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Activities, Policies, and Resources to Address Substance Use on British Columbia Campuses: A Literature Review and Scan

A Discussion Paper Prepared for the Drugs and Tobacco Initiatives Program
(Health Canada – BC Region)

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Acknowledgments

Note about Author Contributions

The initial work phases related to the development of this report were completed by Kristina Brache (Graduate Student, Dept. of Psychology, University of Victoria). Kristina completed the initial literature review, contacted campus representatives, and provided the first draft of the report. Dan Reist and Tim Dyck (Centre for Addictions Research of BC) provided expert consultation services as reviewers of the initial draft, providing additional content, interpretation, framing, and editorial support. Jonny Morris contributed content related to the Healthy Minds/Healthy Campuses Initiative, the executive summary, and provided overall project management.

Executive Summary

The main purpose of this report is twofold. First, to articulate the findings of a scan of the literature, designed to identify recent drug use prevention and cessation activities, policies, and resources that have demonstrated some efficacy in post-secondary educational settings. Second, to share information provided by campus community members in British Columbia (BC) about drug use prevention and cessation activities, policies, and resources currently being implemented on-campus. The primary focus of both the literature review and scan was illicit drug use, including the use of pharmaceuticals off-prescription, but also included reference to activities related to alcohol use.

Methods

For this report, a rapid review of the research literature, and a scan of a selected number of BC post-secondary campuses were completed.

Findings

The findings from the literature review suggest a paucity of data describing either the prevalence or experience of harms associated with substance use amongst BC post-secondary students. The literature confirmed that alcohol is most commonly used amongst students, followed by cannabis, while fewer post-secondary students use alcohol, cannabis, or other drugs when compared to similar-aged non students (Adlaf, Demers, & Gliksman, 2005). The literature also indicates that students' relationships with substances are complex, sometimes serving multiple functions, and are reciprocally influenced by socio-cultural and environmental factors (Larimer, Kilmer, & Lee, 2005; Schulenberg & Maffs, 2002).

There is a call in the literature for campus-focused initiatives to address not only the standard questions of prevalence and potential harm, but also the real or perceived positive benefits, and socio-cultural factors that can influence rates of use and associated harms. This call to expand the focus of our efforts links to the literature's support for settings, like college or university campuses, to consider implementing activities undergirded by a socio-ecological approach (DeJong & Langford, 2002; Toomey, Lenk, & Wagenaar, 2007; Vantamay, 2009). Such an approach provides the necessary theoretical framework to support multi-level prevention efforts that respond to individual, interpersonal, institutional, community, and societal level influences.

The literature review identified several categories of initiatives, designed to respond to substance use amongst post-secondary student populations. They include (a) information programming; (b) screening and brief intervention; (c) social norms marketing; (d) comprehensive initiatives; (e) efforts to promote connectedness and involvement; and (f) regulatory strategies. It is clear from the literature review that the efficacy of any particular initiative or response to substance use is reduced if the initiative or response is implemented in a singular or one-off manner. Specifically, the literature suggests that multi-level, multi-component, theoretically grounded, comprehensive

approaches to substance use prevention and cessation are more efficacious. Amongst these five categories, screening and brief intervention efforts (e.g. the BASICS program) have been indicated as showing promise, alongside comprehensive campus responses, efforts to promote connectedness and involvement, and regulatory practices associated with the restriction of availability and advertising of particular substances (e.g. alcohol). Isolated information programming activities and social norms marketing have shown less promise.

The analysis of the scan-results of existing activities on BC campuses yielded several thematic areas of action and response to substance use prevention and cessation. The vast majority of post-secondary institutions engage in the provision of relevant health information for students, predominantly through online sources. A small number of campuses indicated that they provide standard alcohol and drug screening when students access counselling services. Half of the post-secondary institutions scanned provide counselling services to students, addressing substance use issues when they arise during contact with students. This particular effort fell under the theme of treatment and referral services. Campuses that participated in the scan reported an array of environmental strategies (e.g. social marketing, student health educator programming). Additional activities included policy initiatives (four institutions) and data collection/surveys (three institutions). Fifteen of the 16 post-secondary institutions scanned participate in the Healthy Minds/Healthy Campuses community of practice, which is designed to support learning around socio-ecologically informed approaches to mental health promotion and the reduction of substance use-associated harms on campus.

Overall, post-secondary institutions in BC appear to not have initiatives targeted specifically at responding to illicit substance use or the use of pharmaceuticals off-prescription. Rather, campus efforts tended to fall under broadband efforts to address all substance use (including alcohol) or to increase general student health and wellness. Of note, one gap in BC post-secondary institutions' responses to substance use prevention and cessation is the absence of a theoretically grounded and consistently applied health promotion frame for related activities (policies, programming, practices).

Recommendations

In sum, the following recommendations are based on the results of the literature review and scan of a selected number of BC post-secondary institutions.

1. BC post-secondary institutions should be encouraged to implement a broad socio-ecological approach to mental health and substance use that includes attention to illicit drugs and prescription medications.

2. Post-secondary institutions should be encouraged and enabled to work collaboratively with each other through the Healthy Minds/Healthy Campuses initiative and with local partners

such as the Center for Addictions Research of BC. Capacity limitations within the institutions and within these provincial support mechanisms need to be addressed.

3. Specifically, attention should be given to developing strategies and mechanisms to provide broad training across various campus sectors in the basic concepts related to health promotion, substance use and the socio-ecological approach.

4. Post-secondary institutions should be encouraged and enabled to develop, implement and evaluate specific initiatives that focus on the individual and initiatives that address environmental factors. This may involve further development of the Helping Campuses provincial resource centre (a repository of promising practices, tools and resources at http://carbc.ca/HelpingCampuses.aspx). But it should also involve mechanisms to support implementation and evaluation though consultation, knowledge exchange, and research capacity.

5. Post-secondary institutions should be supported in the collection, analysis and use of good on-going data to measure the adverse consequences and contributing factors related to substance use. Ideally this would be part of a larger program of monitoring students' general mental and physical health, health behaviours and access to services and supports and of monitoring the institution's activity in creating a health promoting campus.

Activities, Policies, and Resources to Address Substance Use on British Columbia Campuses: A Literature Review and Scan

Kristina Brache[1], Dan Reist[2], Tim Dyck[3], Jonathan Morris[4]

The current document was created at the request of the Drugs and Tobacco Initiatives Program, Health Canada (BC Region). The document consists of a literature review and a scan of current substance use prevention and cessation activities at BC post-secondary institutions. It includes the identification of recent international literature regarding drug use prevention and cessation activities, resources and policies with a specific focus on those that have received some form of evaluation for effectiveness. It also identifies substance use prevention and cessation activities, resources, and policies that are currently being implemented at BC post-secondary institutions. The literature review and scan focused on illicit drug use, including non-prescription pharmaceutical use, at post-secondary institutions but could not exclude attention to alcohol. The purpose of this investigation was to provide an understanding of what activities are being currently implemented, identify gaps in current activities, and provide recommendations for future action. The paper identifies the capacity of BC post-secondary institutions, in collaboration with BC provincial resources, to address substance use at BC post-secondary institutions.

