

Cannabis-Related Content in North American Post-Secondary Curricula: A Scoping Review

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Abstract:

On 11 August 2016, the Canadian government announced the new Access to Cannabis for Medical Purposes Regulations (ACMPR) outlining reasonable uses of cannabis for medical purposes. Educators teaching cannabis-related content face new challenges, as this legalization requires a shift away from a focus on substance abuse towards incorporating economic, social, and health promotion aspects. I report on what curricula incorporating the concept of cannabis are offered by post-secondary institutions as well as how and for what purpose this content is offered. To do this, I conducted a scoping review of published and grey literature to determine the extent of the available research and content related to the concept of cannabis in post-secondary curricula in North America. Online search engines and multiple databases were mined for relevant data. I found that peer-reviewed nursing articles generally emphasize teaching cannabis in terms of substance abuse treatment rather than knowledge about medical cannabis. In

English-speaking Canadian universities/colleges that have a nursing school, various cannabis-related courses are being developed. These include different disciplines such as pharmacology, agriculture, and marketing and are delivered in the format of courses, workshops/seminars, and public presentations in classrooms or online. The results of this review suggest that a limited number of courses about medical cannabis are being offered in post-secondary institutions in North America. As legislation changes continue to impact post secondary education, curricula must be adapted to meet the new requirements.

Background

On 11 August 2016, the Canadian government approved the new Access to Cannabis for Medical Purposes Regulations (ACMPR), which allows Canadians to legally access cannabis for medical purposes (Medical Use of Marijuana, 2017). As a result, patients can register and order medical marijuana from a licensed marijuana producer with the support of their health care practitioners (Medical Use of Marijuana, 2017). Although access to medical cannabis has thus been legalized, use of cannabis for nonmedical purposes still remains illegal in Canada (Department of Justice, 2017). Individuals expressing a desire for the legalization of recreational marijuana have support from the Liberal government to promote this change. The report *A Framework for the Legalization and Regulation of Cannabis in Canada*, released on 30 November 2016, demonstrates the Liberal government's determination to change the paradigm of cannabis prohibition by outlining an implementation plan for legalizing recreational cannabis.

The reality that Canadians can now be prescribed cannabis legally by their health care practitioners, along with the movement toward legalizing recreational cannabis have important implications for educators; those who teach cannabis-related content face challenges because legalization requires a shift away from a

focus on substance abuse towards consideration of economic, social, and health promotion aspects.

Many studies have been conducted on cannabis use, however, few have been done on teaching about cannabis as a legal substance. Studies conducted about cannabis in post-secondary education have focused on the prevalence of cannabis on campus. For example, some research has shown that cannabis is the most prevalent illicit psychoactive substance used by adolescents and young adults in Canada, including secondary and post-secondary student populations (Adlaf, Begin, et al., 2005; Johnston, O'Malley, Bachman, & Schulenberg, 2009; Substance Abuse and Mental Health Services Administration (SAMHSA), 2009). Some articles have been written to identify the social implications of the new ACMPR. One, titled *Legalizing and Regulating Marijuana in Canada: Review of Potential Economic, Social, and Health Impacts* (Hajizadeh, 2016) focused on the potential economic, social, and health impacts of the ACMPR. The author noted that the new ACMPR would increase tax revenue through the taxation levied on marijuana products and would save tax dollars currently being spent on prohibition enforcement. According to Hajizadeh (2016), the new ACMPR would reduce crime related to the marijuana market and reduce the size of Canada's black market and its consequences on society. However, it would lead to some public health problems, including an increase in use of the drug, and in accidents and injuries related to its use. There is a gap in the literature with respect to teaching about medical cannabis in higher education.

Aim and objective

The aim of this study was to gain an understanding of what is currently being taught in post-secondary educational institutions with respect to cannabis and to investigate whether or how this is being adapted within the context of recent and proposed legislation. A scoping review (Joanna Briggs Institute, 2015)

using online search engines and multiple databases was used to examine the extent of the available peer reviewed research and grey literature related to the concept of cannabis in post- secondary curricula in North America with a focus of nursing. Grey literature includes studies that are not formally published in books or academic journals; this includes, for example, government documents, abstracts, dissertations, theses, project reports (Canada. Canadian Institute of Health Research, 2016).

