HARM REDUCTION

FOR SPECIAL POPULATIONS IN CANADA

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Harm reduction policies and programs for youth

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This document is intended to provide current, objective and empirically-based information to inform the implementation of policies and programs for promoting the reduction of harms associated with substance abuse in Canada.

This is one in a series of four documents on harm reduction for special populations in Canada. The series comprises the following titles:

1. *Harm Reduction Policies and Programs for Persons Involved in the Criminal Justice System*
2. *Harm Reduction Policies and Programs for Youth*
3. *Harm Reduction Policies and Programs for Persons of Aboriginal Descent*
4. *Harm Reduction Policies and Programs for Persons with Concurrent Disorders*

Introduction

In Canada, harm reduction has largely become accepted as the philosophical underpinning of the public health response to substance use. Examples of harm reduction strategies include methadone maintenance, needle exchange and server intervention programs. In general, these harm reduction interventions have had adult substance users as their implicit target. Increasingly, however, harm reduction is being advocated as a population-based strategy for all youth, not just those at high risk of harm. Proponents of harm reduction point to high rates of substance use among youth, the limited effectiveness of drug prevention programs and the difficulty of targeting programs to high-risk adolescents.[1-3]

Harm reduction for youth is controversial. In Canada, federal and provincial laws prohibit the sale of alcohol and tobacco to minors, but not to adults. Cannabis, the second most commonly used substance by youth, is an illegal substance for all Canadians. Concerning the substances most commonly used by youth, Canada's laws support abstinence as the desired stance for prevention efforts and identify youth as being, in a real way, a vulnerable sub-group of the population. Harm reduction is also controversial because there is little evidence regarding the effectiveness and safety of harm reduction as an approach to substance use by youth.

Thus, while harm reduction appears to be promising as an approach to youth substance use, there is a need for reflection and debate by decision makers, practitioners and the general public about this emerging approach. The purpose of this paper is to stimulate discussion about this topic by critically appraising the theoretical and empirical basis of harm reduction as a potential philosophy and goal of policies and programs addressing substance use and abuse among youth in Canada.

What is harm reduction as it might be applied to youth?

Harm reduction is defined as an approach that focuses on the risks and consequences of substance use rather than on the use itself. Harm reduction accepts the fact that many people use substances and considers a drug-free society as an unrealistic and impractical goal of policies and programs addressing substance use.[3] One of the major tenets of harm reduction is that it remains neutral on the topic of abstinence — use is neither condoned nor condemned.[4] Thus, harm reduction philosophy views abstinence as only one potential strategy among a broad range of options that can reduce the health and social harms associated with alcohol and drug use.

Whether applied to adults or youth, the definition of harm reduction is the same. What distinguishes harm reduction as applied to youth are three issues related to implementation. These issues are the fledgling autonomy and ability of youth to make wise decisions concerning substance use, the specific risks and harms associated with youth substance use, and the unique opportunities for drug policies and programs targeting youth.

The term “youth” is loosely defined and not necessarily bound by age, occupation or residence. Based on the 2004 Canadian Addiction Survey, it is clear that youth as a population continue to be at increased risk of substance-related harm for several years after having attained the legal age of access to alcohol and tobacco.[5] For the purposes of this paper, youth are thought of as being approximately 10 to 25 years of age. This span of 15 years encompasses a wide breadth of intellectual and emotional maturity, personal independence and legal status vis-à-vis substances and other behaviours that may be affected by substance use.

Table 1: Prevalence of key substance use indicators among youth 15 to 24 years of age, based on the 2004 Canadian Addiction Survey

	15 - 17 years	18 - 19 years	20 - 24 years	25 - 34 years
	%	%	%	%
Alcohol				
Past-year use				
Any use	62	91	90	85
Use 1-3 times/month	45	44	41	38
Use weekly or more often	17	34	45	40
Among past-year drinkers				
5+ drinks on a typical day[1]	29	43	32	22
Weekly heavy drinking[2]	8	16	15	7
Exceeded low-risk guidelines[3]	25	32	38	25
Positive AUDIT score[4]	31	45	34	21
Cannabis				
Any use of cannabis in the past year	29	47	37	20

Source: Adlaf, Begin & Sawka, 2005.

1. Usual quantity consumed on a typical day in the previous year, among past year drinkers
2. Heavy drinking is defined among men as having 5+ drinks on a single occasion and among women as 4+ drinks on a single occasion
3. The low-risk drinking guidelines recommend that men and women limit their weekly alcohol intake to no more than 14 and 9 drinks, respectively, and that alcohol intake on any given day should be limited to two standard drinks.
4. A score of 8+ in the Alcohol Use Disorders Identification Test (AUDIT) is considered to be indicative of hazardous drinking.

