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## From didactic to dialogue: Assessing the use of an innovative classroom resource to support decision-making about cannabis use

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### Abstract

**Aims:** In most countries, cannabis use rates are highest among young people. Efforts invested in cannabis prevention programmes have had limited success. In part, this may be attributed to a dearth of meaningful discussion in classroom settings on the topic and scarcity of credible resources. Although young people want opportunities to engage in dialogue focussed on cannabis, educators often feel unprepared to facilitate such discussions. **Methods:** In this knowledge translation study based on recent ethnographic findings, a film was created to explore decision-making and cannabis use among young people. Accompanying curricular materials were developed to support adult facilitators in leading group discussions. **Findings:** The film-based resource was used in 55 sites across Canada by 48 facilitators (school staff, public health professionals and youth workers); the film was viewed by more than 2500 students. Qualitative content analysis of facilitator evaluations along with telephone interviews revealed the impact of using the innovation. Facilitators adapted the resource in a variety of classes where in-depth discussions occurred, generating critical self-reflection. **Conclusions:** The diffusion of this drug education innovation underscores the importance of youth engagement in prevention programmes. Prevention approaches that accommodate inclusive and balanced discussion about cannabis use can support young people in their decision-making.

### Keywords

Cannabis, decision-making, drug education, harm reduction, prevention, school context, student, young people, qualitative research, teachers

### History

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### Introduction

The use of psychoactive substances, including cannabis, is not a new phenomenon. Indeed, recreational substance use has been ongoing for ‘‘millennia’’ (Bennett, 2014; Leyton & Stewart, 2014). Worldwide, young people use cannabis more than any other illicit substance. In Canada, the substance is widely used; although sanctioned for the treatment of a number of medical conditions, it remains an illegal substance. A UNICEF report (2013) suggests that Canadian young people aged 11–15 years have the highest rate of cannabis use among 29 developed countries with approximately 28% having used cannabis at least once in the past year. For most young people, cannabis use does not develop into problematic use (Hall & Degenhardt, 2009); however, research emphasises the known health harms associated with using the substance, particularly with early initiation (Hall, 2015; Volkow, Baler, Compton, & Weiss, 2014). Given the prevalence of cannabis use among Canadian adolescents, it is important to consider approaches

that encourage young people to reflect upon the potential risks associated with use at this age.

Many substance prevention programmes employ abstinence as the criterion for success (Bennett, 2014); however, in the case of cannabis, the validity of this approach has been questioned given the prevalence of its use among young people (Lester et al., 2014; Midford, 2010). It has been argued that rather than pathologising use, prevention programmers adopt pragmatic, harm-reduction strategies that consider how young people perceive the potential harms and benefits of substance use (Dietze, 1998). Public health approaches to reducing problematic patterns of substance use have long emphasised evidence-based interventions (Hyshka, 2013; Lester et al., 2014) that include prevention and harm reduction (Beck, 1998; Duncan, Nicholson, Clifford, Hawkins, & Petosa, 1994).

Findings from past ethnographic studies carried out in British Columbia, Canada revealed that young people use cannabis for different reasons yet have few opportunities to engage in relevant and non-judgmental dialogue about their use with the adults in their lives (Bottorff, Johnson, Moffat, & Mulvogue, 2009; Johnson et al., 2008; Moffat, Jenkins, & Johnson, 2013). Some young people described how they used cannabis recreationally; others shared how they used the substance to manage uncomfortable feelings (depression, anxiety and stress), insomnia, problems with concentration and physical pain. In the course of being interviewed, young people often expressed appreciation for the opportunity to

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reflect upon the role of cannabis in their lives and/or the lives of their peers. These youth were eager to speak about the complexities of their decision-making about cannabis and indicated that they had few opportunities to discuss this topic in a supportive atmosphere that encouraged self-reflection. In Canada, youth perspectives remain largely absent from prevention efforts focussed on cannabis. In a report from the Canadian Centre on Substance Abuse addressing young people's perspectives for future cannabis prevention initiatives, youth recommended increased focus on cannabis content in prevention programmes, earlier delivery of prevention efforts, strong connections with youth by those delivering prevention messages, approaches aimed at reducing harms associated with cannabis, and avoidance of scare tactics (Porath-Waller, Brown, Frigon, & Clark, 2013).

Although many young people use cannabis, the topic is often not addressed in drug education programmes in Canada where prevention efforts remain fragmented. There are no systematic programming initiatives nationally and the focus on cannabis varies widely across jurisdictions. Given the amount of time that young people spend within the school environment, there is a potential role for school staff in cannabis prevention. However, research findings suggest that educators perceived barriers to engaging in balanced discussion on the complex topic of cannabis (Johnson et al., 2008). In addition, some educators described feeling limited in their ability to engage in conversations with students because of a lack of supportive resources.

