



Cannabis & Public Health Forum

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OTTAWA | SHAW CENTRE

Forum sur le cannabis et la santé publique

DU 30 AVRIL AU 1 MAI 2019
OTTAWA | CENTRE SHAW

Oral and Poster Abstract Program

Programme des résumés oraux et d'affiches

ORAL PRESENTATION 1

Tuesday 30 April

11:00-12:30

Room 201

Peel Public Health's Approach to Cannabis Legalization - Sharn Khinda**Co-authors:** Jaspreet Kaur Singh, Leah Smith, Teresa Wan

Introduction/program need and objectives: The changing legal landscape regarding recreational cannabis in Canada led public health to reflect on current approaches to addressing substance use and the implications of cannabis legalization on communities. Using the End-to-End Public Health Practice (E2EPHP) process, Peel Public Health utilized elements of research, data, program planning and evaluation, and business planning to develop a comprehensive public health approach to cannabis legalization. We will be highlighting key pieces of work, including evidence-informed decision making, stakeholder collaboration and advocating for healthy public policy, which has brought us closer to our objective of building a strong public health approach to cannabis legalization.

Program methods, activities and evaluation: Peel Public Health's (PPH) approach to cannabis legalization using E2EPHP included:

- Defining the problem by understanding health status data, conducting an evidence review regarding the health effects of cannabis use, analyzing federal/provincial proposed legislation, and identifying potential regional/municipal implications of cannabis legalization.
- Developing options and deciding on interventions by weighing the evidence, considering the proposed legislative framework based on our local context, and involving key decision makers in the process.
- Activities included evidence-informed key messages, policy and advocacy, and stakeholder collaboration.

Program results or outcomes: The E2EPHP has resulted in key deliverables including: responses to federal/provincial consultations to advocate for healthy public policy; key messages on the health effects of cannabis use; education and awareness sessions for local school administrators, consultation responses, and; internal and external stakeholder collaboration.

Recommendations and implications for practice or additional research: Cannabis legalization brought to light the importance of bringing the right people to the table through stakeholder analysis, ensuring open lines of communication cross-divisionally and across the Region, recognizing the value of collaboration, and continually assessing the needs of our population. PPH will continue to apply a systematic and collaborative approach to emerging public health issues such as cannabis legalization. Future work may involve identifying the most effective interventions to apply to our local context.

Non-medical Cannabis Legalization: A Public Health Approach for First Nations Communities in BC - Benjamin Rolph**Co-author:** Nel Wieman

Introduction/problem definition that demonstrates the need for a policy change: The legalization of non-medical cannabis will have effects on First Nations in BC in a number of key areas, including public health and safety, community regulations and decision-making. First Nations in BC continue to be impacted by colonization and oppression, both at the individual and systems level, and still experience stigma, racism, and discrimination in their daily lives, including in their health care interactions. People use substances for a number of reasons, not always due to an addiction, and First Nations may see cannabis as a potential mechanism to cope with intergenerational trauma, systemic health issues and other adversities.

Research Methods: Over the past year, First Nations Health Authority (FNHA) has collected valuable data, perspectives and information from throughout BC, primarily from a provincial Health Attitudes and Beliefs

Survey and through several engagement sessions with a wide variety of audiences and demographics (e.g. community leaders, healthcare workers and youth). FNHA also partnered with the BC government on a large-scale quantitative survey which included a First Nations identifier question that will allow us to better understand basic cannabis usage rates around BC.

Results and analysis: From these research and engagement efforts, we have learned that daily or almost daily usage rates among First Nations on-reserve in BC are higher than the general Canadian population. There is also a pressing need for culturally-safe and appropriate health resources that focus on key areas such as youth, mental health and wellness, and maternal health.

Recommendations and implications for policy, practice or additional research: FNHA is focused on protecting and promoting health while reducing the negative health outcomes associated with cannabis use, with a priority on responsible use, harm reduction and individual and community safety. We recommend culturally-safe harm reduction options related to cannabis use, including safe transportation (e.g. designated drivers), choosing lower-potency products (e.g. THC:CBD ratio) and safer methods of use.

Examining the location of cannabis dispensaries in Ontario prior to legalization: association between neighbourhood socioeconomic status and illicit retail locations - Catherine Brown

Co-authors: Daniel Myran, Chris Pearlman, Andrew Pinto, Michael Ip, Aaron Myran, Peter Tanuseputro

Introduction/background: Evidence from alcohol and tobacco suggest that increased retail availability is associated with increased substance-related harms. To investigate factors that could influence cannabis-related harms and inequities, we examined the association between illicit cannabis retail availability and neighbourhood characteristics one month before legalization of recreational cannabis in Ontario, Canada.

Methods: We extracted the location of illicit cannabis dispensaries operating in Ontario on September 16, 2018 from the website weedmaps.com and validated locations by manual searches of internet listings. Using GIS methods, we quantified illicit cannabis access by the number of cannabis outlets located within one kilometre of the geographic center of the 12,184 urban neighborhoods in Ontario. We used the Ontario Marginalization Index (OMI) to characterize neighborhood SES. We used mixed effect Poisson regression models to examine associations between cannabis access and four categories of the OMI. We used descriptive statistics to determine the proportion of dispensaries within one kilometre of schools.

Results and analysis: We identified 188 illicit cannabis dispensaries operating in Ontario. Within one kilometre from the geographic center of the most materially deprived neighbourhoods there were 1.71 (95%CI 1.47-1.96) times more illicit cannabis dispensaries than the least deprived neighbourhoods. Conversely, within one kilometre from the geographic center of neighborhoods with the highest concentration of visible minorities there were fewer illicit cannabis dispensaries (RR=0.68, 95%CI 0.55-0.85) than those with the lowest concentration. The proportion of illicit cannabis dispensaries within one kilometre of an elementary school was 85.6% (n=161) and a secondary school was 69.7% (n=131).

Conclusions and implications for policy, practice or additional research: Prior to legalization, access to cannabis was higher in materially deprived neighborhoods and lower in neighborhoods with higher numbers of visible minorities in Ontario. Most illicit cannabis dispensaries were located within one kilometer of a school. Ongoing work should investigate how legalization has changed access to cannabis retail locations and the association between cannabis availability and cannabis-related harms.

Challenges in Cannabis Legalization, Regulation and Control - Michelle Kilborn

Co-author: Jonathan Caulkins

Introduction/problem definition that demonstrates the need for a policy change: Canada, and a number of countries are legalizing the supply of cannabis for medical or recreational use, or are considering doing so. Beyond the obvious top-level design questions lie many equally important and often thornier regulatory issues concerning retail sale and use. These issues are less discussed and are often decided at the local level by policy makers who are generalists, not experts specialized in substance misuse let alone cannabis. This presentation provides a framework for thinking about the role of regulation and delves into three important topics: Where and when should cannabis be sold? What should retailers sell? And where/how should their products be used?

