol, tobacco, anti-depressants, buprenorphine, pain suppressants, and antihistamines. Frequency of lifetime use for other substances ranged fairly evenly across categories (1-2 times, 3-9 times, 10+ times). For example, amphetamines, benzodiazepine, cocaine and Ritalin were all reported by about a third of respondents in each category.

Of those who used substances that require a prescription (see Table 5), methadone, anti-depressants and opioids were routinely reported as being used as prescribed (100%, 96%, and 84%). Cannabis was almost always (92%) used *without* prescription. Benzodiazepine and buprenorphine were typically (~75%) used as prescribed, while Adderall, amphetamines and Ritalin were most commonly used without prescription or in ways not prescribed.

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Table5: Substance use as prescribed (% of those who reported ever having used)

	I use this substance only as prescribed	I sometimes use this substance in ways other than prescribed to me	This substance is not prescribed to me
Adderall	23.5	17.7	58.8
Anabolic steroids	57.1		42.9
Amphetamine	22.0	19.5	58.5
Anti-depressant	95.6	1.3	3.1
Antihistamine	48.5	9.1	42.4
Barbiturates	46.1	15.4	38.5
Benzodiazepine	76.1	7.2	16.7
Buprenorphine	75.0		25.0
Cannabis	2.2	5.6	92.2
Opioids (heroin, hydrocodone, morphine, oxycodone, fentanyl)	84.4	4.1	11.5
Methadone	100.0		
Pain suppressants	59.8	6.1	34.1
Ritalin	38.9	11.1	50.0
Sleeping medications	62.7	9.9	27.4
Suboxone	Not reported		
Gravol	37.5	5.2	57.3

Note: This was a forced answer question. Shaded items can be obtained without prescription.

For some substances, respondents were equally likely to report use as a professional as when they were students (Table 6). These tended to be substances used by few respondents (see Table 3 above). Other substances were less likely to be used by respondents when working as professionals, compared to when they were students, particularly opioids, ecstasy, methamphetamine, amphetamine, barbiturates, LSD, and magic mushrooms.

In contrast, several substances showed increased likelihood of use when respondents were professionals than when they were students, including most of the substances with greatest reported use. Some substances showed only slight increases, such as cannabis, MDMA, alcohol, caffeine and cocaine. Others saw markedly higher rates of use among practicing social workers, including melatonin and sleep aids, anti-depressants, and benzodiazepine.

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Use of a substance by a person when they were a student was highly correlated with use when they were a professional, as outlined in Table 6. This table indicates the correlation between use of a substance by a person when they are a student and use when they are a professional. Included in this table an indication of how many times more likely it is that a person reported use of a substance when they are a professional if they used when they were a student, compared to those who did not use as a student.

Table 6: Correlation between use as student and use as professional*

Substance	Number of times more likely to use, if used as student
Cocaine	91
Alcohol	47
Pain suppressants	46
Tobacco	37
Caffeine	29
Amphetamines	12
Cannabis	12
Gravol	12
Antidepressants	10
Sleeping medications	8
NRT	7
Antihistamines	6
Melatonin	4

* all correlations significant at $p<0.001$

Discussion

Substance use among Canadian social workers

This population of social workers generally reported high prevalence of substance use compared to the general Canadian population according to the Canadian Tobacco, Alcohol and Drugs Survey (CTADS) 2015, a telephone survey that included 15,154 respondents (Government of Canada, 2017). The study findings are compared in Table 6. In general, our study participants reported at least double the rates of past-year, except for alcohol, which was only 6% higher.

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Table 7: Prevalence of past-year substance use compared with national report

	Our results %	CTADS results %
Cannabis	24.1	12
Cocaine[1]	4.5	1.2
Ecstasy/MDMA[2]	2.0	0.7
Amphetamines[3]	4.3	0.2
Hallucinogens[4]	2.4	0.6
Opioids[5]	21	13
Alcohol	83.1	77

[1] Cocaine use reported by our participants. Cocaine or crack in the CTADS study.
[2] Ecstasy and MDMA reported by our participants. Ecstasy use in the CTADS study.
[3] Amphetamine use reported by our participants. Speed or amphetamines in the CTADS study.
[4] Psilocybin (magic mushrooms) reported as most prevalent hallucinogen by our participants. Hallucinogens reported collectively in the CTADS study.
[5] Codeine reported as most prevalent opioid pain reliever by our participants. Opioid pain relievers reported collectively in the CTADS study.

Differences in prevalence might be related to the method of data collection, with our study being an anonymous online survey. There is a possibility of respondent bias in our study, where the deliberate stance of not assuming any use is problematic might have appealed more to individuals who use substances. Alternatively, it is possible that social workers might use more than the general population. There is little anonymous research available about substance use by the general population or other professions in Canada to inform our interpretation of the reported prevalence.

When considering substances that were used at different rates when respondents were professional students compared to rates of use when respondents were professionals, it is important to consider generational, role, and historical factors. For instance, barbiturates and LSD were more commonly used when respondents were students than when they were professionals. It may be that a substance like LSD, which is often used for experimentation, is more likely used when people are younger. Barbiturates were more commonly prescribed and used in previous decades, and are likely simply less available today. Since respondents were of diverse ages, there are multiple factors influencing differences. The higher rates of using sleep

aids, anti-depressants, and benzodiazepines as professionals might be related to a shift toward using licit substances when working as a regulated professional, increased involvement with medical professionals as one ages, shifting cultural and historical prescribing practices, and increased exposure to stressful life situations.