There are notable limitations with the current delivery of drug prevention education (Flynn, Falco, & Hocini, 2015). Failure to resolve conflicting positions with regard to "best" strategies to address illicit substance use have contributed to a lack of new programming and resources. In light of this conflict, drug prevention programmes are often influenced by political and ideological factors that dictate programme content (Midford, 2010). School-based prevention programmes have been dominated by didactic-styled approaches (Faggiano et al., 2008) that focus on the transmission of knowledge and employ scare tactic techniques in which an authority figure emphasises the risks of substance use with students positioned as "passive recipients" (Bennett, 2014). These top-down models have been criticised for focussing on individual-level behaviour and disregarding the context of use (Blackman, 2004; Skager, 2008). Furthermore, it is recognised that information alone does not prevent the initiation of substance use (Toumbourou et al., 2007), nor alter drug use patterns (Bennett, 2014; Lennox & Cecchini, 2008). In contrast, more promising approaches include skills-based prevention strategies that focus on personal and interpersonal development; social influence prevention models emphasise life skills (i.e. decision-making and refusal skills) and include participatory activities (Botvin & Griffin, 2007). Mixed programmes that integrate elements from different models (i.e. affective, informational and social learning) have been found to be more effective when compared to didactic presentations alone (Kell, 2011; Stead et al., 2010). However, no details are available regarding subsequent in-class discussion, nor how such approaches support youth decision-making.

Two meta-analyses (Porath-Waller, Beasley, & Beirness, 2010; Tobler, Lessard, Marshall, Ochshorn, & Roona, 1999)

and one systematic review (Lemstra et al., 2010) have specifically examined the effectiveness of cannabis prevention programmes and concluded they had the potential to reduce cannabis rates in young people. While some research suggests "optimal" programme components (i.e. students' age, programme facilitator, duration and booster sessions), comprehensive and evidence-based cannabis prevention programming is lacking (Norberg, Kezelman, & Lim-Howe, 2013). In addition, concerns regarding methodological issues have been documented such as the use of one-tail tests of statistical significance and the failure to use statistical techniques that correct for data clustering (Gorman, 2011). Internet-based harm minimisation programmes have gained appeal in Australia and the UK (Newton, Conrod, Rodriguez, & Teesson, 2014; Vogl, Newton, Champion, & Teesson, 2014). These interventions are praised for a high degree of fidelity and for eliminating time consuming and costly teacher training (Newton, Vogl, Teesson, & Andrews, 2011). The importance of dialogue during programme delivery is largely absent in the prevention literature despite findings that classroom discussion is effective for supporting the development of critical thinking (Rosenbaum, 2014). There are opportunities for alternatives including innovative approaches in cannabis prevention.

While classroom-based programmes that encourage discussion can be effective, it is not clear what might motivate educators to use such approaches. Nor is it understood how some educators might adapt and modify curricular materials to meet the needs of students. In light of this gap, the research objectives guiding this knowledge translation study were twofold: to assess what motivated adult facilitators to utilise an innovative evidence-informed film-based resource, and to examine how they adapted and evaluated its use in classroom settings.

## Methods

This knowledge translation study used qualitative, descriptive methods and was grounded in Rogers' (2003) model of innovation diffusion. Diffusion theory offers a useful framework for understanding the uptake of prevention and drug use programmes (Ferrence, 1995, 2001) and includes the stages of adoption, implementation and institutionalisation of programming resources. Drawing on the attributes of this model (Rogers, 2002), data collection and analysis focussed on facilitators' descriptions of the innovation in relation to its relative advantage (in comparison to other educational approaches), complexity (ease of use), compatibility (fit within the classroom setting), trialability (how it was modified and adapted) and observability (visible outcomes of using the novel approach). At the conclusion of this study, the resource was translated into French and made available to educators and the general public; it can be downloaded (<http://bit.ly/1KQ5pC0>).

## The innovation

This project focussed on the dissemination of a film (CYCLES) and an accompanying facilitator's guide that included two lesson plans with group learning activities designed to promote critical thinking (e.g. role playing,

working with dilemmas). The film was based on qualitative research findings that focussed on teenagers' experiences with cannabis (Bottorff et al., 2009; Johnson et al., 2008; Moffat, Johnson, & Shoveller, 2009). Qualitative researchers have used similar arts-based approaches, transforming research findings into scripts and film (Sandelowski, Trimble, Woodard, & Barroso, 2006), recognising that these approaches to knowledge translation can enhance engagement of participants and enrich communication (Boydell, Gladstone, Volpe, Allemang, & Stasiulis, 2012). The direction for our approach was guided by the work of Lohan, Cruise, O'halloran, Alderdice, and Hyde (2011) who developed an interactive video drama exploring young men's attitudes and decision-making within the context of unplanned pregnancy therefore bringing a relevant yet sensitive topic into classrooms in Northern Ireland.

The CYCLES resource (film and accompanying facilitator's guide) was designed to support dialogue with young people on the topic of decision-making related to cannabis use. The fictional drama depicted in the film revolves around two young people, Olin and Lisa, who use cannabis for different reasons, hence bringing life to earlier research findings. The professionally-written film script was based on core content identified by the research team, and emphasised the complexity of choosing to use cannabis. The viewer is invited to consider the consequences of the main characters' choices and reflect on personal decision-making. The aim of the film was not to use a fact-based approach to drug education, but instead to encourage dialogue. Two versions of the film were developed: a 28-minute uninterrupted format and a 34-minute interactive format in which the film pauses allowing the viewer to contemplate options and respond to the characters' decisions using an interactive worksheet (see Appendix).