Research Methods: Analysis and literature review from current cannabis scientific literature, drawing on parallels with alcohol and tobacco.

Results and analysis: Overall, uncertainties concerning health harms and behavioral responses of users and industry make it unclear the effects of different policies on public health, or which are best. First, analysis of the options available of where/when cannabis should be sold reveals how the issue pits the public interest against commercial interests. Second, restrictions on what products are approved for sale seem prudent as product types have expanded significantly (e.g., Washington state nontraditional products captured one-third of the market two years after legalization). Examples of what limitations on products and potency can mean for the black market and consumption rates will also be provided. Finally, regulating public consumption has many facets, with some presenting unique challenges. The key considerations from a public health perspective include intoxication, risk of normalization and second-hand smoke.

Recommendations and implications for policy, practice or additional research: Until better information is available, a precautionary approach to development and implementation of cannabis regulations is recommended at the national, provincial and local levels. In the meantime, it important that mechanisms are put in place to allow perspectives from public health to ensure the legislation objectives are upheld.

Cannabis Law Reform in Canada: The Public Health Approach We Didn't Get - Mike DeVillaeer

Introduction/problem definition that demonstrates the need for a policy change: Canada's three long-established, legal drug industries (alcohol, tobacco, pharmaceutical) are all associated with public health crises reflecting substantial morbidity, mortality and economic cost. Cannabis legalization in Canada provided an opportunity to learn from these crises and to try a different approach - a "public health approach" which became a staple in government pronouncements. Public health authorities and individual public health and drug policy academics provided considerable guidance to government on what a public health approach would look like. This guidance included written and verbal testimony to the federal government's Task Force on Cannabis Legalization and Regulation, and to standing committees of the Canadian House of Commons and the Canadian Senate. Such testimony was also provided to provincial government committees across the country.

Research Methods: Input from the academic literature and from public health authorities was compared to the output of federal and provincial legislation.

Results and analysis: Results suggest that public health input had some influence on some issues. However, it had less impact on some of the most critical issues such as industry production and retail models, minimum age for use, product promotion practices, decriminalization of minor cannabis-related offences, and holding industry accountable to legislative and regulatory provisions. Accordingly much of the legislation and its enforcement falls short of reflecting the public health priority that many authorities had envisioned.

Recommendations and implications for policy, practice or additional research: This presentation draws upon the academic and public health literature to provide a model for cannabis legalization that reflects a public

health priority. Given that legalization will be a process and not a solitary event, this presentation will be relevant to:

- potential change opportunities arising from lessons learned and from changes in federal and provincial governments;
- discussions between municipal governments and local public health authorities who will be attempting to mitigate harm at the municipal level;
- international audiences observing the Canadian experiment.

ORAL PRESENTATION 2

Tuesday 30 April

11:00-12:30

Room 203

Prenatal exposure to cannabis and child neurodevelopmental outcomes: A population-based cohort study - Daniel Corsi

Co-authors: Jessy Donelle, Steven Hawken, Darine El-Chaar, Deshayne Fell, Mark Walker

Introduction/background: Cannabis use has been reported by up to 10% of pregnant mothers, many of whom continued use throughout pregnancy. With the recent legalization of cannabis use in Canada, and the evolving evidence about the relative safety of cannabis, tobacco, alcohol and other substances used during pregnancy, there is increased concern about potential childhood outcomes related to prenatal exposure. The objective of this research is to evaluate the association between prenatal cannabis exposure and the onset of neurodevelopmental disorders during childhood.

Methods: Retrospective cohort study of all live births from April 1st, 2007 to March 31st, 2012 using the BORN Ontario province-wide birth registry containing information on cannabis use during pregnancy. Data were linked with several health administrative databases held at ICES to ascertain child neurodevelopmental outcomes. Cox proportional hazard models were used to evaluate the association between prenatal cannabis exposure and neurodevelopmental outcomes. Inverse probability of treatment weights and propensity scores will be used to adjust for potential confounding.

Results and analysis: 508,025 infants were included and in 3,248 (5.6%) their mother reported cannabis use during pregnancy; 78% of these women reported smoking, 4% drinking and 39% other drugs during pregnancy. Median follow-up time was 7.5 years. Unadjusted analyses indicated significant associations between prenatal cannabis exposure and autism spectrum disorder (hazard ratio [HR] 1.62; 95% confidence interval [CI] 1.30-2.02), learning disabilities (HR 2.31; 95%CI 2.09-2.56), emotional disorders (HR 2.22; 95%CI 1.46-2.03), anxiety disorders (HR 1.72; 95%CI 1.46-2.03), and attention deficit disorders (HR 2.35; 95%CI 2.15-2.56).

Conclusions and implications for policy, practice or additional research: Although preliminary findings suggest associations between prenatal cannabis exposure and child neurodevelopmental disorders, additional analyses are currently being undertaken to adjust for confounding by concomitant substance use. Findings will generate new information on the long-term effects of prenatal cannabis exposure on neurodevelopmental disorders, which is currently lacking.

Pourquoi et comment les comestibles du cannabis permettront à l'industrie de développer de nouvelles stratégies de marketing? – Marianne Dessureault

Co-author: Émilie Dansereau-Trahan

Introduction/problem definition that demonstrates the need for a policy change: Les études confirment que la promotion d'un produit est un facteur fortement lié à sa consommation. Le branding d'un produit est un aspect clé de la promotion et une fois que celui-ci est autorisé, il devient très difficile de prévenir la promotion d'une

substance. L'histoire du tabac et de l'alcool nous ont permis de tirer certains apprentissages au sujet des stratégies marketing de l'industrie de substances psychoactives légales.

Research Methods: Recension des stratégies marketing de l'industrie du cannabis au Québec : Facebook, Twitter, Instagram, événement B2B, les médias imprimés, le site de la SQDC, conférences.

Results and analysis: Présentation des stratégies utilisées actuellement : couleurs sur les emballages, médias sociaux (Joints pré roulés, Facebook, Twitter, événements B2B par exemple)

Recommendations and implications for policy, practice or additional research: Les comestibles seront bientôt autorisés et mis en marché et à travers ce médium, l'industrie tentera de développer une nouvelle clientèle comme celles du tabac et de l'alcool l'ont fait avant elle.

Cannabis Informatics Monitoring System (CIMS): Putting Results at your Fingertips - Shawn O'Connor

Co-authors: Rita Luk, Jolene Dubray, Michael Chaiton, Robert Schwartz, Pamela Kaufman

Introduction/program need and objectives: The Cannabis Informatics Monitoring System (CIMS) is a new user-friendly online health portal, designed to house cannabis-related results from Canadian population surveys. Its main objective is to facilitate stakeholders' use of these data in program planning, decision making, surveillance and reporting.