When examining prevalence of substance use, it is important to recognise that use is not necessarily indicative of misuse, abuse, or addiction. For instance, the Canadian Centre on Substance Use and Addiction reported that while 13% of the population used prescription opioids in the past year, only 2% of that group used for non-medical purposes. Accordingly, findings of prevalence of *use* should not be conflated with declarations of prevalence of problematic or potentially problematic use. Keeping in mind the variability of social determinants of health that may act as risk factors (e.g., poverty, level of education, access to resources) and protective factors (e.g., stable housing, financial resources, status), it is possible that professionals may experience less detrimental consequences associated with substance use than others who have fewer protective factors.

Findings indicated that use of a substance when a person was a student is correlated with use when they are professionals. Accordingly, it may be worth fostering discussions about substance use early in professional education programs.

Implications for professional regulation

This research has implications for notions of professionalism and for professional regulation. Within the Canadian context, the relatively high prevalence of cannabis use is timely information with respect to impending legalisation. It is expected that laws for non-prescribed cannabis will be similar to alcohol, once it is legalised (Straszynski, 2016, Sept 9). In workplaces, alcohol is treated under the Workplace Drug & Alcohol Policy, which allows employers to restrict use of

alcohol during work hours and prohibit working when intoxicated (Straszynski, 2016, Sept 9). Prescribed cannabis used in the workplace or during work hours is expected to be treated similar to other prescription medications (Weir & Pennell, 2017). At the same time, professional regulatory bodies claim authority over the off-duty conduct of their members, blurring the boundaries between public and private. The concept of "conduct unbecoming" refers to conduct on the part of a certified professional that is contrary to the public interests, or brings discredit to the profession (Office of the Legislative Counsel & Nova Scotia House of Assembly, 2009). It is often conflated with professional misconduct, mixing together potential for harm to clients or patients with perceptions of professionally inappropriate or unseemly behavior. What is considered socially appropriate (or in this case professionally appropriate) is based on predominant social values, norms, and beliefs. Professional status carries with it not only expertise and jurisdiction over certain aspects of life, but also social power and authority, a degree of influence. But that authority and influence relies on embodying what has been called "respectability" (Young, 1990, p. 57) – the forms of appearance, speech, tastes, demeanor, and comportment deemed respectable. Conduct unbecoming violates those social rules and therefore risks sullying the reputation of the profession, rather than posing specific risk to clients or patients.

The Canadian Human Rights Commission (CHRC) (2017) cautions, "A positive result on a drug or alcohol test may be treated as an indicator of potentially greater risk, but should not be taken as concrete evidence of a substance dependence or that the person has or will, in fact, come to work impaired by drugs or alcohol" (p. 14). Our research suggests there is relatively high prevalence of use of licit, illicit, and prescribed substances that *could* have the potential to affect performance at work. However, in our research, there are few actual reports of substances having

ever negatively impacted work performance as an immediate effect (Kiepek et al., 2018). The relationship between substance use and competent performance of professional roles remains an open question.

Research Limitations

Response bias is a potential limitation, as the study may have appealed to individuals who use substances. Studies that explore substance use from non-problematising perspectives may appeal to those interested in increasing social awareness about the prevalence of substance use. However, we did hear from participants with limited experience of substance use and several participants included statements that use of illicit substances was minimal or in the distant past.

Another limitation was in the length of the study, which appeared to lead to some response fatigue. We anticipated this could occur, but since there was little known about the topic of substance use by social workers in Canada and there is a relatively high financial cost associated with advertising in professional organisation, we determined it was important to collect as much data as we could and structured the survey to collect the prevalence data first, which we deemed most novel.

It is likely that reports of alcohol and caffeine had ceiling effects. They were used by virtually all respondents, making it impossible to detect correlations with any demographics or work-related factors. Future research in this area should identify comparisons of interest *a priori* to increase statistical power.

Interpretations of correlational relationships would be enhanced by integrating in-depth qualitative methods to explore how participants interpret patterns of substance use, and changes in those patterns in relation to work-related factors.

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Originality

Much of the literature about substance use by professionals is focussed on implications for increased surveillance, monitoring, and disciplinary action. We contend that professionals have a long history of using substances, but have needed to conceal use (Kiepek & Beagan, 2018), contributing to social misconceptions about degree of risk and uncertainty about when it might be appropriate to intervene.

Our results suggest that the substantial rates of substance use reported, when it is anonymous and safe to do so, highlight the importance of distinguishing between potential for harm and perceptions of respectability. There are clearly many presumably-competent professionals using a range of psychoactive substances – from coffee to cocaine – that may not in fact be posing risk to public interests. Decisions made by regulatory bodies should transcend social opinion and be based on the best evidence available regarding safe and effective care. At this time, there is very little information about self-reported effects of substance use among professionals and it is essential to extend our understandings.

This paper does not resolve the complex considerations of the appropriateness of substance use by professionals, but it does shed light on the nature of substance use in Canada as changes in legislation regarding cannabis use are in progress. Any decisions made by regulatory bodies should not be reactive to the potential changes in use, without first understanding the current context of substance use by professionals.

Ethics Approval: Dalhousie University Social Sciences & Humanities Research Ethics Board REB #: 2016-4042

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Funding: This work was supported by the Dalhousie University Faculty of Health Research Development Grant.

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