The objective of this scoping review was to report on what curricula incorporating the concept of cannabis are offered to students by post-secondary institutions, as well as how and for what purpose these curricula are offered. Potential challenges or barriers related to incorporating the topic of cannabis into post-secondary curricula in North America are identified and discussed. Identification of gaps in the curricula is of great value, as it provides opportunities to think about questions that can be posed and usefully addressed when incorporating cannabis into post-secondary curricula. This report also outlines how the results of research on cannabis are being summarized and disseminated (Joanna Briggs Institute, 2015).

Methods

The methodology that this study employed is a scoping review. A scoping review, unlike other reviews that address relatively specific questions, is designed to “provide a map of the range of the available evidence [and] can be undertaken as a preliminary exercise prior to the conduct of a systematic review” (Joanna Briggs Institute, 2015, p 6). It does not involve assessment or appraisal of the evidence (Dijkers, 2015). I examined academic literature and grey literature that related to the concept of cannabis in post-secondary curricula in North America from English written articles only. Keyword combinations (cannab* OR marijuana OR hemp OR pot OR substance) (educat* OR “post secondary” OR

university OR college OR program OR “course of study” OR instruction OR curricular* OR training) (Canada OR US OR "United States") nurs* were used to search bibliographic databases such as MEDLINE®/PubMed®, CINAHL Complete, ERIC, Academic Search Complete, PsychINFO, Biomedical Reference Collection: Comprehensive, Medline with full text, Teacher Reference Center. Both expanders (apply equivalent subjects) and limiters (peer-reviewed, scholarly journals) were employed, and a time span of 2006 to 2017 was used.

For the grey literature, the review focused on exploring the content of nursing curricula available online. The keywords cannab*, marijuana, hemp, pot, and substance, were searched in the websites of 58 English-speaking Canadian post-secondary institutions that have a nursing school. The goal was to find existing curricula that incorporate the topic of cannabis.

Results

My search of academic literature generated a total of 3,016 results. Of these, 30 articles were identified as fitting the topic area and were included in the review (see Table 1). The authors of 24 of these articles suggested that post-secondary curricula should incorporate cannabis or substance education from the substance abuse perspective. Six articles supported the idea that education should focus on knowledge of the legal and regulatory aspects of medical cannabis and only three articles stated that it is really important to provide education on the administration and effects of medical cannabis.

The peer-reviewed nursing articles, most of which were published in the United States (US), emphasized a nursing approach to cannabis from a substance use perspective; this is shown as the first category in the “Focus” column in Table 1. The main point of these articles was that nurses, as the largest group of healthcare workers, as well as other health care professionals should gain knowledge about how to screen, intervene, and provide education about substance

use (Baez, 2005; Braxter et al., 2014; Broyles, Conley, Harding Jr., Gordon, 2013; Cooper, Doolin, Hemming, & Rowlands, 2006; Dickstein, 2014; Durkin, 2014; Finnell et al., 2014; Fornili & Haack, 2005; Gordon & Broyles, 2014; Kane, 2012; Madden et al., 2006; Marcellus, 2007; Mitchell et al., 2013; Puskar et al., 2013; Puskar et al., 2016; Puskar, Mitchell, Kane, Hagle, & Talcott, 2014; Seybold et al., 2014; Snow & Delaney, 2006; Sowers, Primm, Cohen, Pettis, & Thompson, 2016; Stoner, Mikko, & Carpenter, 2014; Thompson, 2013; Truncali et al., 2012; Weber & Snow, 2006; White et al., 2015). For example, Puskar, Mitchell, Kane, Hagle and Talcott (2014) stated that nursing faculty should receive education on evidence-based practice to screen and intervene in drug misuse. Mitchell, Puskar, Hagle, Gotham, Talcott, Terhorst, Fioravanti, Kane et al. (2013) agreed, noting that nursing students would benefit from training on substance use disorders. These authors also found that nursing students gained confidence in helping patients after being provided with such education. There were also articles that pointed out that administrators and staff need to be educated about recreational drug use and appropriate responses to drug abuse; in addition, screening instruments for drug abuse should be developed and implemented (DeBondt, 2006; Johannigman & Eschiti, 2013). Other than the substance use perspective, a number of articles focused on the legal and regulatory aspects of medical cannabis (DeBondt, 2006; Fan, 2015; Johannigman & Eschiti, 2013; Kaplan, 2015; Snow & Lu, 2012; White et al, 2015) (see Table 1). Since these mostly had a US perspective, however, they have limited direct relevance to Canadian law (DeBondt, 2006; Snow & Lu, J. H. 2012). Some articles recommended that nurses should be educated about the legal and regulatory aspects of medical cannabis. White, Duncan, Burr Bradley, Nicholson, Bonaguro and Abrahamson (2015) stated that long-term care facilities in the US should adopt their own policies in order to regulate use of medical cannabis by residents. The third focus of these nursing articles involved the administration and effects of medical cannabis