Program methods, activities and evaluation: Technical requirements for CIMS were modeled after a sister site, the Tobacco Informatics Monitoring System (TIMS). Original site design involved key informants throughout the process and included several iterations, user testing, and an expert heuristic evaluation. Cannabis indicator development progressed through a series of steps including interviews with key stakeholders and review of established research.

Program results or outcomes: CIMS contains over 60 indicators organized under specific topics: cannabis use, exposure, public opinion, and other substance use. Visitors are able to navigate through the site to access tens of thousands of unique data points including obtaining results by population (age, sex, education, occupation, and income), geography (national, provincial, and sub-provincial), and multiple surveys spanning multiple years. Display options include table, or bar and line charts, with dynamic capabilities to sort, group, print, and download.

Recommendations and implications for practice or additional research: By providing ready access to analysed data, CIMS has the potential to enable new insights into emerging issues and trends. It is expected that the site will facilitate links between health-outcome results and the decision-making process such as consideration of health equity focusing on priority sub-populations or high-risk areas. On the whole, this information has the potential to inform program planning, decision making, and reporting.

No Ifs Ands or Butts (Except in Designated Areas): A Public Health Experience Influencing Public Policy around Cannabis Consumption - Emily Berrigan

Co-authors: Jennifer Hynick, Desiree Gregory

Introduction/program need and objectives: With cannabis legalization now a reality in Canada, municipalities have an important role in establishing parameters of acceptable use in public spaces. This role becomes especially important in the Halifax Regional Municipality (HRM), where residents are projected to consume cannabis at rates well above the national average. Regional Council's interest in developing a municipal cannabis framework therefore created a policy window for Public Health to influence the development of healthy public policy to reduce the harms associated with cannabis legalization in the HRM.

Program methods, activities and evaluation: As the focus of this framework quickly evolved to include tobacco and vaping, Public Health monitored social and political climates and mobilized stakeholders to advocate for smoke-free environments. After creating a process to achieve our objective, public health engaged in reflection and evaluation of activities and impacts on municipal policy. The resulting by-law was further analyzed to inform continued efforts in leveraging health in municipal cannabis policy.

Program results or outcomes: Public Health developed key messaging and health evidence reports that were successfully utilized by municipal staff and regional councillors as they developed and enacted by-law N-300 Respecting Nuisances and Smoking. By-law N-300 restricts all forms of combustible smoking on any municipal property, except in outdoor designated smoking areas (DSA's). Adapting to the municipality's decision to adopt DSA's, Public Health provides ongoing support as the by-law is implemented in a real world setting.

Recommendations and implications for practice or additional research: Municipal policies that restrict cannabis use have implications for how cannabis, and other combustibles are conceptualized and positioned within our communities. Leveraging health in municipal cannabis policy has proven to be an excellent case study in how Public Health can respond to emerging policy windows to influence healthy public policy. This works builds on existing public health standards and contributes to future quality improvement activities that promote Public Health as leaders in policy.

Règlements municipaux sur l'usage du cannabis dans les lieux publics extérieurs: réponse de la santé publique en Montérégie - Judith Archambault

Co-author: Julie Loslier

Introduction/Besoin et objectifs du programme : Au Québec, la Loi prévoit qu'il est interdit de fumer du cannabis dans les mêmes lieux où il est interdit de fumer du tabac et que les municipalités locales peuvent décider d'interdire de fumer du cannabis dans d'autres lieux que ceux visés par la Loi (parcs municipaux, trottoirs, etc.). D'un point de vue de santé publique, ses impacts suivants sont à craindre dans les municipalités qui décideraient d'interdire de fumer du cannabis dans l'ensemble des lieux publics extérieurs:

- augmentation de l'exposition de la population à la fumée secondaire de cannabis;
- atteinte à l'équité sociale;
- poursuite de la judiciarisation excessive;
- difficulté d'évaluation des impacts de la légalisation.

La Direction de santé publique de la Montérégie a adopté plusieurs stratégies afin de sensibiliser les 143 municipalités de son territoire aux enjeux de règlements trop strictes.

Méthode, activités et évaluation du programme : Un document Question-réponse a été produit et diffusé auprès des différents acteurs de santé publique qui travaillent auprès des municipalités. Par la suite, une présentation aux corps policiers a suscité beaucoup d'intérêt et entraîné plusieurs présentations à différentes instances municipales. Finalement, un avis de santé publique accompagné d'une vidéo a été envoyé à l'ensemble des maires de municipalités.

Résultats ou effets du programme : A ce jour, au moins 5 municipalités montérégiennes sur 143 ont adopté des règlements interdisant de fumer du cannabis dans l'ensemble des lieux publics extérieurs.

Recommandations et répercussions concernant la pratique ou les pistes de recherche : L'influence stratégique est un rôle inhérent à la pratique de santé publique. L'anticipation des enjeux a été déterminant pour avoir des outils à disposition au moment voulu. Cependant, les décisions municipales sont basées sur un ensemble de facteurs et la pression populaire a, dans certaines municipalités, pesé plus lourd dans la décision que les arguments de santé publique. Cet exemple démontre que la norme sociale non favorable au cannabis peut devenir une barrière à l'atteinte des objectifs de la légalisation.

ORAL PRESENTATION 3

Wednesday 1 May

9:00-10:30

Room 201

Lower-risk cannabis use guidelines: navigating between evidence-based research and target audience acceptance - Natalia Gutierrez**Co-authors:** Emmanuelle Prairie, Robert Perreault, Monique Lalonde

Introduction/program need and objectives: Prior to cannabis legalization, Montreal Public Health was mandated to adapt Fisher & al 2017 Canadian Lower-Risk Cannabis Use (LRCU) guidelines to Quebec's population. Pretesting LRCU messages with cannabis users was done to assess 1) acceptance, 2) comprehension, 3) format, 4) dissemination methods, in order to create a harm-reduction toolkit credible and accepted by Quebec's cannabis consumers.

Program methods, activities and evaluation: Fisher's guidelines were translated, culturally adapted and pretested for Quebec. Pretesting methods included focus groups in July 2018 (4 French: 2 groups aged 18-34 yrs, 2 groups aged >35 yrs; 2 English: both aged >18 yrs) and intercept interviews conducted in September 2018 in a Montreal public setting known for its cannabis scene.

Program results or outcomes: For both pretesting methods, results did not differ by language. 45 cannabis users (occasional and frequent) participated in focus groups and were asked to react to 12 LRCU recommendations. Abstinence recommendation was perceived as contradictory to the rest of LRCU guidelines. Most participants wanted detailed, factual and concise information on risks associated with cannabis use. Responsible use terminology was preferred to LRCU. Based on focus groups results, 8 revised recommendations illustrated by pictograms were evaluated by 31 cannabis users interviewed by interception. General appeal and non-judgmental tone resonated with the audience. Participants understood all terms, except THC and CBD. Respondents identified "Choose when to use", "Know your limits" and "Plan your ride" as LRCU adopted strategies. Social media platforms were the preferred dissemination method. The final version of LRCU toolkit was distributed throughout Quebec's public health departments following cannabis legalization.