Throughout the process of developing the film and supportive materials, we worked in close collaboration with young people seeking feedback to ensure that the content resonated and that their perspectives were being authentically portrayed. To that end, one youth advisor participated in briefing the scriptwriter. In addition, a core group of youth advisors provided valuable feedback during the development of the script. Once a draft was ready, the script was workshopped in classrooms and focus groups and changes were incorporated in subsequent drafts. Youth advisors also provided valuable insights on rough cuts of the film including the use of youth-friendly language and the wording of the interactive questions embedded in the film. Teachers were present during some of the workshop sessions, and their comments helped to inform the development of the facilitator's guide. During the film-making phase, we partnered with school-based drug-prevention workers who provided support, and facilitated access to a school location for filming purposes. This input from students, educators and drug-prevention workers was instrumental. As Green, Ottoson, Garcia, and Robert (2009) remind us, end-users determine the relevance and usability of research-based innovations and must be considered early in the development process.

Using the successful classroom materials developed by Lohan's team (Aventin, Lohan, O'halloran, Kelly, & Henderson, 2013) as a starting point, we created curricular materials. In addition to proposed lesson plans, the facilitator's

guide included background materials, a script for introductory comments for the film, follow-up discussion topics, student interactive worksheets and a synthesis of the evidence on cannabis. Strategies were proposed to prepare facilitators for potentially sensitive classroom discussion: a framework for confidentiality, an optional private debrief afterwards and familiarity with professional resources for students who self-identified as at risk of developing, or already engaged in problematic cannabis use. These curricular materials were piloted during a series of test screenings of the film. Feedback on these materials was also received from stakeholder partners.

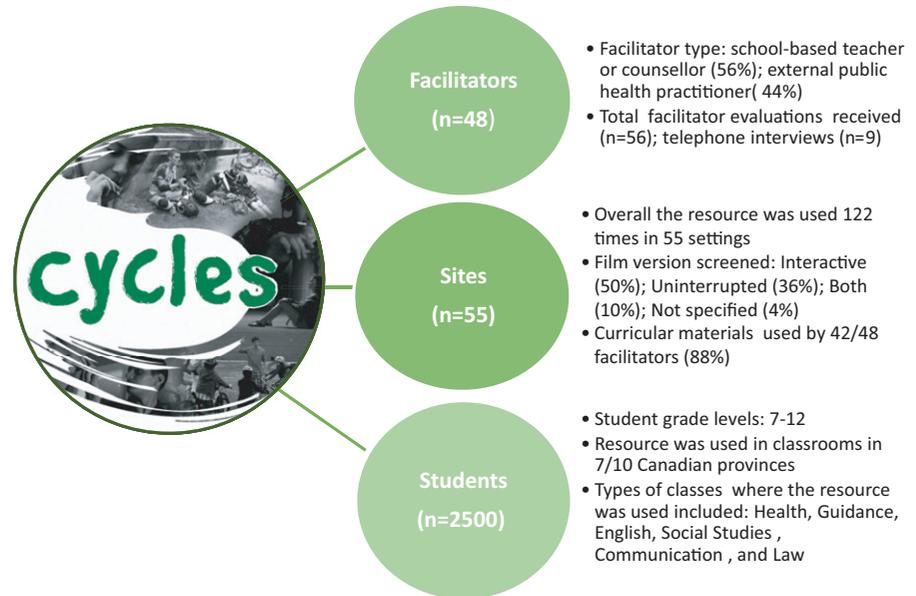
## Sample

The CYCLES resource was developed for use by Canadian teachers and adult facilitators in high school classrooms and other group settings (Grades 8–12 inclusive). Recruitment of group facilitators took place in waves via multiple methods over the course of six months in 2014: study information was disseminated via the Centre for Addictions Research of BC and the Canadian Centre on Substance Abuse, while targeted postings included professional groups (i.e. principals, teachers and school counsellors). In addition, interest was generated by local and national media coverage when the film premiered.

The initial sample included 53 participants from seven Canadian provinces who provided consent in which they agreed to: review the resource (both versions of film and facilitator's guide), use the resource in a classroom or other suitable setting and report on its use. Participants were asked to follow the guidelines outlined in the materials and to deliver lessons, tailoring them as they saw fit. Eligibility criteria included Canadian adult facilitators interested in providing feedback and evaluating the English version of the innovation. Two francophone participants from Quebec, a province that is primarily French-speaking, opted to use the English version of the resource in classroom settings where students were bilingual in English and French; their evaluations were submitted in English. Most participants ( $n=28$ ) were school staff (e.g. teachers, schools counsellors), which included teachers from three alternative schools. Alternative schools are part of the Canadian public school system with specialised programme delivery to meet educational, social and emotional needs of students not met in traditional school programmes. Another group ( $n=20$ ) consisted of public health practitioners (e.g. public health nurses, prevention educators, counsellors) who took the resource into school settings. The third category ( $n=5$ ) included youth workers and counsellors at an Alternative to School Suspension programme associated with Addiction Services. In two instances, a teacher and outside facilitator (i.e. a public health nurse and counsellor) delivered the session together; for the purpose of data collection, a single evaluation was submitted. In this study, school staff and outside facilitators assumed the same role in delivering the resource and leading the follow-up discussion. While some participants had previously delivered drug education, others had minimal experience and a few (including public health practitioners) identified as having no experience.