(DeBondt, 2006; Johannigman & Eschiti, 2013) (See Table 1). Fan (2015) noted that health care professionals should be informed about medical cannabis in order to provide care for patients.

Out of 58 English-speaking Canadian universities/colleges with a nursing school, 31 post-secondary curricula that included cannabis were identified (see Table 2). These involve different disciplines, such as pharmacology, agriculture, and marketing, and are delivered in a variety of formats, including courses, workshops/seminars, and public presentations in classrooms or online. Similar to the findings of the peer-reviewed academic articles, the content of many these courses cover three main categories: substance abuse, the legal and regulatory aspects of cannabis, and the administration and effects of medical cannabis from pathophysiology and pharmacology perspectives; a fourth category, business aspects, is included in some curricula. In this category, students learn how to grow cannabis and how to finance a cannabis enterprise.

The following are some examples of post-secondary curricula using cannabis-related content. The University of Calgary has a course called “Talking about marijuana: Answering patients’ questions about medical cannabis” (University of Calgary, 2016). It is offered in the evenings in the Cumming School of Medicine for family physicians, nurse practitioners and other healthcare professionals and teaches about the pharmacology of medical cannabis. The University of Alberta offers a course named “Topics in Global History” (University of Alberta, 2017). In this three credit course, one of the topics covered relates to the social, cultural and political histories of criminalized drugs such as cannabis. The University of Victoria offers a psychology course titled, “Drugs & Behavior: Basic Principles.” One of the topics introduces various classes of psychoactive drugs, including cannabis (University of Victoria, 2016); it discusses the behavioral pharmacology of cannabis and its effect on human bodies. Kwantlen Polytechnic University offers the “Cannabis Professional

Series” (Kwantlen Polytechnic University, 2017). This suite of online courses provides education on the production, and marketing of cannabis and the financing of cannabis-related businesses.

Discussion

In general, the findings of this review showed that while authors of academic articles are beginning to urge the importance of developing courses about medical cannabis, only a few courses have been developed to date in post-secondary curricula. Moreover, among the limited number of courses currently offered in post secondary institutions, most still focus mainly on the substance use perspective. For example, they focus on the mechanism and treatment of cannabis abuse, not the pharmacology of medical cannabis. How many of these courses are, or will be, part of nursing school curricula is still unclear at this stage.

There are several potential challenges and barriers faced when incorporating cannabis into post-secondary curricula in Canada. The major challenge is the fact that cannabis traditionally has been illegal in Canada and it takes time for people to become accustomed to substantial legal changes (Hajizadeh, 2016). Although only a few states have legalized cannabis (“States Marijuana Laws in 2018 Map”, 2018), the generally faster pace at which legalization has occurred in the US compared to Canada explains why most of the information that demonstrated the significance of education on medical cannabis was presented from a US rather than a Canadian perspective.

This is the first review to identify gaps that exist in the research and curriculum related to cannabis. Its importance was confirmed when the results were presented at Western & North-Western Region Canadian Association of Schools of Nursing (WNRCSN) 2017 conference in Victoria. The conversation in the audience showed that educators were seeking information on this topic and were concerned about the implications of ACMPR on the education sector.