Literature Review

The objective of the literature review was to identify recent (past 10 years) drug use prevention and cessation activities, resources, and policies that have been shown to have some effectiveness in a post-secondary institutional setting. The review was designed as a rapid review and is therefore not comprehensive. Nonetheless, several strategies were used to search for relevant literature, beginning with an electronic reference database search (PsycINFO and PubMED) using a Boolean search strategy with various combinations of the following keywords: (colleges OR college students OR universities) AND (intervention OR prevention) AND (drug abuse OR alcohol abuse) AND (prescription drugs OR street drugs OR cannabis). The results were scanned to identify reviews or meta-analyses of relevant strategies. In addition, recent studies of particular promising strategies or of emerging issues not included in the reviews were also selected. Studies or reviews that focus primarily on the extent of the problem in non-Canadian settings or that primarily explore health or social outcomes were excluded as out of scope. The

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reference sections of relevant reviews or published studies were then used to supplement the database search results. This led to the inclusion of a variety of reports and other sources that help ensure all major relevant issues are addressed.

Substance Use on BC Post-Secondary Campuses
There is a shortage of data related to substance use patterns and the experience of harms among post-secondary students in British Columbia. According to the 2004 Canadian Campus Survey, which sampled 793 students from post-secondary institutions in British Columbia, alcohol was found to be the most commonly used (Adlaf, Demers, & Gliksman, 2005). In the past year 78.5% of students surveyed had used alcohol and 70.6% had used alcohol in the past month. By comparison, 30.3% of BC students had used cannabis in the past year (12.9% in the past month) and 9.9% had used any illicit drug, excluding cannabis, in the past year (3.3% in the past month). It was also found that 1.2% of Canadian undergraduates had used other stimulants (Ritalin, Dexedrine, or Adderall) in the past year. Comparison of these figures with data from the Canadian Addiction Survey of the same year suggests that fewer post-secondary students use alcohol, cannabis or other drugs compared to similar aged non-students. Past year use by Canadians 18-24 years old was 90.15% for alcohol, 41.85% for cannabis and 14.7% for other illicit drugs (Flight, 2007). Recent studies have indicated that approximately 25% of current North American post-secondary student drinkers had consumed alcohol and energy drinks in the past month (Brache & Stockwell, 2011; Miller, 2008; O'Brien, McCoy, Rhodes, Wagoner, & Wolfson, 2008). Energy drinks are beverages that intend to provide a burst of energy and/or enhance alertness. The principle stimulant ingredient in energy drinks is caffeine, although they often include high doses of sugar, vitamins, and other plant/herbal extracts. Recent studies have also demonstrated a significant increase in non-medical prescription drug use among young adults in the United States (Ford & Schroeder, 2008). The drugs most commonly used in this way by students are the stimulants and sedative-hypnotics (Hamilton, 2009) but little data is available for estimating use by BC students.

Research that has focused on post-secondary substance use has noted that substance use may serve both a constructive and destructive function for students. Substance use may facilitate the transition to college, it may also inhibit the successful transition to college (Larimer, Kilmer, & Lee, 2005). Most students have more positive experiences with alcohol than negative ones, but alcohol use does become problematic for many (Schulenberg & Maggs, 2002). Post-secondary students are at risk for the development of substance use disorders and for experiencing negative consequences related to drug use (Arria & DuPont, 2010; McCabe, Cranford, Morales, & Young, 2006; Palmer, McMahon, Moreggi, Rounsaville, & Ball, 2012; Thombs et al., 2009). These include an increased risk for accidents and injuries, visits to the emergency room, driving while intoxicated, being under the influence of substances when at school or work, and taking illicit substances in larger amounts than planned. Of note, it has been found that almost one third of college students who have used illicit substances have endorsed wanting to cut down or stop use

(Larimer et al., 2005). Students who engage in binge drinking and other drug use are at significantly increased risk compared to those who binge drink but do not use other drugs (Serras, Saules, Cranford, & Eisenberg, 2010; cf. Shillington & Clapp, 2006). Furthermore, compared to students who consume alcohol alone, students who consume alcohol and energy drinks have been found to be at increased risk of being taken advantage of, or taking advantage of another student, sexually, driving home after drinking, riding in an automobile with a driver under the influence of alcohol, being hurt or injured, and requiring medical treatment (O'Brien et al., 2008; Thombs et al., 2010). The addition of energy drinks to alcohol increases the risk of alcohol dependence (Arria & DuPont, 2010; Brache & Stockwell, 2011). Recent studies also suggest that the nonmedical use of prescription drugs is associated with heavy drinking behaviour and the use of other illicit drugs (Arria & DuPont, 2010; McCabe et al., 2006).

Research suggests that patterns of substance use are influenced by a variety of factors including cultural and environmental factors as well as the beliefs and attitudes of individuals. Alcohol use and heavy drinking are culturally embedded in the experience of adolescence and the transition to young adulthood (Schulenberg & Maggs, 2002). Similarly, recent research documents several motivations for non-medical prescription drug use among post-secondary students. These include relieving pain, experimentation, getting high, relaxation as well as an aid to sleep and weight loss (Ford & Schroeder, 2008; McCabe, Boyd, & Young, 2007; Quintero, Peterson, & Young, 2006). With respect to stimulant use in particular, college students report using prescription medication to help meet academic demands by improving intellectual performance and increasing concentration and alertness (Ford & Schroeder, 2008; Quintero et al., 2006). Non-medical stimulant use is higher among students from colleges with more competitive admission standards (Ford & Schroeder, 2008).

Addressing Substance Use on Post-Secondary Campuses
Initiatives to address substance use on campuses needs to consider not only the rates of use and the potential harms but also the real or perceived positive benefits and cultural factors that influence use and harm (Clapp & Stanger, 2003; Schulenberg & Maggs, 2002). Many interventions focus on reducing the prevalence of substance using college students while others focus on reducing the harms experienced (Larimer et al., 2005). Many post-secondary institutions have focused their attention on alcohol for which prevalence is high and the harms well documented. Recent research, however, suggests the need and utility for prevention and intervention programs to include a variety of psychoactive substances (incl. energy drinks and pharmaceuticals) and patterns of substance use (e.g., bingeing and poly-drug use). Significant differences related to changing patterns of use over time get lost within overly simplistic foci on overall use or harm (Schulenberg & Maggs, 2002). Recent research into the recreational use of pharmaceuticals among post-secondary students in the US highlights the significant prevention challenges for addressing pharmaceutical misuse (Hamilton, 2009; Quintero, 2009). These

include students' misperceptions about the safety of pharmaceuticals, but also relate to deeply rooted cultural beliefs about the efficacy of medicine to cure all human ills (Carter, 2007).

Substance use interventions at post-secondary institutions occur in a variety of forms, which often involve targeting different areas for intervention. In the past, the majority of interventions have tended to focus on the individual student – addressing pathology, changing behaviour or building capacity. Recognizing the limitations of this approach, the U.S. Department of Education's Higher Education Center for Alcohol and Other Drug Prevention urges campus administrators to adopt a comprehensive approach to prevention that goes beyond individually focused health education programs to include strategies designed to change the campus and community environment (US Department of Education, 2008). Many of the efforts at environmental management have focused on policies and regulation (e.g., restrictions on alcohol advertising or controlling drink prices), but some of the considerations above suggest the need for a broader effort that also addresses cultural assumptions and influences.