Recommendations and implications for practice or additional research: Pretesting underscored a need to: 1) define frequent and occasional use, considering quantity of cannabis used, and 2) understand the implications of cannabis being used alternatively for recreational and medical purposes. Consulting cannabis users highlighted the necessity for greater involvement of this heterogeneous population in developing all public health measures.

Toking 9 to 5? Clearing the haze on cannabis consumption and perceptions in the Canadian workplace - Nancy Carnide**Co-authors:** Peter Smith, Andrea Furlan, Michael Frone, Mark Ware

Introduction/background: Comparatively little attention has been directed to the implications of cannabis legalization for Canadian workers and occupational health and safety (OHS). Workplace parties have an appetite for information to guide policies and prevention initiatives. However, data on workplace cannabis use in Canada has been inadequate and limited in scope and has failed to measure modifiable risk factors for workplace use. Our objective was to collect and describe pre-legalization pan-Canadian data to understand how workers consume cannabis temporally in relation to work, how they perceive use in relation to work, and the social norms around workplace use.

Methods: We conducted a cross-sectional survey in June 2018 to gather pre-legalization information on workplace cannabis use patterns, reasons for use, workers' perceptions regarding the risks and impact of cannabis use at work, knowledge of cannabis effects, workplace norms around use, and availability in the workplace. The survey was administered by EKOS Research Associates using online and telephone surveys.

Respondents were randomly selected from a pre-existing panel of over 100,000 Canadians, initially selected using random probability sampling.

Results and analysis: 2,014 workers completed the survey, including 592 past-year cannabis users. Analysis is ongoing, however, preliminary findings suggest cannabis use is occurring in ways that may impact OHS. For instance, unweighted preliminary analyses suggest a non-trivial proportion of past-year cannabis users consumed cannabis within 2 hours of starting work (20.6%), on breaks (13.7%), or during work (11.0%). Findings also suggest some problematic perceptions and norms. For example, 39.6% of all respondents believed it was easy to use cannabis during breaks. We will present results of final analyses weighted for age/sex/province.

Conclusions and implications for policy, practice or additional research: These data provide a baseline against which we can monitor and evaluate the impact of legalization on the workplace. These data may also inform educational messaging for prevention campaigns to ensure low risk use among Canadian workers.

Daily cannabis use is associated with lower likelihood of daily illicit opioid use among people who use illicit drugs with chronic pain in Vancouver, Canada - Stephanie Lake

Co-authors: Thomas Kerr, Jane Buxton, Kanna Hayashi, Kora DeBeck, Evan Wood, M-J Milloy

Introduction/background: While a legal framework for cannabis rolls out across Canada, many jurisdictions including British Columbia are struggling to contain an opioid overdose crisis exacerbated by an increasingly toxic drug supply. There is strong public and scientific interest in understanding the role of cannabis/cannabinoids as a substitute for opioids in the management of chronic non-cancer pain. We aimed to investigate the association between frequent cannabis use and illicit opioid use among people who use illicit drugs (PWUD) experiencing chronic pain in a setting where opioid overdose is a public health emergency and cannabis is de facto decriminalized.

Methods: Data were drawn from two prospective cohorts of PWUD in Vancouver, Canada. The present study included 740 respondents who reported chronic pain at their first interview between June 1, 2014 and November 30, 2017. We used chi-square tests to examine differences between daily and non-daily opioid (heroin or pharmaceutical) users at baseline, and generalized estimating equations (GEE) to explore the association between daily cannabis use and daily illicit opioid use over the study period.

Results and analysis: In total, 175 (23.6%) respondents with chronic reported daily illicit opioid use and 245 (33.1%) reported daily cannabis use during at least one six-month follow-up period. 103 (42.0%) daily cannabis users reported using cannabis to manage pain, and 55 (22.4%) reported using cannabis as a harm reduction strategy. After adjusting for demographic characteristics, substance use and health-related factors, daily cannabis use was associated with 29% lower odds of daily opioid use (Adjusted OR: 0.71, 95% CI: 0.55 – 0.92; p=0.009) relative to less frequent or no cannabis use.

Conclusions and implications for policy, practice or additional research: Among PWUD with chronic pain, regular use of cannabis may help prevent or reduce high-frequency illicit opioid use, possibly through substitution of opioids in the management of pain. These findings provide important individual-level evidence to inform emerging cannabis-based harm reduction programs in Vancouver.

Evaluating the impact of cannabis to reduce or manage illicit drug use in Vancouver, Canada - Jenna Valleriani

Co-authors: Rebecca Haines-Saah, Ryan McNeil

Introduction/background: In North America, opioid and stimulant use are increasing at an alarming rate and contributing to unprecedented health harms, including an overdose epidemic that has become a public health crisis. Several recent studies have suggested potential uses of cannabis as a substitution or harm reduction

strategy for opioid and stimulant use, pointing to the potential of cannabis to address harms through the reduced use or substitution of more toxic substances.

Methods: In Vancouver, Canada, we partnered with two community-based initiatives who have been involved in the distribution of cannabis to people who use drugs (PWUD) for substitution purposes. This includes programs organized by the Vancouver Area Network of Drug Users (VANDU) and the Overdose Prevention Society (OPS). To date, the role of community-based initiatives in providing access to cannabis for instrumental uses among PWUD has not been explored. We conducted in-depth interviewed 100 PWUD, as well as 100+ hours of ethnographic fieldwork.

Results and analysis: Drawing from interviews and field work at these sites, we examined the diverse ways cannabis is currently being used by PWUD as a strategy to reduce or manage illicit opioid and stimulant use. Additionally, we explored the perspectives of PWUD regarding the use of community-based cannabis substitution initiatives, and how regular access to cannabis among PWUD shapes their exposure to drug-related risks and harms (e.g., overdose).

Conclusions and implications for policy, practice or additional research: The legalization of cannabis may have important implications on substitution and drug use patterns, and past research has found an association between the liberalization of cannabis laws and reductions in drug-related overdose deaths that is not yet fully understood. Considering that Canada is undergoing regulatory changes alongside an overdose epidemic, understanding current and emerging substitution practices around cannabis use, including the social and structural barriers to access, will be critical for optimizing cannabis' potential as a harm reduction tool.