Although this study initially intended to identify specific questions that can be posed and usefully addressed when incorporating cannabis into post-secondary curricula, it was clear that much work remains to be undertaken in this area.

The move to legalize cannabis has invited extensive discussion on societal implications, since cannabis use has been prohibited in Canada for almost 100 years (Canada. Health Canada, 2016). It is evident from this review that adapting to a change in these rules may be quite challenging. As marijuana use for medical and recreational purposes increases, the need for current education that keeps up with the changes is essential. These courses are especially important for health care providers, who will require the knowledge to prescribe cannabis as a medication. This report reviewed both the academic and grey literature and has provided a preliminary map of the current state of marijuana education in North America. This information has not previously been examined, and is important because gaps in the literature need to be identified to make sure appropriate education will be provided to match the legalization of medical cannabis. The results of this study will be used as a starting point for a systematic review of the literature and a future analysis of the strengths and limitations of curricular content that will inform the direction nurse educators take as they move forward in the context of today's changing legislation. The next stage of this project will be to distribute surveys to nurse educators to determine the status of any curricula changes that are not discoverable through online searches.

Strengths and Limitations of the Study

This research topic is relatively new, as the ACMPR was approved in 2016 by the Canadian government. Although the topic is receiving extensive media coverage, as yet only a limited number of publications on cannabis related curricular content are available. The search for curriculum content was conducted online and some course information has not yet been uploaded to university

websites. Also, the online information is constantly changing due to the development of new courses; as a result, this research may lack up-to-date course information. A future recommendation would be to contact universities and colleges directly by email or phone to request up-to-date information.

Conclusion

This research reviewed cannabis-related content in North American post-secondary curricula through an examination of the academic and grey literature using multiple bibliographic databases and the websites of a number of post-secondary institutions. With the enactment of ACMPR, cannabis, which has traditionally been seen as an illegal substance by Canadians, is legally approved for medical purposes; this change has resulted in extensive discussion about the implications of cannabis, and these new laws, on society. This review is important, since no research has so far been conducted on the important implications of ACMPR on post-secondary curricula in North America. The findings of this research showed that literature gaps exist; most of the articles still focus on cannabis as an illegal substance. In addition, only a few courses have been developed to date in post-secondary curricula to teach about the use of medical cannabis; this is insufficient to provide education on medical cannabis. As a result, it is recommended that post-secondary institutions should develop more such courses to inform individuals, especially health care providers who have the right to prescribe medical cannabis. As a scoping literature review, this study is a starting point for a systematic literature review; it can also be used to inform future studies of cannabis-related education.

Dissemination

The results of this research were presented at the Western and North-Western Region Canadian Association of Schools of Nursing (WNRCSN) 2017

conference held in Victoria in February, 2017. The audience was comprised of nurse educators from across Western Canada and the session prompted a lengthy discussion on the topic. The review was also presented at the Thompson Rivers University Undergraduate Research Conference in April, 2017.

Conflict of Interest

This research was funded by Undergraduate Research Experience Award Program. This is a scholarship provided through TRU that provides an opportunity for undergraduate students to perform original research. The student and supervisor have no conflict of interest to disclose in relation to this research project.

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Table peer reviewed literature related to higher education on cannabis.

| Title | Author(s) | Publication | Date of publication | Focus | | |
|--|--|----------------------------------|---------------------|--------------------------------------|--|---|
| | | | | Drug abuse and treatment perspective | Knowledge of legal and regulatory aspects of medical marijuana | Administration and effects of medical marijuana |
| 1 An Introductory Clinical Core Course in Psychiatric Management: An Innovative Lifespan Course Blending All Nurse Practitioner Majors | Weber, MW; Snow, DS | Perspectives in psychiatric care | 2006 | ✓ | | |
| 2 A physician-centered approach to addiction identification and treatment misses the opportunity for interdisciplinary solutions | Gordon, AG; Broyles, LB | Substance abuse | 2014 | ✓ | | |
| 3 A Scoping Review of Interdisciplinary Collaboration in Addictions Education and Training | Broyles, LB; Conley, JC; Harding, JH; Gordon, AG | Journal of addictions nursing | 2013 | ✓ | | |
| 4 Comparison of drugs and medical marijuana | DeBont , ED | Oncology nursing forum | 2006 | | | ✓ |