So, institutions can use a variety of interventions which intersect with different areas of their institution, such as altering campus culture, campus policies, behaviour of individuals at risk, and availability of treatment. The socio-ecological model is a comprehensive approach to understanding human behavior which has been applied to post-secondary substance use behaviour (DeJong & Langford, 2002; Toomey, Lenk, & Wagenaar, 2007; Vantamay, 2009). This approach provides a theoretical framework to understanding the multiple factors, which contribute to students' substance use and can be used as a guide to design effective strategies for multi-level prevention efforts. The socio-ecological approach suggests that human behaviours, like substance use, are affected by individual level influences as well as interpersonal, institutional, community, and societal level influences (Beck et al., 2009; Quintero et al., 2006; Vantamay, 2009). Individual level variables can include demographic characteristics and psychographic characteristics, such as personal knowledge, attitudes, and beliefs (re motives see e.g., Garnier-Dykstra et al., 2012; Lee, Neighbors, & Woods, 2007). The interpersonal level includes influences of family members, peers, or close social networks. The institutional level includes influences of schools or universities. The community level can include the environment where people live, such as residences or off-campus housing, and their living conditions. The societal level, which may also be termed the policy level, includes different policies, regulations, and social campaigns that affect populations, such as the campus community. Post-secondary institutions are ideally positioned with the ability to intervene, in some way, at all of these levels of influence on their campus. This approach has not been well evaluated within the post-secondary setting, but, based on the reasoned expectation that what has been shown to work to reduce alcohol-related problems in the population at large will also work to reduce substance-related problems among college students, institutions should consider these different levels when designing, implementing, and evaluating their substance use prevention and intervention efforts in order to comprehensively address substance use. Recent case study reports underscore the

potential value of an environmental approach to reduce substance-related problems among college students (DeJong & Langford, 2002; Jung, 2003; Saltz, 2011).

Information Programs

The most popular effort has been that of supplying students with information (especially with reference to risk of harm). The awareness-raising enterprise remains largely unassessed in regard to positive impact (Larimer et al., 2005; Polymerou, 2007) apart from its employment in regard to alcohol use, where (particularly in its traditional didactic form) it has proven ineffective on its own and of unconfirmed benefit as a specific piece within multicomponent interventions (Cronce & Larimer, 2011; Larimer & Cronce, 2007). Given the shortcomings on the alcohol front in college and more generally-realized failures in the broader public domain in regard to other drugs, the prospects for achieving desired results in prevention or cessation from this conventional educational thrust as a stand-alone stratagem are not promising. Polymerou's verdict on the U.K. context found that post-secondary institutions were committed to health promotion more broadly, and to providing information about alcohol and drugs, but that in practice this often occurred in an uncoordinated fashion and lacked theoretical basis. However, some awareness campaigns were conducted from a non-judgmental, harm-minimisation perspective. One American study, after examining an attempt at exposing post-secondary students to ecstasy-related messaging, cautions that a focus primarily on the negative side of things (potential adverse consequences) can be counterproductive, lending itself to increased rather than reduced use. The advice is instead to embed balanced information within multi-pronged initiatives (Vincent, Caldeira, O'Grady, Wish, & Arria, 2010). This aligns with recognition that collegian-aimed web-based approaches, to this point largely geared around alcohol but beginning to address other substances (starting with cannabis), have increasingly become more interactive with personalized feedback. Analysts see need and opportunity to expand the extent of engagement around self-reflection, expectancies, motivations, and protective behavioural strategies (Walters & Neighbors, 2011).

Screening and Brief Intervention

Screening and brief intervention is an increasingly attested individual-focused initiative in regard to actually (and potentially) problematic use of alcohol by postsecondary students (Carey, Scott-Sheldon, Carey, & DeMartini, 2007; Cronce & Larimer, 2011; Larimer & Cronce, 2007). The relative contribution of various elements within a typical brief intervention has not been parsed out in a definitive manner yet. Indications already favour employment of motivational interviewing and delivery of personalized feedback including a normative aspect (comparing a person's own practice and perceptions with salient actual norms, highlighting any misperceived inflation of the latter that might have exercised unhealthy influence on the former). Other facets include discussion around expectancies and motives, as well as attention to personal protective behavioural strategies.

The motivational interviewing (MI) feature comes from the collaborative work of William Miller and Stephen Rollnick, counselling theorists and practitioners who commend it as "a collaborative, person-centered form of guiding to elicit and strengthen motivation for change" (Miller & Rollnick, 2002, 2009; Rollnick & Miller, 1995). As in a variety of other often adapted applications to different audiences, this widely implemented and evaluated approach to counseling has shown effectiveness in interventions around alcohol use for college students (Branscum & Sharma, 2010). Accordingly MI has attracted interest in its presumed advantage for communicating beneficially on use of other drugs.

One controlled study (identified by Larimer et al., 2005; Polymerou, 2007) was designed to evaluate a 60-minute motivational intervention regarding alcohol, tobacco and drug use in students recruited from 10 colleges in London, England (McCambridge & Strang, 2004). Two hundred individuals aged 16 to 20 participated in the study. The intervention was adapted from the literature on motivational interviewing to form a one-hour single session face-to-face interview. Results indicated that participants in the motivational intervention significantly reduced their marijuana, tobacco, and alcohol use at three-month follow-up relative to control participants who received an assessment only. Interestingly, for cannabis, the effect was greater among heavier users and amongst youth usually considered vulnerable or high risk, according to other criteria. Although other drugs were investigated, no differences between the intervention group and the control group in mean frequencies of use of individual drugs could be robustly attributed to the intervention, given the small numbers available for analyses to yield statistical significance (McCambridge & Strang, 2004). Overall, (1) students appeared to benefit from the brief motivational intervention for individual drug use, (2) moderation among ongoing users appeared to be a greater source of this benefit rather than quitting altogether, and (3) drug users who are often least likely to benefit from interventions appeared to derive the most benefit from this intervention. There are several important limitations to this study as the randomization procedure failed to yield equivalent groups at baseline on many variables of relevance to the outcomes and multiple analyses were conducted without controlling for experimental error (Larimer et al., 2005; Polymerou, 2007).

Short-term effects were not maintained at a longer-term follow-up of twelve months, with such attenuation suggesting the possible value of a subsequent booster session. Such diminishment of impact relative to control group may also need to account for effect of a short-term follow-up contact with the latter (McCambridge & Strang, 2004). Another consideration is naturally-occurring gradual improvement in the latter group's reduction of risk (cf. Carey et al., 2007). Results were promising enough to encourage further investigation exploring any added impact to motivational interviewing over information plus advice, toward reduction or cessation for cannabis users in the further education college constituency (McCambridge, Slym, & Strang, 2008). When a cessation outcome was analyzed, consistent practitioner adherence to two features was predictive of that result: commitment to the spirit of MI (collaborative style, evocation of

personal reasons for change with respect for their autonomy) and to reflections that add meaning to what has been said, for example, by communicating understanding of feelings expressed, showing insight into what the individual is wrestling with and inviting further clarification or expansion (McCambridge, Day, Thomas, & Strang, 2011). In short, the thrust of MI (still being progressively studied) continues to commend itself for apt use in conversations around health concerns, including those associated with substance use.