Labour issues towards the end of the school year in one province impacted the final sample. Three individuals were

Figure 1. Cycles resource – film and facilitator's guide.



unable to use the innovation with students during the study timeline, while two people indicated their intention to use the innovation but could not be reached by the end of the study leaving a final sample of 48 participants. Multiple film screenings occurred at certain schools and some teachers used the resource in different classes and grades; some external facilitators took the resource into different sites when they were associated with more than one school. In total there were 122 reported screenings for over 2500 students in 55 different settings (Figure 1). The study protocol was approved by the ethics review board at the University of British Columbia, Vancouver, Canada.

### Data collection and analysis

Data collection took two primary forms: self-administered evaluation surveys and open-ended telephone interviews (Figure 1). The evaluation was intended to document each use of the resource and included structured and open-ended questions focussing on the setting, facilitator motivation for adopting the resource, processes used, challenges experienced and perceived impact of the film and discussion. When facilitators used the resource more than once, most submitted one survey ( $n=18$ ) in which they expanded on using the resource during different sessions; many incorporated students' comments as direct quotes in their evaluation that encapsulated facilitators' impressions of the impact of using the innovation. Recorded telephone interviews took place with participants ( $n=9$ ) purposively selected to capture a range of descriptions, namely diversity in facilitator roles, geographic location and student population. These interviews were an opportunity to gain a better understanding of particular details (e.g. how they tailored the resource, their perspectives on the impact and suggestions regarding the curricular materials).

Qualitative content analysis (Graneheim & Lundman, 2004) was led by one member of the research team (B.M.M.). Based on the evaluation surveys, a document was created by extracting data pertaining to the research questions.

Multiple readings of this document along with transcribed telephone interviews resulted in initial codes. Codes were organised into categories and themes without the use of analytic software. Analysis focussed on assessing what motivated facilitators to utilise the film-based resource, and examining how they adapted and evaluated its use in the classroom setting. During the analysis phase, broad themes were discussed and reviewed with the research team. Rogers' model of diffusion (2003) informed the data analysis and reporting of study findings.

## Findings

### Motivation for adopting the innovation

Cannabis use among young people was a subject of concern for the study participants. Given the perceived relevance of the topic, most expressed how they were motivated to try a novel resource on cannabis in the learning environment; some suggested that testing the resource was timely given the prevalence of cannabis use among students at their schools. Additional contextual factors shaped their interest in and adoption of the resource. Several facilitators emphasised that the existing "head in the sand" approach of avoiding the topic within their school communities was problematic resulting in a lack of opportunities to engage in open discussion about choices to use or not use cannabis.

There was a willingness among participants to invite dialogue about cannabis into the classroom setting despite a general anxiety and trepidation surrounding the topic within some school communities. While some expressed that classroom presentations on cannabis could be challenging, there was a readiness to invite youth engagement. One participant had advice for colleagues:

...when a teacher presents it, they need to be ready for frank discussion and allow a few minutes of discomfort as the students try to figure out if we are preaching to them or genuinely trying to solicit discussion. (Teacher, woman)

Many facilitators brought enthusiasm and curiosity to the opportunity of trying a new approach that was considered refreshing. Exploring decision-making and cannabis use was viewed as an entry into conversations that schools could support. Some participants were drawn to the opportunity to test a novel way to reach students; using a resource that focussed on youth perspectives would allow students to connect with the characters.

Some facilitators emphasised pragmatic factors that influenced their decisions to participate in the study. The CYCLES resource filled a need given the lack of current resources and limited budgets. The contemporary resource was a welcome alternative to what one participant had used for the past seven years. Some participants were interested in learning more about inviting conversations into the classroom setting while others wanted to strengthen their skills in prevention.

### Key pre-conditions

Participants indicated that they were committed to supporting youth engagement in the learning environment: some expanded on the importance of pre-conditions that were beneficial to the uptake of the innovation. For one man, creating a “space where the students felt comfortable” contributed to a classroom context that accommodated the new approach. The relational dynamics between the facilitator and students were also acknowledged to be key to this process: having a good or established relationship was identified as helpful as was a sense of trust. One woman stressed the importance of having the right teacher: “I am non-judgmental, more like a concerned aunt than a preaching teacher, so it worked, the students spoke openly and freely, for the most part.” Finally, helping youth express their voice was held as a priority.

### Relative advantage

Unlike lecture-style presentations on substance use, the CYCLES innovation was perceived to be a preferable way to engage youth in related and relevant discussion. One facilitator noted how a presentation on substance use during a Health Fair had focussed on the transmission of information and had not been well received by the students; however, watching the film in the classroom appeared to relax her students by setting a tone that was conducive for the subsequent conversation. Witnessing the warning signs of problematic cannabis use and engaging in related group discussion were perceived to be more powerful than an adult merely talking about the risks. One teacher concluded that her students were more “authentically engaged” than they would have been during information-based drug education.