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|---|---|---|---|------|---|--|
| 5 | Development of an objective structured clinical examination (OSCE) for practicing substance abuse intervention competencies: An application in social work education | Baez, AB | Journal of social work practice in the addictions | 2005 | ✓ | |
| 6 | Educational issues and innovative opportunities when integrating primary care and psychiatry: Training for 21st century competent, collaborative, medical professional development, part one: The need | Dickstein, LD | Directions in psychiatry | 2014 | ✓ | |
| 7 | Effects of Screening, Brief Intervention, and Referral to Treatment (SBIRT) education and training on nursing students' attitudes toward working with patients who use alcohol and drugs | Puskas, KP; Gotham, HG; Terhorst, LT; Hagle, HH; Mitchell, AM; Braxter, BB; Fioravanti, MF; Kane, IK; Talcott, | Substance abuse | 2013 | ✓ | |

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|----|---|--|---|------|---|--|
| | | KT; Womner, GM; Burns, HB | | | | |
| 8 | Engaging health professional students in substance abuse research: Development and early evaluation of the SARET program | Truncali, AT; Kalet, AK; Gillespie, CG; More, FM; Naegle, MN; Lee, JL; Huben, LH; Kerr, DK; Gourevitch, MG | Journal of addiction medicine | 2012 | ✓ | |
| 9 | Essential psychiatric and substance use competencies for the registered nurse: Crucial and complex knowledge, skills, and abilities | Kane, CK | Archives of psychiatric nursing | 2012 | ✓ | |
| 10 | Evaluation of training to reduce provider bias toward pregnant patients with substance abuse | Seybold, DS; Calhoun, BC; Burgess, DB; Lewis, TL; Gilbert, KG; Castol, AC | Journal of social work practice in the addictions | 2014 | ✓ | |
| 11 | Faculty Buy-In to Teach Alcohol and Drug Use Screening | Puskas, KP; Mitchell, AM; | Journal of continuing | 2014 | ✓ | |

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|----|--|--|-----------------------------------|------|---|---|---|
| | | Kane, IK; Hagle, HH; Talcott, KT | education in nursing | | | | |
| 12 | Genetics and Genomics: Unraveling New Opportunities for Addiction Treatment and Education | Snow, DS; Lu, JL | Journal of addictions nursing | 2012 | ✓ | | |
| 13 | Historical and regulatory issues of medical marijuana | Debondt, ED | Oncology nursing forum | 2006 | | ✓ | ✓ |
| 14 | Interdisciplinary benefits in project mainstream: a promising health professions educational model to address global substance abuse | Madden, TM; Graham, AG; Straussner, LS; Saunders, LS; Schoener, ES; Henry, RH; Marcus, MM; Brown, RB | Journal of interprofessional care | 2006 | ✓ | | |
| 15 | Interdisciplinary research training in substance abuse and addictions | Thompson, ET | Journal of addictions nursing | 2013 | ✓ | | |
| 16 | Interprofessional screening, brief intervention, and referral to treatment (SBIRT) education for registered nurses and | Puskar, KP; Kane, IK; Lee, HL; Mitchell, AM; Albrecht, SA; Frank, LF; Hagle, HH; | Issues in mental health nursing | 2016 | ✓ | | |