Substituting cannabis for alcohol: The impact of legalization - Michelle Thiessen

Co-authors: Tatiana Sanchez, Kim Crosby, Sarah Daniels, Zach Walsh

Introduction/background: Preliminary research has demonstrated a "substitution effect" whereby cannabis replaces the use of a potentially more harmful substance, such as alcohol. Given the recent change in the legalization status of cannabis, there is increasing public interest on the effect that increased access to and availability of cannabis presents, particularly on the use of alcohol. The present study seeks to examine substance use patterns prior to and directly following cannabis legalization to evaluate the impact of the policy change. Post-legalization data is forthcoming.

Methods: 565 undergraduate students (63.5% female; M=19.35, SD=7.34) reporting past cannabis and alcohol use completed an online survey on substance preference and substitution patterns.

Results and analysis: Overall, prior to legalization, 39.3% (n=222) preferred cannabis to alcohol, 50.6% preferred alcohol (n=286), and 8.8% (n=50) had no preference. The intentional substitution of cannabis for alcohol was endorsed by 24.3% (n=137) of individuals and 56% (n=316) of individuals reported that they drank less alcohol when they used cannabis. With regard to concurrent use, 23.5% (n=133) of individuals reported that cannabis and alcohol "mixed well together" and 49% (n=277) disagreed with the statement. Finally, few respondents (4.3%, n=24) indicated that cannabis was associated with drinking more.

Conclusions and implications for policy, practice or additional research: Pre-legalization data suggests that individuals substitute cannabis for alcohol and reduce alcohol consumption when cannabis is available. Notably, nearly a quarter of respondents indicated that they liked the effects of the two together, suggesting that this may represent a potential risk for harm. Data collection for post-legalization responses is ongoing with scheduled completion March 2019. Given the major shift in cannabis policy in Canada and heightened public interest, examining the substitution effect and co-use of alcohol and cannabis is warranted. Moreover, examining these patterns pre-and post-legalization can provide important preliminary evaluation of Canadian cannabis policy.

ORAL PRESENTATION 4

Wednesday 1 May

9:00-10:30

Room 203

Cognitions Act as Mediators of the Effect of Personality Traits on Adolescent Cannabis Use - Maya Pilin**Co-author:** Marvin Krank

Introduction/background: Personality traits put adolescents at risk for substance use. For example, traits such as impulsivity, sensation-seeking, hopelessness, and anxiety sensitivity have been linked to adolescent cannabis use. Moreover, these traits have been targeted to successfully reduce rates of adolescent cannabis use in interventions (Mahu et al., 2015). However, few studies have discussed the mechanisms behind why such personality traits put adolescents at risk for substance use.

Methods: The current study screened 235 grade eight adolescents using the Substance Use Risk Profile Scale (Woicik et al., 2009) to assess their personality. In addition, students completed measures of cannabis use and cannabis related cognitions: behavioral associates (Krank et al., 2010) and outcome expectancies (Fulton et al., 2012).

Results and analysis: The personality screen identified adolescents with at least one high-risk personality trait ($n = 191$) and those with no high-risk traits ($n = 244$). High-risk adolescents were more likely to use cannabis and responded more often with cannabis-related answers when presented with behavioral cues than low-risk adolescents, as well as having more positive outcome expectancies regarding cannabis use. The mediation model demonstrated that cannabis-related cognitions, behavioral associates and outcome expectancies, fully mediated the relationship between personality risk and past year cannabis use, with excellent model fit ($CFI = 0.99$, $RMSEA = 0.03$). In sum, high-risk personality traits may lead to more frequent and more positive cannabis-related cognitions, thus leading to increased use.

Conclusions and implications for policy, practice or additional research: Several clinical and policy implications can be garnered from this research. For example, the results point to the importance of targeting particular cannabis-related cognitions in substance use prevention programs. Moreover, it is especially important to consider adolescents' cognitions given the recent legalization of cannabis that may impact how adolescents view this substance.

Do School Context and School Connectedness Influence Sex-Related Differences in Cannabis Use of Adolescents? - Laurence Matteau-Pelletier**Co-authors :** Richard E Bélanger, Scott Leatherdale, François Desbiens, Slim Haddad

Introduction/background: Sex is an important predictor of adolescents' cannabis use as boys usually use cannabis more frequently and begin at a younger age than girls. Such sex-related differences could be influenced by the school context since it has been suggested that the school environment affects boys and girls differently. We study a modification effect of school connectedness on the association between sex and different indicators of cannabis use, with prior assessment of the between-schools variability of the effect of sex on cannabis use.

Methods: We use data from the questionnaires of the 2017 COMPASS-Québec project which enrolled 6185 students from 1st to 5th secondary level from 11 schools in the Québec City Area.

Results and analysis: We observed a significant between-schools variation of the association between sex and monthly cannabis use, after controlling for students' main sociodemographic factors and school socioeconomic environment. School connectedness had a statistically significant modifying effect on the association between sex and monthly cannabis use. We found no modifying effect of school connectedness nor effect of sex on early cannabis use.

Conclusions and implications for policy, practice or additional research: Preventive measures to reduce cannabis use could be more effective if adapted to the local school context. As school connectedness is strongly associated with lower cannabis use, particularly for girls, interventions targetting determinants of school connectedness should be considered, with joint assessment of their impact on adolescents' cannabis use.

Changing Substance Use Norms to Deter Teen Marijuana Use - Tyler Janzen

Introduction/program need and objectives: Most substance use prevention campaigns focus on a single substance, such as tobacco, alcohol, or marijuana. However, risk factors for various substance use are similar, and deterrence of one substance can lead to an increase in a different substance if the underlying factors for substance use are not addressed. Consequently, an integrated approach to youth substance use prevention could be an effective and cost-efficient means of intervention.

Program methods, activities and evaluation: For such an approach to work, campaigns must understand teen cultures and substance use motivations more comprehensively. Specifically, teens with certain social identities, self-perceptions, and values are at greater risk for using substances like marijuana. These psychographics can be leveraged to develop tailored marijuana prevention messages that shift substance use norms and improve campaign effectiveness. To explore opportunities for targeted multi-substance prevention initiatives, we investigated multi-substance use in an online sample of teens. Among participants reporting multi-use (25.2%), the most common combinations were tobacco-alcohol-marijuana (32.9%). Multi-substance use was most highly concentrated among teens who identify with the Alternative and Hip Hop peer crowds, which each have distinct norms, values, and identities.

Program results or outcomes: This keynote will present research, campaign examples and share preliminary results to help practitioners explore interventions focused on multi-substance use. In particular, the session will demonstrate how to apply an audience segmentation approach to effectively target messages to teens at highest risk for multi-use.

Recommendations and implications for practice or additional research: Creating substance-free rather than substance-specific interventions can potentially address the underlying causes of multiple risk behaviors, leveraging limited intervention resources and leading to net substance use reductions among teens.