The most accredited exemplar of a well-rounded short initial treatment package for campus constituents that includes the MI relational approach indebted to Miller & Rollnick is the Brief Alcohol Screening and Intervention for College Students (BASICS) program. It consists of a two-session counselling interview that aims at motivational enhancement toward harm reduction practice. This is pursued via non-judgmental personalized feedback and non-coercive discussion around hazardous drinking patterns, with suggestive consideration of suitable courses of action that might be utilized. There is extended research support demonstrating the success of BASICS (and derivations of it) in reducing quantity and frequency of alcohol use, as well as negative consequences among college students (Amaro et al., 2010; Carey et al., 2007; Cronce & Larimer, 2011; Larimer & Cronce, 2007). Reviewers such as Larimer et al. (2005) call for drug response initiatives to seize on sound theoretical and methodological underpinnings that are also bound up with encouraging prevention and treatment interventions in school-based delivery and to adult as well as adolescent populations. BASICS is a paradigm specimen of an extensively studied efficacious alcohol prevention activity that would qualify for such a fitting adaptation.

Recently some researchers, while retaining the same style and format, have modified the original BASICS intervention for application also to post-secondary students' use of illicit substances and misuse of prescription medication (Amaro et al., 2010). Post-secondary students who sought medical and mental health care at a US university were recruited for the study through health and counselling services or through a self-referral system. Students eligible to participate had to satisfy the criteria for problematic substance use. Participants were administered the modified BASICS intervention. This intervention consisted of two sessions (45-60 minutes in length each) facilitated by a study nurse. The topics of discussion included: gathering information about the student's alcohol and other drug use, giving alcohol self-monitoring cards to complete, giving personalized feedback on the student's substance use, exploring perceptions of other students' drinking compared to the actual usage data, blood alcohol content, beliefs about alcohol, consequences, risk factors, and an assessment of the student's readiness or motivation to change. Students were given a feedback package which included information reviewed during the sessions, the goals they had set for reducing their drinking and drug use, strategies they had chosen to achieve these goals, and local resources they might choose to use in the future. Data were collected at baseline and at a six-month follow-up. Results revealed that drinking, illicit drug use, and non-prescription use of prescription drugs decreased between baseline and the six-month follow-up. Specifically, past six months' frequency of marijuana and cocaine use

significantly decreased between baseline and the six-month follow-up. These findings give support for the adaptation of promising alcohol interventions to include other drug use.

Research towards development of such brief intervention for college students especially in regard to cannabis has been moving forward. Issues which this study agenda has taken up include risk perceptions (Kilmer, Hunt, Lee, & Neighbors, 2007), perceived descriptive (behavioural) and injunctive (attitudinal) norms, and different associations of those perceptions and social expectancies with use-related consequences (Kilmer et al., 2006; Neighbors et al., 2008). Similarly, investigation into motives for use has identified a number that are evidently in play and are variously associated with use patterns and experience of problems, resulting in preliminary validation of a useful questionnaire (Lee, Neighbors, Hendershot, & Grossbard, 2009; Lee et al., 2007). A decisional balance has also been crafted to take into consideration such factors within motivational discussions (Elliott, Carey, & Scott-Sheldon, 2011). All of this is forging appropriate components that can be tailored for discussion of particular individual experience. A trial of one initial web-based attempt at a BASICS style personalized feedback selective intervention, while promising, has indicated the need for further refinement of audience, timing and mode considerations in reaching students where they're at in their readiness to entertain online outreach and in-person encounters around their relationship with cannabis (Lee et al., 2010). Another cannabis-oriented web-based intervention for college students, the marijuana e(lectronic)-Checkup to Go is modeled after the alcohol version but has not yet received the evaluation to which its parent has been exposed with encouraging results. Though not so far along, work has also been proceeding on instruments addressing non-prescribed stimulant medication use (e.g., an outcome expectancies questionnaire inspired by earlier research on the role of expectancies in alcohol use and the evident intervention value in challenges of such expectancies, (Labbe & Maisto, 2010, 2011).

In more individually-directed initiatives in regard to alcohol use among those entering or in their first year of college, parent-based interventions (e.g., supplying them with a handbook to encourage and offer guidance on constructive conversations with their student) have shown some benefit, even more so in combination with other supports for students. One study that examined a thrust providing both the handbook for parents and BASICS for their students found that it also contributed to reductions in cannabis use relative to BASICS only and control groups (Grossbard et al., 2010). Such findings add to expectations that resources of this sort explicitly relating to other substances could have further preventive and harm reduction value for students as they already have in connection with alcohol use.

Social Norms Marketing
One popular avenue of addressing alcohol-related concerns with post-secondary students has been that of social norms marketing (SNM). Students have been found to overestimate the frequency and quantity of alcohol and drug use among their peers, and the perception of peers'

substance use predicts and explains a significant amount of variance in one's own use (Kilmer et al., 2006; Neighbors et al., 2008; Polymerou, 2007). Social norms marketing aims its broad messaging at a general campus audience, positively publicizing actual norms that differ from common misperceptions to which intentionally no reference is made. With this tacit clarification, SNM implicitly invites yet wider self-situation in proximity to the real norms than the presumed ones (that are associated with more adverse outcomes). As such, social norms marketing is less direct and explicit than its counterpart of personalized normative feedback (PNF) used in the context of brief or extended motivational enhancement and cognitive-behavioural skill training. SNM also has less consistent evidence to support it than does the more immediate pointed presentation of discrepancy provided in PNF (between the actual norms and the person's own impressions and behaviour/stances). While social norms marketing does communicate to students with a view to informing them individually, it aims to alter the collective consciousness (and behaviour) of a student community and does get treated in discussions of environmental efforts. Research in regard to efforts around alcohol indicates not only that SNM has to be employed in a rather rigorous and sustained manner to make significant headway, but that it also benefits substantially from being complemented by other initiatives to shape the milieu (such as limiting outlet density in an area to which students have ready access (Scribner et al., 2011).

Comprehensive Initiatives
Architects and reviewers of individually-focused student drug prevention activities typically acknowledge that such interventions need to be supplemented by initiatives that have a broader, ecological focus. Reviewers of the campus context in regard to response to issues around other drugs again acknowledge that efforts focused on alcohol provide the paradigm (e.g., Larimer et al., 2005). This is so even if the current differing legal status of other substances complicates matters and limits some of the options that might otherwise be usefully pursued.