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|----|--|---|--|------|---|---|---|
| | behavioral health professionals | Lindsay, DL; Houze, MH | | | | | |
| 17 | Legalization of marijuana for non-medical use: health, policy, socioeconomic, and nursing implications | Durkin, AD | Journal of psychosocial nursing and mental health services | 2014 | ✓ | | |
| 18 | Looking back and thinking ahead about substance misuse: fifty years of practice in the Canadian Nurse | Marcellus, LM | Journal of addictions nursing | 2007 | ✓ | | |
| 19 | Medical marijuana: Legal and regulatory considerations | Kaplan, LK | The nurse practitioner | 2015 | | ✓ | |
| 20 | Medical Use of Marijuana in Palliative Care | Johannigman, SJ; Eschitt, VE | Clinical journal of oncology nursing | 2013 | | ✓ | ✓ |
| 21 | Nursing students' experiences with screening, brief intervention, and referral to treatment for substance use in the clinical/hospital setting | Braxter, BB; Puskar, KP; Mitchell, AM; Hagle, HH; Gotham, HG; Terry, MT | Journal of addictions nursing | 2014 | ✓ | | |
| 22 | Participants' evaluation of a training programme in dual diagnosis | Cooper, PC; Doolin, ND; | Nursing standard | 2006 | ✓ | | |

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|----|--|---|--|------|---|---|--|
| | | Hemming, LH; Rowlands, ER | | | | | |
| 23 | Promoting Early Intervention for Substance Use Disorders Through Interdisciplinary Education for Health Professionals | Fornili, KF; Haack, MH | Journal of addictions nursing | 2005 | ✓ | | |
| 24 | Screening, brief intervention, and referral to treatment: a need for educational reform in nursing | Murphy-Parker, DM | Nursing clinics of North America | 2013 | ✓ | | |
| 25 | Screening, brief intervention, and referral to treatment: Overview of and student satisfaction with an undergraduate addiction training program for nurses | Mitchell, AM; Puskas, KP; Hagle, HH; Gotham, HG; Talcott, KT; Terhorst, LT; Fioravanti, MF; Kane, IK; Hulsey, EH; Luongo, PL; Burns, HB | Journal of psychosocial nursing and mental health services | 2013 | ✓ | | |
| 26 | Substance abuse policies in long-term care facilities: A survey with implications for | White, JW; Duncan, DD; Bradley, DB; | Educational gerontology | 2015 | ✓ | ✓ | |

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|----|--|---|--------------------------------------|------|---|---|--|
| | education of long-term care providers | Nicholson, TN; Bonaguro, JB; Abrahamson, KA | | | | | |
| 27 | Substance use and recovery: charting a course toward optimism | Snow, DS; Delaney, KD | Archives of psychiatric nursing | 2006 | ✓ | | |
| 28 | Transforming psychiatry: A curriculum on recovery-oriented care | Sowers, WS; Primm, AP; Cohen, DC; Petts, JP; Thompson, KT | Academic psychiatry | 2016 | ✓ | | |
| 29 | Update on Medical Marijuana | Fan, N F | Delaware medical journal | 2015 | | ✓ | |
| 30 | Web-based training for primary care providers on screening, brief intervention, and referral to treatment (SBIRT) for alcohol, tobacco, and other drugs. | Stoner, SS; Mikko, AM; Carpenter, KC | Journal of substance abuse treatment | 2014 | ✓ | | |

Table 2. Curricula that included cannabis offered by 58 English-speaking Canadian universities/colleges with a nursing school. Note that in this table, S = substance abuse, A = administration and effects of medical cannabis from pathophysiology and pharmacology perspectives, L = Legal and regulatory aspects of cannabis, B = business aspects.

| | University/College | Course | Discipline | Delivery Format | Focus | Who Can Attend |
|----|---------------------------------|---|-------------|--------------------|-------|------------------------|
| 1 | Athabasca University | PSYC 450: Drugs and Behaviour | Psychology | Course (3 credits) | S A | Undergraduate students |
| 2 | Camosun College | PSYC 245: Drugs and Behaviour | Psychology | Course (3 credits) | S A L | Undergraduate students |
| 3 | Cape Breton University | BIOL 2225: Drugs and Behavior | Biology | Course | S A | Undergraduate students |
| 4 | Centennial College | GENE-133: Snack, Crack, and Pot | Agriculture | Course | S A L | Undergraduate students |
| 5 | Dalhousie University | AGRN 2000: Organic Field Crop Management | Agriculture | Course (3 credits) | | Undergraduate students |
| 6 | Kwantlen Polytechnic University | MEDM 9001: Plant Production and Facility Management | Trade | Suite of Course | L | Anyone |
| 7 | | MEDM 9002: Marketing, Sales and Drug Development | Trade | Course | A | Anyone |
| 8 | | MEDM 9003: Financing a Cannabis Enterprise in Canada | Trade | Course | | Anyone |
| 9 | | MEDM 9004: Cannabis: Plant Science | Trade | Course | | Anyone |
| 10 | | The Introduction to Professional Management of Medical Marijuana Facilities in Canada | Trade | Course | A L | Anyone |