What Lies Ahead in a Legalized Policy Environment? Cannabis Trend Data and Change in Perceptions of Risk between Prince Edward Island (PEI) and Canadian Students - Jo-Ann MacDonald

Co-authors: Donna Murnaghan, Matthew Munro

Introduction/background: From 2008/2009 to 2016/2017, the Canadian Student Tobacco Alcohol and Drugs Survey (CSTADS) (formerly Youth Smoking Survey) collected biennial student substance use data across Canada. In the current federal policy context of legalization of recreational cannabis, youth perceptions of cannabis risk take on heightened importance.

Methods: In 2016/2017, CSTADS data were collected from 52,103 students in 9 Canadian provinces (grades 7-12). The PEI sample included 4536 students in 21 schools. This study analyzes questions related to youth perceptions of cannabis-related harms between 2014/2015 and 2016/2017 as well as new questions about methods of cannabis consumption contained in the 2016/2017 data collection cycle.

Results and analysis: Provincially, prevalence of cannabis use (grades 7-12) varied (PEI - 19.9% vs. Canada - 17%). Canadian student perceptions of the harm of smoking cannabis showed significant change: 19% of students reported that smoking cannabis once in a while put people at 'great risk' of harming themselves (decreased from 25% 2014/2015); and 18% of students thought there was 'no risk' (increased from 14%

2014/2015). Provincially, prevalence of students who thought there was ‘no risk’ of using cannabis on a regular basis (grades 7-12) varied significantly.

Conclusions and implications for policy, practice or additional research: Youth perception of risk of cannabis use appears to have changed pre-legalization and raises alarms for continued lessening of risk in a legalized policy environment. It is important to note that the potential health, social and legal aspects of cannabis use among youth are yet to be fully understood. A national call to action on the harms of cannabis use that informs policy development to protect youth is needed.

Talking Pot with Youth - A Cannabis Communication Guide for Youth Allies - Kiran Somjee

Introduction/program need and objectives: Findings from recent qualitative research published by the Canadian Centre on Substance Use and Addiction (CCSA) indicate that Canadian youth are looking for information on cannabis. We know that they are conducting their own research online and through conversations, but are receiving inconsistent messaging. Youth have indicated that they want both sides of the story presented to them in an unbiased manner to make informed decisions about using cannabis and other substances.

Program methods, activities and evaluation: The Cannabis Communication Guide, a tool co-developed by Canadian youth, youth allies and CCSA, educates and informs those interacting with youth on how to have protective, unbiased, informed and non-judgmental conversations with youth about cannabis. Taking a harm-reduction, process-based approach to effective communication, this guide allows the user to reflect on their biases, prepare for the conversation and understand the spectrum of use.

Program results or outcomes: Supportive, open and un-biased conversations with youth about cannabis.

Recommendations and implications for practice or additional research: This guide can be used within programs and services at the local and community level across provinces, territories and jurisdictions as well as by the general public (youth allies - including but not limited to parents, teachers, coaches and health care professionals).

POSTER PRESENTATIONS

Rideau Canal Atrium (Second Floor)

Cannabis packaging, labeling and health warnings: Using the tobacco control literature to address current gaps - Mohammed Al-Hamdani

Co-authors: Tristan Park, Kayla Joyce, Megan Cowie, Sherry Stewart

Introduction/problem definition that demonstrates the need for a policy change: Cannabis legalization is a policy trend that is gaining popularity. Legalization has some merits such as decreasing enforcement costs and weakening the black market. However, legalization policy needs to be prescriptive to protect public health. Current Canadian regulations do not include clear regulations for cannabis package labeling.

Research Methods: A critical analysis of the current Federal legislation for cannabis packaging, labeling and health warnings to demonstrate gaps relative to tobacco packaging and health warning regulations.

Results and analysis: The current cannabis packaging, labeling and health warnings legislation offers some protection for public health by limiting the use of colors, prohibiting the use of promotional information and flavors, and requiring health warnings to be displayed on cannabis products. However, there a number of issues with the cannabis (vs. tobacco) legislation including the lack of absolute warning size specifications, unspecified warning orientation on the package, the use of light colors (e.g., white), freedom to use attractive shapes and tentative warnings (e.g., Cannabis "can be" addictive).

Recommendations and implications for policy, practice or additional research: Canadian cannabis package, labeling and warning regulations present a first good step. However, there are many lessons that can be applied from the tobacco labeling/health warning literature to help consumers make informed decisions such as:

- 1- Specifying size of health warnings and displaying them on the package top to attract attention
- 2- Prohibiting the use of light colors as they misleadingly denote healthier alternatives
- 3- Setting the shape of products to prevent the use of demographic-specific marketing, such as thin packages that serve as symbols for body image and attract females
- 4- Using direct and clear health warnings to reduce false optimism

Policy Analysis of Cannabis Sale and Distribution Practices Across Canada - Sawila Bayat

Co-authors: Ravinder Sandhu, Elizabeth Alvarez

Introduction/background: In November 2017, the House of Commons passed Bill C-45, enacting the Cannabis Act, which legalized the access, production, distribution and sale of cannabis in Canada. Since the vote, provinces have been tasked with determining how to implement this legislation.

Methods: This study presents a comparative policy analysis using the 3I+E framework, which explores the role of institutions, interests, ideas and external factors in influencing policy development. A literature review was conducted to compare and contrast the proposed sale and distribution practices in all provinces and territories. Specifically, the decision to incorporate either a public, private or mixed models of sale and distribution was explored. Data is gathered from the media and peer-reviewed sources using a document analysis while search strategies include websites, government sources, transcripts and other relevant documents.

Results and analysis: Each province and territory has set out unique procedures and policies with regards to cannabis sale and distribution since the introduction of Bill C-45. The decision to incorporate a specific sale and distribution model, however, has been influenced by a combination of government structures, policy legacies, interest groups, ideas and beliefs, and external factors. For example, by applying the framework, we were able

to observe how the major political shift from a liberal to conservative government influenced the decision to switch from a public to a mixed model of distribution in Ontario. These decisions and factors, in turn, shape the manner in which cannabis is controlled within the provinces and territories.

Conclusions and implications for policy, practice or additional research: It is important to draw the public health implications of these policy decisions to understand how to best evaluate the decisions, especially with regards to healthcare, vulnerable populations and educating the public.

Evaluative Conditioning and Approach Bias Modification Training Tasks: A Review of the Literature on Substance Use - Shannon Golsof

Introduction/background: Evaluative Conditioning (EC) and Approach Bias Modification Training (ABMT) tasks are two types of Cognitive Bias Modification techniques that have been used to alter implicit cognitions in a range of domains including nutritional sciences, psychology, and consumer behaviour research. The focus of this review is on the effectiveness of EC and ABMT in altering substance use cognitions. EC and ABMT have both been shown to be effective at modifying substance use cognitions. However, little research has been conducted on whether these techniques are effective at altering cannabis use cognitions, especially in at-risk populations such as youth and adolescents.