In contrast to approaches that only consider the health harms related to cannabis use, the film’s portrayal of different reasons for using the substance was said to invite balanced dialogue into the learning environment. One woman teacher emphasised that the tone of the classroom conversation was not focussed on condoning cannabis use; rather, using the innovation helped to normalise healthy discussions. As a result, students were assumed to be more receptive than when told simply that cannabis was a drug that was bad. Indeed, one

facilitator reported on the sentiment of her students’ who admitted that they were more likely to engage in discussion that did not dwell exclusively on the substance’s harms. In their evaluations, participants highlighted that students had shared how much they appreciated content on cannabis that showed both sides and was not biased.

### Complexity

Despite the variations described with the uptake of the resource, there was commonality expressed by the facilitators regarding the ease of use and accessibility of the CYCLES resource. Many indicated how they appreciated the viewing options, the proposed lesson plans and the different learning activities outlined within the curricular materials. They noted the ease of navigating the facilitator’s guide including accessible background information on cannabis and discussion topics for inviting dialogue. In total, 88% of the facilitators indicated that they had referred to the curricular materials.

Choosing which version of the film (uninterrupted or interactive format) to utilise was based on the perceived suitability for the target students. On one occasion, a facilitator described how she switched to the uninterrupted version when a challenging group of young men were “choosing the most ridiculous answer that they could find.” The ease of doing so was reported to allow the class to settle into viewing the film as that approach was better suited for the group.

The innovation was also considered to be flexible as the facilitators could fit both the film and learning activities within the boundaries of school schedules. When time constraints resulted in the film being viewed followed by discussion during a single class, participants reported how they selected learning activities that allowed them to address key points. For many participants, the most important group activity was inviting open dialogue often drawing on the discussion topics outlined in the facilitator’s guide; other activities such as role play did not take place when time was limited. However, when time allowed, learning activities were extended for a second class and reportedly were easily resumed. As one woman teacher noted, “The students had a full week break between watching the video and doing the follow-up session with the scenarios, yet everyone remembered the story line.” Occasionally viewing the film occurred over two classes when facilitators used the opportunity to discuss issues in the film as they arose.

Inviting classroom discussion by exploring the topic of decision-making and cannabis use was described as an easy approach and neutral way into the topic. Many reported that easing into the discussion was enhanced by means of open-ended questions. Other participants observed that some students were quiet and that classroom conversations were guarded. This occurred when there was a strong personality in the class and when one was an outside facilitator without an established relationship with the students that hindered the depth of the classroom discussion. Steering the discussion to explore the consequences of cannabis-related decisions as portrayed in the film and exploring the learning activities were perceived as non-threatening ways to try to engage students in dialogue.

### Compatibility within the classroom setting

Different viewing options and learning activities were selected based on the classroom setting. One-half (50%) of the facilitators reported using the interactive format of the film (Figure 1). The reflective learning activity of pausing while considering a scenario-based question was described as well suited for Grade 9 students and provided an opportunity to examine the decision-making process. One Grade 10 counsellor valued how this format presented students with the concept of options within decisions. This format was also selected for quiet students and those who were perceived to need activities in order to become engaged. The described active listening component made the content more accessible and was preferred for students whose first language was not English and students with learning disabilities, thus creating conditions for stronger discussion afterwards. Other facilitators (36%) selected the uninterrupted version. One man suggested this “more gritty and real” format was better for mature students particularly when the facilitator was comfortable with the subject. It was also considered preferable for students with attention deficit hyperactivity disorder for whom interrupting the film would have been problematic.

A small number of facilitators (10%) used both versions of the film with different groups of students. Occasionally, students saw both formats when facilitators devoted an additional class to the topic:

[We] viewed the interactive version on the first day – no note taking, just reflective thinking and discussion mostly centered on individuals and their choices in relation to their life factors. On the second day [we viewed] the uninterrupted version with broad discussion questions as suggested in resource materials. . . . I used the role play and the scenarios as a form of evaluation. (Teacher, woman)

In this way, the participant employed the learning activities at the end as a way to gauge students’ overall understanding.

Although the resource was mostly used for Grades 9 and 10 students (i.e. students aged 13 to 15 within Canadian schools), it was incorporated into a variety of grades and classes ranging from Grades 7 to 12. It was integrated into courses such as Health, Physical Education, Guidance, Planning, Social Studies, English, Ethics, Drama, Leadership, Communication and Law; the focus varied accordingly. One facilitator used the resource for a class on relationships whereas another teacher integrated it into an English class:

. . . anything that can be viewed, listened to or read is considered text, so to use that film as a text for viewing and listening, then that can prompt some good discussion and some written responses. . . . It leaves it open-ended which is nice, it segues nicely into the discussion. (Teacher, man)

Most students from Grade 8 onwards were considered mature enough to engage in dialogue; some facilitators proposed the appropriateness of the innovation by Grade 9

given the statistics regarding early initiation of cannabis among young people. One Grade 9 student echoed the relevance of the film’s content for her peers, “It was portrayed similarly to what really happens in high schools . . . more teens can relate to it whether they smoke pot or not.”