One controlled study treated in an individually-oriented review discussion (Larimer et al., 2005) was in fact a multi-component campus-wide intervention aimed to target five levels of intervention simultaneously including individual, small group, organization, community, and policy targets (Miller, Toscova, Miller, & Sanchez, 2000). It was based on a self-regulation model of motivation and behavior change where interventions included "extensive print media focusing on increasing risk perception regarding drug and alcohol use, driving under the influence, and riding with impaired drivers; videotapes designed to encourage students to enroll in courses focusing on drug and alcohol prevention; several campus-wide events such as alcohol and drug awareness weeks; distribution of referral information and availability of individual 'drinkers check-ups;' and, Computerized Lifestyle Assessments for interested individuals, among other interventions" (Larimer et al., 2005, p.436). The study results indicated that, relative to a control campus, students in the program campus had significantly higher perceived risks from substance use and significantly reduced levels of alcohol and marijuana use (Miller et al., 2000). Study limitations included the lack of comparability between control and intervention

campuses on several measures prior to the intervention, timing differences between the baseline assessments for the control group and the intervention group, and the use of multiple statistical tests without controlling for experimental error rate (Larimer et al., 2005; Miller et al., 2000). Additionally, the intervention was composed of many different components, which made it difficult to attribute differences in outcomes to any specific part of the intervention (Larimer et al., 2005).

Promote Connectedness and Involvement
Efforts to cultivate stronger connectedness among students and between them and staff personnel (teaching, administrative, and those providing services of various sorts) as well as with off-campus people and constituencies beyond the boundaries of academic life, are recognized as important. The building of such positive relationships, and with those ties, a sense of belonging, identification of caring sources of support, encouragement in opportunity to participate and contribute, development of citizenship responsibility and purpose in life, all plays a significant part in deterring students from reliance on use of substances to achieve various ends.

One way in which post-secondary institutions can and do act (with varying degrees of commitment and allocation of resources) in this regard is by supplying extracurricular positive socialization and recreational situations in which substance use is rendered unneeded and inappropriate if not also explicitly unwelcome or not permitted. Settings will include student leisure clubs, available meeting spaces and living quarters, sports activities and entertainment events as well as regular opportunities for informal interaction with those who are non-student members of the campus community.

Much of the available research has focused on festive (and especially alcohol-free) events with concern as to how these might prove sufficiently attractive to students, but the same basic challenges are at play if an endeavor is consciously seeking to relativize other substances as well (Correia, Benson, & Carey, 2005; Maney, Mortensen, Powell, et al., 2002; Maney, Mortensen, Harlow, et al., 2002; Murphy, Barnett, & Colby, 2006; Murphy, Barnett, Goldstein, & Colby, 2007; Murphy, Correia, & Barnett, 2007; Patrick, Maggs, & Osgood, 2010; Polymerou, 2007; Wei, Barnett, & Clark, 2010). Campus-based residential arrangements and learning communities designated as substance-free are another context for which investigation suggests conduciveness to prevention of drug-related concerns in more than name only (Cranford et al., 2009). Some occupation by staff of on-campus housing alongside or nearby student residents will afford additional occasion for meaningful exchange and protective connections.

Initiatives that engage students in service involvements on and off campus are a further example of cultivating connectedness, enhancing the environment through community building activity. Peer support programs, research programs and other projects that include faculty and students, and participation in local area service groups – whether on a voluntary, curricular or otherwise

mandatory basis – can promote health and reduce liability to the emergence of difficulties (Borsari, Murphy, & Barnett, 2007; Weitzman & Chen, 2005; Ziemelis, Bucknam, & Elfessi, 2002). Efforts that encourage off-campus residents to be active alongside their near neighbours in community improvement enterprises should have benefit in the same direction.

Collaborations between campuses and their surrounding communities, composed with solid student representation, can address local conditions that are unfavourable to mental well-being including healthy relationships with substances. Such partnerships when functioning in a constructive manner simultaneously support student maturation and ameliorate settings in the near-term, with positive prospects being established for long-term impact (Clapp & Stanger, 2003; Wagoner, Rhodes, Lentz, & Wolfson, 2010; Weitzman, Nelson, Lee, & Wechsler, 2004).

Regulatory Strategies

Another aspect of socio-ecological activity involves influencing the environment in more regulatory ways to make it more congenial to health and less amenable to behaviours that jeopardize wellness. Academic means can be employed to discourage substance use that would interfere with success, though balance will require careful deliberation. Strong entrance-related criteria to underscore a commitment to academic excellence and high performance standards may help diminish expectations of a party atmosphere. But, overly done, such demands can (besides being exclusionary) contribute to a climate that severely restricts enjoyment, increases pressures and even pushes some to seek relief or augmentation via substances (cf. Ford & Schroeder, 2008). Study requirements that are too soft and allow excessive free time run the risk of ill-advised student use of that unstructured space; conversely, those standards that are unduly demanding and engender added strain leave students susceptible to differently motivated recourse to drugs. Institutions may wish to contemplate how best to commence academic terms with orientation sessions and a full week of classes, following up with strategic scheduling of core classes (on Friday mornings). Likewise meriting consideration are evenly distributed dates for assignments and exams, with finals being spread out over a period of sufficient duration as to mitigate build-up of stress (e.g., DeSantis, Webb, & Noar, 2008; Wood, Sher, & Rutledge, 2007).

Professorial and departmental commitments to ample ready availability of teaching personnel for consultation, measures to encourage attendance and participation in class (including format and layout), and consistent grading practices should all contribute to healthier and more successful students. Instructors who foster a rapport with students enhance a protective factor against use of illicit drugs and open up opportunities for communication that could deter non-medical use of pharmaceuticals toward supposed advantage in studying (Ford & Arrastia, 2008).

Formal approval of and provision for curriculum infusion is another academic measure, more educational than regulatory, that serves to orient students across a broad range of disciplines to

the historical, cultural, political, social, economic and health issues related to cultivation, production, marketing and consumption of psychoactive substances, along with the personal and societal management of adverse consequences. Administrative backing could include stipends for course content development (Cordero, Israel, White, & Park, 2010; Sabina White, Park, & Cordero, 2010).

Codes of conduct for campus communities can be useful mechanisms of encouraging respectful mutual regard that supports health and safety for their members. Disciplinary enforcement of standards in the case of drinking-related violations has often given opportunity for beneficial interventions to adjudicated students mandated to alcohol counselling sessions, whether one on one or in group installments (Barnett & Read, 2005; Terlecki, Larimer, & Copeland, 2010). As part of a governing commitment to health and well-being, institutions need to take care that their stance and applications relating to conduct policy infractions involving other drugs does not needlessly hinder offenders from receiving help and otherwise cause them unnecessary harm (Palmer et al., 2012). Ideally the process to be followed consistently will be primarily characterized by a restorative rather than punitive thrust. Underscoring the pre-eminence of supporting wellness may involve explicit identification of actions which will not incur any sanctions (such as reporting an emergency situation like overdose to responsible services, as in so-called Good Samaritan or medical amnesty policies; cf. Lewis & Marchell, 2006; Oster-Aaland & Eighmy, 2007). Parental notification in the event of repeated infringements of a conduct code may aid the cause of future compliance (Lowery, Palmer, & Gehring, 2005), though some accompanying if not preceding guidance to parents may again improve likelihood that this avenue of support can be constructive rather than alienating or divisive.