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|----|-----------------------|--|--------------|---|---|---|---|---|-------------------------|
| 11 | Nipissing University | How Chronic Cannabis use in Adolescence Could Affect the Developing Brain | Psychology | Special Lecture | S | | | | Anyone |
| 12 | St. Lawrence College | ADMH 3: Chemical Dependency and Substance Abuse | Chemistry | Course | S | A | | | Undergraduate students |
| 13 | Queen's University | Medical Marijuana Today: A Focus on Palliative Care | Medicine | Seminar | | A | L | | Health region employees |
| 14 | University of Alberta | Pharmacology 305: Pharmacology of Drug Abuse | Pharmacology | Course (3 credits) | S | | | | Undergraduate students |
| 15 | | HIST 121: Topics in Global History | History | Course (3 credits) | | | L | | Undergraduate students |
| 16 | University of Calgary | Cannabis - Implications for Health: Understanding Its Uses, Risks and Benefits | Medicine | Course | S | A | | | Health region employees |
| 17 | | Cannabis Legalization 101 - What You Need to Know | Medicine | Presentation | | | L | B | Health region employees |
| 18 | | Talking About Marijuana: Answering Patients' Questions About Medical Cannabis | Medicine | Course (Per evening: 2.0 credits; Fall Semester – 22.0 credits; Winter Semester – 20.0 credits) | | A | | | Health region employees |
| 19 | | Prescribing Medical Marijuana - Evidence and Issues | Medicine | Workshop | | A | | | Health region employees |

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|----|------------------------|--|-----------|--|---|---|-----|-------------------------|
| 20 | | Perceptions and Evidence on the Health Effects of Marijuana Use: A National Survey and Systematic Literature Review | Medicine | Seminar | S | A | L | Anyone |
| 21 | | Marijuana Use and Its Effects on Youth and Adolescents | Medicine | Keynote of Conference- 41ST Annual Family Practice Review and Update Course– Pearls for Practice | S | A | | Health region employees |
| 22 | | Understanding and Addressing Adolescent marijuana and Tobacco Co-use: Qualitative Findings from B.C.'s TRACE Project | Medicine | Seminar | S | | L | Health region employees |
| 23 | | Pressing Issues in Substance Use - Fentanyl and Marijuana Legalization | Medicine | Presentation | | | L | Health region employees |
| 24 | | LWSO 413-02: Liberalism | Sociology | Course | | | L | Undergraduate students |
| 25 | University of Manitoba | BIOL1300: Economic Plants | Biology | Course (3 credits) | | | L B | Undergraduate students |
| 26 | | BIOL 3290: Medicinal and Hallucinogenic Plants | Biology | Course (3 credits) | | | L | Undergraduate students |

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|----|---|---|----------------|---------------------|---|---|---|---|-------------------------|
| 27 | University of Northern British Columbia | The Irrational Use of Medical Marijuana in Canada | Medicine | Public Presentation | S | A | | | Anyone |
| 28 | University of Ottawa | Better Prescribing | Medicine | Workshop | | A | | | Health region employees |
| 29 | University of Victoria | Psychology 345A: Drugs and Behavior: Basic Principles | Psychology | Course (3 credits) | | A | | | Undergraduate students |
| 30 | | Biology 334: Plants and People | Biology | Course (3 credits) | S | | L | B | Undergraduate students |
| 31 | University of Western Ontario | HS3052: A Brief History of Drug Use in Western Cultures | Health Science | Course | | | L | | Undergraduate students |
| 32 | | Psychology 2020: Drugs and Behaviour | Psychology | Course (3 credits) | S | A | | | Undergraduate students |

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