### Trialability

In contrast to participants who followed the suggested lesson plans, others reported on how they modified the delivery of the innovation and tailored what was suggested in the curricular materials. For example, a few participants adapted how they viewed the interactive version and opted to watch the film in chapters instead as this was perceived to be a better approach for their students. Pausing the film allowed the facilitator to navigate the timing based on the discussion when students had questions or wished to explore options on the interactive worksheet. This occurred with smaller groups and optimised student engagement. In one instance, a participant described how she stopped the film to engage students on the topic of early initiation of cannabis and shared how she invited focussed discussion: “Well, the example of the little brother. . . when I work with kids who are older than you who say. . . ‘I wish I’d just waited, I wish I didn’t get involved so young.’” Consequently, group discussion ensued regarding the associated health harms with early initiation.

Although the intention for the interactive worksheet was that student viewers reflect on personal decisions in a manner that was confidential, these questions were used by some facilitators to guide class discussion. At times, students reportedly shared their responses with one another. One teacher highlighted the potential for learning from peers when students considered and compared responses and perspectives, suggesting how young people can talk openly about the topic in a supportive learning environment.

Activities outlined in the facilitator’s guide were adapted to create class-specific individual and group learning activities. One teacher asked her students to write their own questions along with what had sparked their curiosity within the content of the film’s story while another facilitator created a reaction sheet based on discussion topics outlined in the curricular materials. Several teachers asked students to write a reflective piece following the film. Two facilitators created student evaluations for young people to document their impressions of the film and how viewing it and participating in group discussion had changed how they felt about cannabis; students also rated the facilitator who delivered the session. In other settings, students worked in small groups to discuss aspects of the film that had stood out. Finally, one teacher created a homework assignment for classroom presentation in which his students had to write scenes focussing on alternative decisions the main character could have made (e.g. What could Olin have done differently when his younger brother entered his room and saw him rolling the joint?). These tailored learning activities were purportedly aimed at drawing out students’ personal reflections and group insights. In so doing, participants appeared to shape the delivery of the innovation to best support the learning needs for their group of students.

## Observability

### *Meaningful classroom discussion*

Facilitators described students' enthusiasm about participating in discussion. As one participant observed, her students led the discussion and suggested additional topics that were relevant, such as the association between cannabis and depression. Accommodating discussion that was pertinent was described as a more meaningful learning experience. These conversations were shepherded; facilitators would redirect it when it veered too much in one direction.

Cannabis-related dialogue reportedly focussed on a range of topics such as the confusing health messages, associated mental health issues and the influence of personal use on siblings; however, the discussion was not limited to the topic of cannabis. Rather, wide-ranging dialogue expanded into areas that were relevant to students' lives. In this way, the use of the innovation appeared to evoke meaningful discussion about the broad issues and challenges that impacted decision-making and cannabis use. As one participant observed,

The film opened up so many areas that traditionally they would be discussing with their parents, what's a healthy relationship, how to deal with stress, healthy mental health choices. They're not having these discussions at home...The discussion happens in the classroom. (Teacher, woman)

This participant added that the classroom conversation usually subsided quickly; on this occasion, the dialogue kept going with some students endeavouring to continue the exchange afterwards. Facilitators also observed that students responded favourably to the opportunity to have open and honest discussion without fear of judgment. One teacher revealed how her students were "surprisingly frank about their experiences and how they related to various [film] characters" and concluded that they were "almost relieved" to have such candid discussion.

Participants observed that conversations about cannabis were possible even in the midst of challenging learning environments. Some young people, particularly older students with an established pattern of cannabis use, were reportedly critical of the film's exaggerated depiction of the development of problematic use; this had the potential to affect the learning environment. By weaving negative comments into the discussion, the conversation remained open and inclusive. Inviting students to elaborate on the innovation's shortcomings and propose alternatives to the film's script or plot, or suggest the appropriate target grade for the innovation supported ongoing dialogue. Most students who were critical considered this a starting point to more meaningful conversation and encouraged using the film.

### *Critical reflection*

The innovation was reported to be a useful tool that supported critical thinking in the learning environment. Based on facilitators' reports, some young people gained insights into their involvement with cannabis. Some participants reported that students initiated private

conversations with them at the end of class that revealed the effect of using the innovation in that setting. One teacher shared highlights of her interaction with two students with an established pattern of cannabis use who considered the film the most realistic they had ever viewed on the topic, particularly how the substance affected individuals, family and friends. The exchange was an opportunity for the teacher to gain a better understanding of the context of their use and encourage them both to reflect on the role that cannabis played in their lives.

Group learning activities sometimes took on a playful quality that appeared to support enjoyable and beneficial interactions among peers. Sharing different points of view was an opportunity to learn from peers and consider unexplored consequences of the film characters' decisions which added depth to the discussion.

Some students thought that it was completely Olin's fault whereas others saw Olin as partially at fault but that ultimately, it's Lisa who chooses to use [cannabis] and continue to use. This led to a discussion on what it would take for Lisa to improve her life... counselling, support networks etc. (Teacher, woman)

Constructive exchanges between peers were also noted. On one occasion, a particular student's strongly held beliefs were challenged by peers which created a welcome dynamic in the learning environment. This teacher witnessed the benefits when classmates responded with correct information to the young man's misunderstanding about cannabis use and driving.