Methods: An extensive review of the literature from the early 1950's to present day was conducted examining EC and ABMT tasks and their effectiveness in changing implicit and explicit cognitions. Relevant search terms were entered into PsychINFO, PubMed, and Annual Review Psychology. A broad review was conducted with studies that did not include substance use, after which the results were narrowed down to include studies conducted with substance use cognitions.

Results and analysis: To date, there are currently no published studies examining the effectiveness of EC on modifying cannabis substance use cognitions. However, results from alcohol and other substance use domains suggest that EC and ABMT are effective at altering substance use cognitions. As of 2018, there were just 3 studies published that have examined the effectiveness of ABMT tasks at altering cannabis use cognitions and the findings demonstrated that ABMT is a promising tool.

Conclusions and implications for policy, practice or additional research: There is currently a lack of research that exists regarding the effectiveness of CBM techniques at altering cannabis use cognitions. Effective intervention techniques are needed in order to change problematic cognitions, which in turn can change behaviours. The application of cognitive bias modification for adolescent substance use will be discussed.

Are school cannabis policies associated with student engagement in cannabis? - Megan Magier

Co-authors: Karen A. Patte, Katelyn Battista, Scott T. Leatherdale

Introduction/background: Schools are increasingly concerned about implementing cannabis policies with the recent legalization of cannabis in Canada; however, little is known about how to effectively prevent cannabis use within school environments. The purpose of this study is to assess the cannabis policies present in secondary schools and examine associations with youth cannabis use.

Methods: This study used data from the COMPASS study (2017/2018 school year) including 66,434 students in grades 9 through 12 and the 122 secondary schools they attend in Ontario, British Columbia, Alberta, and Quebec. Student questionnaires assessed youth cannabis use and school administrator surveys assessed cannabis policies and policy violation consequences. Regression models tested the association between school policies and student cannabis use with student-level (grade, age, sex, tobacco use, binge drinking) and school-level covariates (province, school area medium income).

Results and analysis: For first offence violations of school cannabis policies: 92.6% of schools inform parents, 27.9% give detention, a fine is obtained at 6.6% of schools, 8.2% of schools assign more class work, 34.4% require a cessation program, 4.9% require students to help around the school, 40.9% of schools give a warning, 64% issue an in-school suspension, and 14.6% suspend students. Progressive discipline approaches for subsequent violations were reported by 90.9% of schools. Students were less likely to report current cannabis use if they attended schools that used additional class work as a first consequence (OR = 0.60) and the progressive discipline approach (OR = 0.74) for cannabis policy violation.

Conclusions and implications for policy, practice or additional research: Results reveal the current cannabis policy environment present in secondary schools. Various consequences for policy violations are being used by schools, yet the majority of first offence consequences were not associated with cannabis use. Longitudinal analyses in the COMPASS study will further examine the effectiveness of school policies and progressive discipline approaches in preventing youth cannabis use over time.

Carrying High: Reanalysis of In Utero Cannabis Exposure on Low Birth Weight - Stephanie Susman

Introduction/background: To reduce heterogeneity in a meta-analysis of the effect of in utero cannabis exposure on low birth weight by stratifying on the early-later date of publication.

Methods: Data from 7 individual studies in 2 countries were reanalyzed. Odds ratios of low birth weight— comparing the effects of in utero cannabis exposure with those not exposed to cannabis— were stratified by publication era (pre-1999 and post-2000). Pooled odds ratios (pOR) estimated the associations, and I^2 measured the heterogeneity. The 7 studies — including 1654 women who used cannabis while pregnant and 47,395 controls— used prospective information on cannabis exposure to limit recall bias.

Results and analysis: The reanalysis by stratification demonstrated a slight decrease in heterogeneity for post-2000 papers ($I^2=82%$, p -value < 0.02) and a major decrease for the pre-1999 papers ($I^2=0.00%$, p -value=0.89), as compared to the non-stratified papers ($I^2=83.03%$, 95% CI 66.41 to 91.42, p -value < 0.0001). There was a significant association between low birth weight in infants exposed to cannabis in utero in the post-2000 stratification (pOR=2.44: 95% CI 1.66 to 3.59), while the pre-1999 pORs were not significant (pOR=1.18: 95% CI 0.88 to 1.48). The original non-stratified result was (pOR=1.263: 95% CI 1.021 to 1.563, p -value < 0.031).

Conclusions and implications for policy, practice or additional research: The original pooled estimate underestimated the effect of cannabis on low birth weight, whereas the stratified analysis of more recent papers resulted in a much stronger effect of in utero cannabis exposure on low birth weight. Because the population effect of in utero cannabis on infants may increase with current legislation and higher THC potency, further research and surveillance are warranted.

A systematic review assessing the impacts of cannabis use on non-traffic injuries - Claire Benny

Co-authors: Demetra Yannitsos, Russell C. Callaghan

Introduction/background: Cannabis use can cause dose-related impairment in psychomotor function, reaction time, decision-making and concentration, as such, potentially increasing a user's risk of injury. The majority of existing literature on the subject solely examines traffic injuries; however, evidence suggests that traffic-related outcomes only constitute roughly ¼ of all cannabis-related injury events. As a result, it is critically important to examine the link between cannabis use and non-traffic injury. The current systematic review aims to answer the following question: Does cannabis use increase risk of non-traffic injuries?

Methods: The review followed PRISMA guideline methodology. Studies were identified from five academic databases by two independent reviewers, following which title and abstract screening were carried out by the same independent reviewers, using criteria establish a priori. The next step involved full-text reading of articles

deemed eligible from the title and abstract screening. Any conflicts in decision-making were addressed and consensus was reached by the two reviewers. A summary of characteristics table was used for data collection, allowing for narrative analysis and evidence-based conclusions.

Results and analysis: Initial references (n = 5427) were screened for title and abstract content, 110 studies were assessed for full-text eligibility, and a remaining 52 studies were eligible for review. The majority of studies assessed intentional injuries, such as self-harm and suicide (n = 32, 61.5%); and the remaining examined unintentional injuries (n = 25, 48.1%) such as those due to falls, burns, and being “struck against”; or a broad definition of injury (n = 12, 23.1%).

Conclusions and implications for policy, practice or additional research: The majority of the field is dominated by studies that assess cannabis use and suicidal and self-harm behaviours, and relatively few studies look at other non-traffic injury outcomes. Future research should examine a broader variety of outcomes and build on the gaps to expand the field and knowledge users understanding of the impacts of cannabis use.