Regulation of availability of alcohol is a recognized critical piece in discouraging post-secondary student drinking behaviours that are hazardous. This will often involve varying contexts and degrees of restriction on and off campus, ranging from limited access under surveillance to prohibition (DeJong & Langford, 2002; Toomey et al., 2007). The illegal status of other drugs prevents several alternative strategies of regulation from being employed in their case. However, campus health centres can adopt policies that have clinicians review students' medical records prior to issuing prescriptions, limit the duration and amount of supply, discuss with patients the health and legal risks of diversion (distribution of medications by recipients to others for whom the prescription was not intended and authorized) and require patients to sign an informed consent form to follow cautionary advice given on this matter. Comprehensive protocols for diagnosing ADHD that aid in detection of pseudo-cases and monitoring of legitimate recipients for liability to engage in diversion can also serve to help decrease misuse of pharmaceuticals (Arria & DuPont, 2010).

Regulation of advertising is another recognised piece in relation to alcohol-related concerns. In that connection it often takes the form of limitations for licensed establishments on campus and

prohibitions around publicizing beverage products, distribution and drinking at social events elsewhere to which students are invited. It can also include strictures against promotional merchandising in campus bookstores. The illegal status of other drugs facilitates rigorous prohibition of any advertising on campus that would indicate their availability at gatherings aiming to attract students. A stance might be taken against any campus promotion of online mail-order pharmacies and also perhaps in support of tighter public regulations for commercial manufacturers and distributors. The latter initiative could seek a more clearly demonstrated direction of message away from younger audiences and encourage marketing of extended-release or slower-onset products that do not lend themselves to non-medical use purposes (Arria & DuPont, 2010; Hamilton, 2009).

Campus-community collaborations have proven useful in applying consistent regulatory initiatives around alcohol beyond campus property outward into adjacent municipal domains where students, whether living in neighborhoods or frequenting local venues and events, are influenced by conditions in these areas and in turn have an impact on other residents and constituency bodies (Linowski & Difulvio, 2011; Newman, Shell, Major, & Workman, 2006; Ringwalt, Paschall, & Gitelman, 2011; Saltz, Paschall, McGaffigan, & Nygaard, 2010; Saltz, Welker, Paschall, Feeney, & Fabiano, 2009; Wood et al., 2009). Effectiveness in relation to problematic drinking suggests that the same kind of concerted partnerships can be useful in addressing contexts that are also conducive to other-drug facilitated personal injury and public disorder such as mismanaged parties and exploitive tenancy arrangements. Support for local ordinance and broader law enforcement activity is typically a major focus of the agenda. Collective endeavors at building consensus that situate such enforcement efforts within a comprehensive thrust to improve multiple mental health determinants can be expected to contribute in a more grounded manner to positive cultural change (cf. Spoth et al., 2011).

Scan of Existing Activities in British Columbia

The following is a summary of the findings from a scan of existing substance use prevention and cessation activities, resources, and policies at British Columbia post-secondary institutions. The scan sought to explore activities, resources and policies related to illegal drugs and the non-prescription use of pharmaceutical drugs. Attempts were made to contact individuals at 16 post-secondary institutions in BC. Individuals at 14 institutions were successfully contacted. They were requested to provide information regarding any prevention or cessation activities, resources, or policies related to illicit drug use (including the non-prescription use of pharmaceutical drugs) at their institution. This included asking about budgets, key contacts, and any evaluation results to date from these activities. The individuals who were contacted at each institution were working with counselling services, student services, or health services, as these individuals are often aware of drug prevention and cessation activities. They were also asked to identify any other key individuals at their institution who could provide information on such activities. When individuals were identified they were subsequently contacted for more

information. A detailed list of those who were contacted and provided information can be found in Appendix 1. The websites of all 16 identified post-secondary institutions were scanned for information regarding substance use prevention and cessation.

Few of the institutions had activities, resources or policies specifically related to illicit drugs. Most were involved in some activity to address substance use usually with a focus on alcohol or tobacco but including other drugs. Others had an even more comprehensive focus on mental health or wellness. Some of the activities that impact on illicit drug use but which are part of these broader initiatives may not be well represented in the data due to the nature of the request for specific information regarding illicit drug use, including non-prescription pharmaceutical use, prevention and cessation activities.

Provision of Information
The vast majority (13 out of 16) of the post-secondary institutions scanned are involved in sharing relevant health information with students. The most common mechanism for this activity was through the provision of online information. Ten institutions had online information or links specifically related to substance use and two other institutions had more generic health information that would be useful with respect to substance use. Seven institutions reported having utilized health fairs, awareness days, displays or posters to share information about alcohol or other drugs. Three reported having provided workshops and three reported distributing brochures or other printed material.

For those providing substance use information the main focus is often alcohol but illicit drug use is usually included. Distribution of print materials is usually limited to clinical settings (e.g., in the counselling centre) or in the context of health fairs or special displays. Other than online information, most of the other initiatives happen on an intermittent basis.

Alcohol and other Drug Screening
Two institutions reported doing standard alcohol and drug screening with students accessing health or counselling services. Alcohol and other drug issues are then explored with students when indicated. One institution reported participating in the *Beyond the Blues* screening and education events. This is an annual program sponsored by the *BC Partners for Mental Health and Addictions Information* to support community partners in conducting screening and education days for depression, anxiety and risky drinking. One institution also reported promoting web-based alcohol screening. The authors are aware that at least two other BC post-secondary institutions are or have been promoting online alcohol screening among students. These were not captured in the scan, probably as a result of the scope definition noted above.

Treatment and Referral Services
Half of the post-secondary institutions scanned (8 out of 16) reported providing counselling services to their students. These services do not focus on substance use but address substance use issues when they arise. Three institutions reported making direct referrals to community-based treatment services. One even spoke of "building a relationship with a new recovery center" in the community. Five institutions included links on their website to alcohol and drug services available in the community. Two of these five institutions did not provide any other treatment services whereas this information was in addition to other services for the other three institutions.

Various Environmental Strategies
Five of the institutions reported various strategies or initiatives that impact the broad campus environment to reduce substance use or increase responsiveness to students experiencing problems related to substance use. These initiatives ranged from conducting social marketing or normative feedback campaigns as part of class activities in some departments to investing in creating a very broad "College Safety Net." The safety net group consists of individuals from campus security, counselling services, ombudspersons, a college lawyer, student disabilities, aboriginal education services, and international education and meets every two weeks. Students are referred to this group by faculty or staff who have concerns regarding the student's behaviour, which may or may not contravene the student code of conduct but appears to place the student at risk. These behaviors could be related to academic, health, or mental health concerns and they may involve drinking or drug use. The group functions as a sort of "think tank" for problem solving and developing intervention strategies in order to help support the student. Other reported initiatives included a non-credit class for first-year students to discuss current topics contributing to their success at the university and training a cohort of students each year to act as health educators on campus. In one case, it was suggested that the unique characteristics of the institution (e.g., small class sizes and programs focused on law enforcement and first responders) acted as environmental protective factors.

Policy Initiatives
Only four institutions cited policy initiatives. Of these, two were with reference to student conduct policies including policies related to the use of alcohol or other drugs on college premises and in college related activities. One institution reported an alcohol awareness committee on campus that has been running on-and-off for several years and that has looked at different institutional policies regarding alcohol use.