Descriptions of classroom discussions were fuelled by ongoing inquiry. Unlike approaches to drug education that "tell students how to think", facilitators observed how this innovation encouraged reflection and supported dialogue that was beyond the simplicity of good and bad. Fittingly, one evaluation captured a student's impression, "it forces one to reflect." Many facilitators recognised that some students had direct or indirect involvement with the substance as well as the ability to think rationally about the topic.

It respects students' intellect and their ability to think critically and to come to their own conclusions. It addresses gray areas such as why some people who use marijuana can turn out to be okay while others get worse. (Teacher, woman)

Based on facilitators' evaluations, many young people were drawn to exploring the nuances reinforcing how young people *do* have the ability to contemplate decisions in the midst of ambiguity. According to one experienced facilitator, the best exchange he had ever witnessed on role modelling was particularly revealing:

It's one thing to walk into a room and tell people they're role models...we get some smiles and a few shrugs and maybe one or two participate. It was a completely different ball game to have that conversation on the back of the film, which showed how some of the finer details play out between siblings...A youth said 'Man, I guess even

when you think they're not watching, they are.'  
(Counsellor, man)

This student had clearly internalised a more subtle aspect of the story.

## Discussion

In this knowledge translation study, Rogers' diffusion of innovations model was utilised to explore the steps and processes involved in the adoption of the CYCLES resource, an evidence-informed innovation designed to engage young people in classroom discussion about decision-making and cannabis use. This study focuses primarily on the first two stages of Rogers' model of diffusion: adoption and implementation. The context outside the organisation plays a role in the diffusion of innovations (Rogers, 2003). Not all innovations are of the same urgency, importance, perceived value, utility, comprehensibility, or manageability (Green & Johnson, 1995). Indeed, the steady presence of cannabis within the media and its prevalence among Canadian youth created favourable conditions for the adoption of the resource.

## Potential for innovation in prevention

Important aspects of prevention programmes have been highlighted in the literature: user-friendly, appeal to teachers, not requiring extensive training or resources and curriculum-based (Botvin & Griffin, 2003; Dusenbury & Hansen, 2004), attributes which are reinforced by our study findings. The resource's ease of use and accessibility were emphasised by study participants. Although teachers' lack of comfort with drug education has been identified (Fletcher, Bonell, & Sorhaindo, 2010) along with the need for professional training (Cohall et al., 2007; Gates, Norberg, Dillon, & Manocha, 2013), the school-based facilitators in our study were comfortable using the innovation without formal training. Furthermore, they did not need expertise to facilitate discussion as the innovation fostered comfort among novice facilitators; focussing on decision-making was a neutral way to engage students in discussion. The innovation also fit in a variety of classroom settings and corresponded to the learning needs and abilities of students ranging from Grades 7 to 12, which points to the resource's universal potential as opposed to targeted use exclusively for young people perceived to be at risk. Others favour universal drug education as a way to avoid stigmatising a targeted group (Fletcher et al., 2010). Of note, the innovation was considered suitable in classes not typically associated with drug education, suggesting the appetite for and perceived educational value of such dialogue in Canadian classrooms.

Unlike prevention studies that measure fidelity in programme delivery (Ennett et al., 2011; Pankratz et al., 2006), our study findings highlight the attribute of "trialability", noting the modifications made during the delivery of the innovation. Adaptations were made to accommodate the perceived learning needs of the target students; viewing the film in chapters and tailored learning activities beyond those outlined in the facilitator's guide were tested in classroom settings illustrating flexibility of form but fidelity to its primary function of supporting dialogue (Green &

Johnson, 1995). Although it has been suggested that programme developers need to "help" teachers adapt materials to meet students' needs (Dusenbury & Hansen, 2004), study participants skilfully tailored the delivery and were well positioned to do so given their established relationship with the students. Adopters need to be viewed as active participants in this process who, given the right circumstances and reasons, might innovate (Waterman et al., 2007). As proposed by Miller-Day et al. (2013), studies of preventative intervention need to move beyond fidelity and explore the types of adaptations that are made, in what context and for what reasons. Indeed, our study findings highlight the potential for learning about "creative reinvention" from end-users of innovations (McMullen, Griffiths, Leber, & Greenhalgh, 2015). Importantly, use needs to be about shaping the product, not simply disseminating (Green et al., 2009).

## Role of school environments in prevention

The literature reveals mixed findings regarding who is best equipped to deliver substance use interventions, teachers or specialists from outside agencies (Domitrovich et al., 2008; Spoth, Gyll, Lillehoj, Redmond, & Greenberg, 2007). Over one-half of the participants in our study were school-based staff. In contrast to literature that suggests that teacher-led cannabis programmes were less effective (Norberg et al., 2013; Porath-Waller et al., 2010), our findings suggest that school-based teachers can be well positioned given their established relationship with students, and motivation to engage young people in meaningful discussion. Teachers are among the most important influences in the lives of young people; nonetheless, the potential role of "non-health" teachers in facilitating health promotion is often ignored (Cohall et al., 2007). A study examining teachers' perspectives regarding cannabis prevention emphasised the importance of support and information for all teachers, reflecting their commitment to students' welfare and perceived shared role (Van Hout, Foley, McCormack, & Tardif, 2012).