Behavioural economics of cannabis: the impact of price on use of cannabis and alcohol - Kim Crosby

Co-authors: Michelle Thiessen, Zach Walsh

Introduction/background: With the recent legalization of recreational use of cannabis, there is increasing public interest regarding the impact of cannabis price on rates of cannabis use and use of other substances. Research suggests that individuals choose to substitute cannabis for alcohol and other drugs. An important factor in an individual's choice of substance is price of the commodity, and subsequently, a major indicator of the rewarding effects of a substance. The present research seeks to examine the effects of cannabis price on hypothetical purchases of cannabis and alcohol.

Methods: Undergraduates reporting cannabis use (n=100) are presented with 3 hypothetical purchasing tasks in an online task. In the first task, participants are asked how many grams of cannabis they would purchase across 17 broad price points ranging from \$0-\$500 per gram. In the second and third tasks, participants will indicate the amount of cannabis they would purchase when alcohol is concurrently available, with variable prices for both substances. Additional pertinent data will be collected, including substance use patterns and household income..

Results and analysis: Data collection is underway: completion March, 2019. Data will be analyzed across pre- and post- legalization contexts.

Conclusions and implications for policy, practice or additional research: Legalization of recreational cannabis has invigorated public interest of the impact of pricing policy on cannabis use and the use of other substances. The present research seeks to elucidate the relationship between price of cannabis and rates of purchase. In addition, this study seeks to understand how price of cannabis may affect purchase of alcohol. Given the novelty of cannabis legalization and the potential international extension of Canada’s precedent-setting policy, this study has the potential to inform substance use policy at the national and international level.

Sex, gender and cannabis: a scoping literature review on patterns of cannabis use and health effects -Natalie Hemsing

Co-authors: Lorraine Greaves, Nancy Poole, Andreea Catalina Brabete

Introduction/background: With the legalization of recreational cannabis use in Canada, there is a need to fully understand sex-specific health effects and gendered patterns of use, to inform tailored public education and awareness approaches.

Methods: In a health-policy research partnership with Health Canada, we applied a gender lens to examine cannabis risk perceptions, public education and awareness. We conducted a scoping literature review on the

impact of sex- and gender- related factors on patterns of use and the health effects of cannabis use. Literature published in English from 2007 to 2017 was identified from academic database searches, screened, data extracted, and findings summarized narratively. In addition, we applied a sex- and gender- based analysis to national surveys reporting on cannabis use and a cannabis indicator framework.

Results and analysis: Emerging evidence on the influence of sex- and gender- on patterns of use and the health effects of cannabis will be presented. For example, women and men metabolize cannabis differently due to differences in muscle mass and fat distribution, females transition from initiation to regular use faster than in males (similar to other substances), men who use cannabis are more likely to report dependence or severe dependence on cannabis than women, and male and female users report differences in forms of ingestion, effects and withdrawal symptoms. Recommendations for sex- and gender- responses public education, cannabis awareness and prevention approaches will be discussed.

Conclusions and implications for policy, practice or additional research: While evidence on sex, gender and cannabis use is constantly emerging, it is clear that research and program development is required to address sex and gender related factors affecting: patterns of cannabis use and exposure, dependence, and health effects of different cannabis products and routes of administration. This evidence could be used to inform more nuanced sex- and gender- informed cannabis responses, prevention campaigns and public health education initiatives.

Developing equitable approaches to prevention, harm reduction and the route of administration (ROA): aligning cannabis, tobacco and vaping products - Natalie Hemsing

Co-author: Lorraine Greaves

Introduction/background: Recreational cannabis use is legalized in Canada, and new products and devices for both nicotine and cannabis vaping are being introduced. There is a need for substance use practitioners, program and system planners, and governments to consider the harms and benefits of different routes of administration (ROA), to develop appropriate sex, gender and equity informed practices, policies, regulations and public health approaches.

Methods: A scoping review was conducted to synthesize literature published in the last ten years on sex and gender based factors, and cannabis, tobacco and electronic nicotine delivery systems (ENDS). A document review was also conducted to identify, compare and contrast existing messaging and regulation efforts for tobacco, nicotine vaping and cannabis vaping.

Results and analysis: The academic and grey literature and the Lower Risk Cannabis Use Guidelines recommend use of non-smoking methods such as vaping and edibles rather than combustible cannabis. Similarly, there is evidence that nicotine vaping is less harmful than tobacco smoking. Yet, new products are constantly emerging, and there may be varying risks depending on: flavours, carriers, and the heating capacity of vaping devices. However, there is a lack of evidence on the sex-specific health effects of varying ROA. Emerging evidence on gendered preferences and patterns of use and exposure, and implications for prevention and harm reduction will be presented. Findings and policy implications will be contextualized in evidence from the wider field of tobacco research on sex and gender based factors.

Conclusions and implications for policy, practice or additional research: There is a need for the introduction of consistent and coordinated responses to cannabis, tobacco and nicotine vaping to support harm reduction, develop accurate and effective public health messaging, and to achieve policy and regulatory consistency. As policy, practice and regulations evolve regarding cannabis and vaping products, it is critically important that evidence on sex, gender and equity be integrated into clear advice on ROA.

A snapshot of cannabis use and associated and perceived harms among Canadian students, pre-legalization - Sarah Konefal

Co-authors: Sarah Wallingford, Matthew Young

Introduction/background: Cannabis is the second-most widely used substance among Canadian students, after alcohol. With the primary aim of legalization to reduce harms associated with cannabis among youth, ongoing monitoring and surveillance of use, harms, and related perceptions is essential to understanding the impact of new policy and regulatory changes. The objective of this work was to assess baseline data on available cannabis indicators from national and provincial student drug use surveys.

Methods: Data on indicators of cannabis use, impaired driving, and perceived risks and harms were obtained from seven student drug use surveys from across Canada (two national, five provincial). Wherever available, prevalence estimates of each indicator were reported by sex, grade, and most recent survey cycle (2012-2015). Significant differences were assessed at $p < 0.05$.

Results and analysis: Indicators of cannabis use among students varied between national and provincial surveys with most reporting lifetime (21.8-33.3%) and past year (16.5-30.0%) use in their most recent cycle. Many noted a significant decrease in these estimates compared to previous survey cycles. Frequent use (i.e., past month and daily) was significantly higher among males. Estimates of cannabis-impaired driving were also assessed over lifetime (4.0-4.8%), past year (6.8-7.7%), and past month (2.2-2.3%), and were significantly higher among males. Across national surveys, the majority of students perceived regular cannabis use as associated with great risk to self, particularly amongst females and younger grades.

Conclusions and implications for policy, practice or additional research: These data provide key baseline information on the use, harms and related perceptions of cannabis among Canadian students, pre-legalization and highlight inconsistencies and gaps in indicators collected by current surveys. These findings will help inform the development of youth-targeted policies, programs, and community initiatives, as well as improved monitoring surveys and tools to continuously assess the impact of cannabis legalization in Canada.