One institution reported currently developing a comprehensive and systematic student mental health plan. This plan will focus on a broad range of prevention activities and look at the role that all departments and faculty can play in developing a healthy campus community. This plan will address different policies and procedures that the university may adopt to promote health and wellness. The plan addresses building awareness, increasing wellness education outreach,

increasing skill building capacity, and building strategies to manage mental health concerns. It is taking a proactive approach, and they plan to provide prevention tools (e.g., interactive web-based resources, enhancing coping skills) but also target and identify those that require mental health intervention. The goal is to create an institution with a strong continuum of care, which provides good and timely access to services for all students.

Data Collection and Surveys
Three institutions made reference to the use of surveys in collecting data about drug use related issues. Two of these were locally developed surveys that were connected to class projects whereas one institution reported participating in the bi-annual National College Health Assessment survey. This survey, among other things, collects information on alcohol and other drug use at post-secondary institutions. The results can be used for both planning and research purposes. This US-based tool is available for British Columbia post-secondary institutions, and at least one other institution in the province has participated in the past.

Healthy Minds/Healthy Campuses
Fifteen of the 16 post-secondary institutions scanned participate in the Healthy Minds/Healthy Campuses community. Healthy Minds/Healthy Campuses is a province-wide community of practice comprised of students, campus professionals, faculty, and administrators. Since 2004, the initiative has grown into a vibrant and diverse learning community including representation from over 20 post-secondary institutions in BC. In keeping with ideas that inform community of practice development, the main focus of this initiative is the support and facilitation of creative and collaborative learning opportunities for campus community members, designed to enhance understanding and capacity in mental health promotion, the reduction of harmful substance use, and suicide prevention amongst BC post-secondary student populations. The community is thus interested in the development, implementation, and review of policies that might have indirect and direct implications for campus mental health and substance use.

Several additional goals inform the work of this community. The first goal is to support capacity both within and between BC colleges and universities to respond to the complexities of mental health and substance use at the level of individual students and at the level of the institutional environment or context. The second goal is to support and make available the local wisdom and expertise that exists within the community to create collaborative and responsive solutions to the local realities that each campus exists within. Finally, the initiative seeks to employ a research-informed approach in its efforts, drawing from the available evidence and analysis in campus mental health and substance use.

The community uses both face-to-face and virtual interaction to accomplish its learning goals. They accomplish their learning goals through a series of activities that include mental health and

substance use focused webinars, an annual summit, web-based mental health and substance use literacy content, and regular interaction and consultation with the community of practice.

The Canadian Mental Health Association (BC Division) and the Centre for Addictions Research of BC have built significant capacity and momentum to support campuses in their responses to the complexities of promoting positive mental health and reducing harms associated with problematic substance use. The accumulated knowledge, history of innovation, and strong relationships between campuses, allied agencies, and government provide a strong platform to initiate, support, and sustain collaborative responses to promoting campus mental health and shifting the campus culture related to substance use.

Recently, Healthy Minds/Healthy Campuses have provided Campus Capacity Grants funded by the BC Ministry of Health, to campuses in order to support BC post-secondary institutions in building capacity and encouraging innovation in campus mental health promotion and reduction of risky substance use. Each grant provided stimulus funding to encourage institutions to convene diverse and cross-sectoral representation to achieve some shift in campus culture relative to mental health or substance use in particular. They provided grants to applicants that proposed a unique, innovative, and creative project that fell into the broad domain of promoting campus mental wellness, including healthy relationships with psychoactive substances.

The lead partners for Healthy Minds/Healthy Campuses are the Canadian Mental Health Association (BC Division) and the Centre for Addictions Research of BC. Healthy Minds/Healthy Campuses is managed and coordinated on behalf of the BC Partners for Mental Health and Addictions Information by Canadian Mental Health Association (BC Division). The BC Partners for Mental Health and Addictions Information are a group of seven leading provincial mental health and addictions non-profit agencies working together to help individuals and families better manage mental health and substance use problems.

Limitations

The current investigation was conducted over six weeks during February and March, 2012. This is a busy time of year for many post-secondary student services. Consequently, some institutions or specific individuals may not have had the time available to reply to our requests for information. The results are limited as not all institutions investigated replied to our requests for information. In general, the time allotted for this project was limited and therefore any interpretation of the findings should take this into consideration. Specifically, the findings represent a *scan* of the existing activities in British Columbia and are not the results of an in-depth investigation. The results of the scan also represent the knowledge of the individuals contacted at each institution, which may not represent all of the activities that are occurring at that institution. Of note, some institutions investigated may be addressing substance use by focusing their resources on enhancing student health and wellness at a more structural level.

These activities may not be well represented in the current report as the institutions were specifically asked for information regarding activities related to illicit substance use and prescription misuse. Despite this, as described above, efforts were made to contact key individuals at each institution who were likely to be aware of substance use prevention and cessation activities.

Discussion

Generally, post-secondary institutions in BC appear not to have initiatives targeted specifically at addressing illicit substance use or the non-medical use of prescription substances. Such efforts were often considered under more broadly defined initiatives to address all substance use (including alcohol) or to increase general student health and wellness. This is positive in that it fits well with the policy direction adopted by British Columbia and set out in *Healthy Minds, Healthy People: A Ten Year Plan to Address Mental Health and Substance Use in British Columbia* (Ministry of Health Services, 2010). Post-secondary institutions should focus attention on promoting positive mental health, and attention to substance use should be seen within this holistic health promotion frame of reference.

The danger is that institutions may claim to be using a broad health promotion approach but lack a clear theoretical basis for coordinating strategy and action. Fortunately, the vast majority of the post-secondary institutions contacted are members of Healthy Minds/Healthy Campuses which has become a focal point for promoting a socio-ecological model of health promotion and is actively engaged in supporting campus communities to explore ways to use this model to address mental health and substance use issues in their settings. At this point, it is still unclear to what extent this has contributed to the creation of specific activities, programs, or policies at their individual institutions.

For the institutions where substance use was specifically addressed, efforts appeared to largely focus on alcohol and tobacco use. Again this is not inappropriate given the current state of evidence related to the respective contributions of these substances to the overall burden of harm. However, some attention should be given to the potential of illicit substances and prescription medications to result in harm for members of the campus community. For those institutions that did specifically address these other substances, efforts mostly involved providing information (brochures, talks, website), individual counseling, referrals to community resources and a mechanism whereby institutional staff can identify students who may be at risk for substance use problems.

It appears that some institutions are well on their way to offering a continuum of services and supports focused on enhancing student health and wellness that includes addressing substance use. These activities may not have been captured in the scan as the institutions were specifically asked for information regarding activities related to illicit substance use or prescription misuse.

Several institutions have also been in contact with local resources that may help them develop evidence-based campus-wide approaches to addressing substance use (e.g., Center for Addictions Research of BC). It is still unclear to what extent these interactions have contributed to the implementation of ongoing activities and development of campus-wide approaches. One of the challenges to-date has been the lack of capacity within some institutions to focus on building comprehensive strategies across multiple stakeholders.