Despite concerns that young people may become more curious about trying a substance such as cannabis when they learn about its pleasurable effects (Tupper, 2014), our findings demonstrate the degree to which thought provoking discussions can take place in classrooms. Such interactions provide opportunities to encourage young people who use cannabis regularly to reduce or stop using the substance. Nuanced dialogue regarding cannabis supports critical inquiry; others underscore the importance of encouraging young people to come to their own conclusions regarding information presented in substance prevention programmes (Lennox & Cecchini, 2008). Fostering critical thinking belongs in prevention programmes (Higgins, Begoray, & MacDonald, 2009), including adult-facilitated assessment of young people's positive beliefs regarding cannabis (Holm, Tolstrup, Thylstrup, & Hesse, 2015). In our study, participants challenged students' misunderstandings regarding the substance; inclusive classroom discussion is particularly important given that many young people have pre-existing knowledge regarding cannabis.

Others underscore the role of adults in drug education to guide and stimulate student interactions (Peters, Kok, Ten

Dam, Buijs, & Paulussen, 2009). Importantly, in a non-judgmental atmosphere, students were willing to approach facilitators regarding personal cannabis use. One recent study reported on the benefits of similar student–teacher conversations. Specifically, student-reported teacher counselling for policy violators predicted an almost 50% reduction in the likelihood of later cannabis use (Evans-Whipp, Plenty, Catalano, Herrenkohl, & Toumbourou, 2015).

### Informed decision-making

Nicholson, Duncan, White, and Stickle (2013) propose that the purpose of drug education is to: (1) provide students with accurate information; (2) develop students' decision-making skills and (3) reduce the risk of hazardous consumption and dependence. Although these goals align with the intended purpose of the CYCLES resource, the innovation itself was not focussed on “facts” usually assigned to drug education; rather it was designed to encourage self-reflection and support dialogue. Drug education dominated by authoritarian and fear-based approaches can be alienating for young people and subsequently criticised for the lack of credibility (Albert & Steinberg, 2011; Skager, 2008); furthermore, these styles of drug education are reportedly counterproductive (Brown, 2001; Sloboda et al., 2009). In contrast, innovative methods that invite discussion about decision-making and cannabis use that is neither didactic nor moralistic can generate classroom discussion; our findings reveal that thought provoking discussion can take place in classroom settings. Study participants were also enthusiastic about using the novel resource that incorporated and invited young people's perspectives on the topic of cannabis use. Others have incorporated creative methods to encourage reflection in substance use programmes (Haines-Saah, Kelly, Oliffe, & Bottorff, 2015; Haleem & Winters, 2011).

In contrast to prevention efforts that focus on reduction or abstinence outcomes, adult facilitators evaluated the impact of using the innovation for the purpose of engaging students in discussion about decision-making and cannabis use which contributes to existing literature on cannabis prevention. Study participants observed the scope of meaningful and in-depth classroom discussion as well as critical self-reflection among students regarding the consequences of cannabis use. Balanced discussion regarding the substance represented a paradigm shift in the learning environment. Addressing both the benefits and harms associated with cannabis use acknowledged recreational, medicinal and problematic use of the substance. Students often selected topics for conversation, illustrating a change from traditional drug education and “power” in classrooms (Matthews, 2014). In contrast to didactic approaches utilised in some prevention education, interactive techniques favouring student participation are considered more effective (Midford, Munro, McBride, Snow, & Ladzinski, 2002; Porath-Waller et al., 2010). In addition, drug education that fosters dialogue among peers supports learning (Peters et al., 2009; Tobler et al., 2000). Open classroom conversations about the purported benefits and risks associated with cannabis use that includes young people's perspectives can enhance drug education and informed decision-making regarding the substance.

### Limitations

We recognise that the study findings are based on reports from end-users and do not include field observations. In addition, the decision to adopt the innovation was “optional” (Rogers, 2003) as opposed to “collective” where all members of an organisation must commit or, “authoritarian” where more powerful members of an organisation impose an innovation on those less powerful. It may also be that facilitators who participated in this study were particularly receptive, ready for the innovation and motivated to engage young people in dialogue about cannabis, hence not representative of most teachers. Furthermore, the sample includes different groups of facilitators (e.g. school-based staff, external professionals and addiction services) and this analysis does not examine or compare the potential outcomes of different styles of delivery between groups. In addition, descriptive data regarding participants' age and years of experience are not available. A final consideration is that the innovation is situated within the Canadian context and it may not have relevance to other places.

### Conclusions

In the broader context of drug education and prevention, approaches dominated by scare tactics inhibit youth engagement and there is a need for resource options. Innovative evidence-informed tools can bridge the conversation gap in classroom settings. The CYCLES innovation was a vehicle designed to encourage reflection and critical thinking on cannabis-related decisions, and for all to engage in healthful dialogue. This occurred in an accommodating learning environment where open conversation took place without fear of judgment. Young people have much to contribute to this dialogue; some want to engage with adults regarding the role of this substance in their lives. Engaging in innovative prevention approaches that embrace inclusive and balanced discussion about cannabis use can empower young people by promoting informed decision-making.

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