It is crucial for post-secondary institutions to be aware of their students' general wellness and relationships with substances. Such awareness can help inform decisions regarding the need for policy refinement and other actions to improve mental health and intervene in ways that will discourage risky substance use and prevent harm. Surveys of students' wellness and substance use activities are a useful, but not sufficient, instrument to guide interventions and help determine the effectiveness of prevention or cessation activities that post-secondary institutions implement. Although some institutions appear to be surveying their students on such matters, others did not report engaging in this type of monitoring. The Canadian Campus Survey was last conducted in 2004. Some post-secondary institutions appear to have now made other arrangements in order to survey their students. For example, at least one institution takes part in the bi-annual National College Health Assessment survey conducted by the American College Health Association. It would be advantageous for all campuses to have access to the results of such surveys for their institutions in order to help prioritize, plan, create, and evaluate substance use prevention and cessation activities.

Some limitations have to be noted, however. While the Canadian Campus Survey and National College Health Assessment do query somewhat regarding alcohol-related harms, they do little to measure the adverse consequences related to other substances. They also shed no light on other contextual features associated with use patterns in the case of these other drugs. Moreover, with their focus on the *students*' behaviours, these instruments provide no significant illumination on the *institutions*' own strengths and weaknesses. Other tools need to be employed in order to get a well-rounded assessment that fills in the environmental picture and clarifies assets as well as deficiencies at more collective levels.

No institutions identified research or investigations as to whether any of their activities had successfully reduced substance use or negative consequences related to substance use. This is similar to the international literature where activities aimed at substance use prevention or cessation at post-secondary institutions are generally not investigated for real impact (Larimer et al., 2005). There is a clear need for improvement in this area, recognizing the challenges involved. Clear description of objectives and adoption of initiatives with a view to meeting those goals is crucial for an appropriate evaluation of effectiveness. Appreciation of complexity in the array of contributing factors involved will support utilization of diverse measurement devices to

chart progress. Patience may be required in awaiting the oft-times gradual occurrence of significant shifts in the campus milieu.

The most conspicuous typical lacuna in BC post-secondary institutions' efforts in responding to concerns around substance use is the absence of a well-articulated and consistently applied holistic health promotion frame of reference for activities (policies, programs, practices) that will integrate endeavors. Such a unified approach will transcend conventional distinctions between licit and illicit drugs and will link efforts at individual empowerment (in literacy and resilience) and institutional improvement (in culture of connectedness and mutual support). This kind of thrust will incorporate a range of initiatives that complement each other so that, for example, an institution concerned to equip students to better cope with stress would also be disposed to review its own operations with a view to mitigating stressors. By the same token, social norms campaigns for students would not be undertaken apart from conscious commitment to establish and institutionalize actual norms among school staff personnel at all levels to be accessible to support and encourage students in their multifaceted learning experience.

Generally, post-secondary institutions engaging in individual-level outreach to students could do a better job of using new media to enhance, rather than replace, in-person services. Minimally this would include campus promoted web-based resources that not only provide substance specific information pertinent to students but also direct students, in an inviting manner, to campus or local in-person services. Easy access, positive tone and encouraging tenor may be more critical than extent of content. Clear and consistent institutional adherence to a wellness promotion perspective, in both online and in-person services and supports, can help overcome the stigma often attached to mental health and substance use problems and challenges. More complex interactive media can be employed to provide self-help through online screening with personalized feedback, e-learning opportunities and positive social networking and support.

Addressing the existing gaps will involve allocating resources for coordination and management of sustained initiatives to build capacity among staff and students across various campus sectors. The goal should be to evolve a matrix of policy, curricular, environmental and service elements that contribute to a health promoting community (see, e.g., DeJong & Langford, 2002). These elements must take into account the diversity of needs within the community and respond with a range of coordinated services and supports.

Recommendations

Addressing the harms related to illicit drugs and prescription medications within post-secondary settings should be seen as an extension to the socio-ecological strategy more commonly used to address alcohol. Lessons from the literature and the experience of British Columbia post-secondary institutions in applying comprehensive strategies to various issues can be drawn upon to guide future development (see, e.g., Koester, Eflin, & Vann, 2006). The following

recommendations are based on the results of the literature review and scan of BC post-secondary institutions.

1. BC post-secondary institutions should be encouraged to implement a broad socio-ecological approach to mental health and substance use that includes attention to illicit drugs and prescription medications.

2. Post-secondary institutions should be encouraged and enabled to work collaboratively with each other through the Healthy Minds/Healthy Campuses initiative and with local partners such as the Center for Addictions Research of BC. Capacity limitations within the institutions and within these provincial support mechanisms need to be addressed.

3. Specifically, attention should be given to developing strategies and mechanisms to provide broad training across various campus sectors in the basic concepts related to health promotion, substance use and the socio-ecological approach.

4. Post-secondary institutions should be encouraged and enabled to develop, implement and evaluate specific initiatives that focus on the individual and initiatives that address environmental factors. This may involve further development of the Helping Campuses provincial resource centre (a repository of promising practices, tools and resources at http://carbc.ca/HelpingCampuses.aspx). But it should also involve mechanisms to support implementation and evaluation though consultation, knowledge exchange, and research capacity.

5. Post-secondary institutions should be supported in the collection, analysis and use of good on-going data to measure the adverse consequences and contributing factors related to substance use. Ideally this would be part of a larger program of monitoring students' general mental and physical health, health behaviours and access to services and supports and of monitoring the institution's activity in creating a health promoting campus.

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Appendix 1 - List of Post-Secondary Institutions Contacted

British Columbia Institute of Technology
Heather Hyde – Counsellor, Counselling and Student Development

Camosun College
Chris Balmer – Counselling Services

Douglas College
Sandra Strate – Counselling Services

Justice Institute of British Colombia
Glenda Kerr – Coordinator, Student Counselling and Advising

Kwantlen Polytechnic University
Laurie Detweiler – Counselling Services
Izgy Gocer – Counselling Services

Langara College
Susan Kensett – Community Health Nurse at Langara College Student Health Services
Adrian Livesley – Counselling

Okanagan College
Derrick Doige – Chair, Counselling Services

Simon Fraser University
Martin Mroz – Director, Health & Counselling Services

Thompson Rivers University
David Lidster – Counselling Services

University of Northern British Columbia
Devi Parsad Milligan – University Nurse/Clinical Coordinator, Health Services, Wellness Center
Sarah Hanson – Wellness Centre Manager

University of British Columbia
Cheryl Washburn – Director, Counselling Services
Patricia Mirwaldt – Director, Student Health Services

University of Victoria
Zoe Woods – Coordinator, Residence Community Standards, Residence Services
Terry Forst – Coordinator, Student Development & Programming, Residence Services
Dave O'Brien – Counselling Services

Vancouver Community College
Maija Wiik – Counsellor at Counselling and Disability Services

Vancouver Island University
Craig McGuigan – Coordinator/Counsellor, Counselling Services

Please Note: Other potential informants were contacted but we did not receive a response to our request for information. These included those contacted from **Capilano University** and **University of the Fraser Valley.**