Regarding decision making, harm reduction is not a passive strategy that is "done to" participants. Rather, it is an active and interactive process. To practice harm reduction, individuals must be engaged in "self-management so that they may be capable of anticipating risky situations and generating viable, preferred alternatives that are suited to the situation at hand and reflect their own considered goals." [6] The entrenchment in Canada's laws of a specific age at which individuals may purchase alcohol and tobacco is a formal recognition by society that youth over a specified age are *on average* qualified to make informed decisions about those substances, and that youth under that age are *on average* not fully qualified. The main challenges for harm reduction addressing legal-aged youth are therefore pragmatic, focusing on the implementation of effective strategies. As regards under-aged youth, however, harm reduction is controversial due to serious ethical concerns.

Adolescence is a life stage characterized by increasing autonomy. The wide variability in emotional, social and intellectual development during this life stage gives rise to uncertainty and/or disagreement about adolescents' decision-making capacity, both in general and as it concerns the fundamentally illegal behaviours of substance use. This begs the question: At what age, *on average*, are youth capable of making informed decisions about using substances, the context of use and the means to minimize risks or reduce harms, including the choice to forego abstinence? It is important to distinguish between harm reduction as might be practised by an individual under-aged youth and harm reduction as a basis for population-based policies and programs targeting groups of under-aged youth. An individual under-aged youth may be fully competent in making a decision to use substances and to adopt a harm reduction philosophy, and may even have the support of his/her parents in those decisions. From a population perspective, however, policies and programs must be based on a weighing of the benefits and risks to the population *as a whole*. At what age are the benefits of a harm reduction approach expected to exceed the risks to the youthful population *as a whole*, that is, the age at which a substantial proportion of the under-aged population is foregoing abstinence, is at material risk of harm, and is capable of making and practising well-reasoned harm reduction choices?

Regarding risks and harms, the outcomes of harm reduction programs addressing youth tend to focus on problems such as troubles with friends or one's date or parents because of drinking or substance use, driving under the influence of a substance, unprotected sexual intercourse associated with intoxication, not doing well academically due to heavy use, or contracting a communicable disease such as HIV. An example of a negative consequence that would be considered adult-centred and therefore not be given high priority in most youth-focused harm reduction intervention is alcoholic cirrhosis of the liver, a debilitating and potentially fatal disease that typically occurs in the middle or later years of life after prolonged and/or heavy alcohol use. One of the features of youth-centred risks and harms is that youth themselves may not recognize or acknowledge some issues to be risks or problems. The notion of compromising one's future academic or career opportunities, for example, is a subtle problem recognized by adults, but not necessarily by youth.

Interventions addressing youth substance use may be universal, selective or indicated. Selective and indicated interventions target individuals or groups of individuals with specific characteristics or risk factors. In these types of interventions, the level of maturity and autonomy, and of substance use and risk, can be gauged with some accuracy. Appropriate goals can then be tailored to meet the needs of these individuals, including a goal not oriented toward abstinence.

In contrast, universal prevention is by definition an approach applied to a whole population, undifferentiated as to level of use, risk and maturity. Traditionally, universal programs have aimed to prevent or delay the onset of substance use, predominantly through drug prevention education delivered through the public school system. However, the effectiveness of these programs has been repeatedly shown to be minimal. Thus, the question now arises — Should drug prevention programs and policies in schools be subsumed under a harm reduction framework? The large number of under-aged youth potentially affected by a shift in school drug policy and programming — from having an explicit goal of abstinence to having one of harm reduction — makes this the single most important public policy question to answer regarding harm reduction targeting under-aged youth.

One barrier to harm reduction as a universal approach is that school administrators are concerned that a goal that is not explicitly abstinence in a school-based drug education program could potentially result in a legal challenge to their institutions or themselves personally.[7] A school administrator's duty of care toward the student body, including accountability to parents, clearly makes the perspective of school administrators highly relevant to the acceptability of school-based harm reduction drug education and policy. The debate on harm reduction as a universal intervention targeting under-aged youth therefore needs to be informed by the legal and policy constraints placed on schools and school boards.

What legislation and other formal policy in Canada supports harm reduction for youth?

If a school principal were to look to legislation or other formal policy in order to be able to support or refute a proposed school drug education program based on a harm reduction philosophy, what would he/she find?

A school principal is accountable to a school board and ultimately to a provincial Act pertaining to education, and therefore must ensure that all federal and provincial laws pertaining to substances are respected. The three substances most commonly used by minors still in school — alcohol, cannabis and tobacco — are all in some way illegal. The Controlled Drugs and Substances Act (1996) is a federal Act that makes it a criminal offence to possess, produce or sell cannabis, for all persons in Canada regardless of age. Regarding alcohol, various provincial laws prohibit public intoxication, possession of alcohol by a minor and the sale of alcohol to a minor. These laws also stipulate the age at which an individual may legally buy alcohol (age 19 in seven provinces, age 18 in Quebec, Manitoba and Alberta). The Criminal Code of Canada identifies impaired driving (whether by alcohol or another substance) as an offence. Regarding tobacco, the federal Tobacco Act (1997) prohibits the sale or giving of a tobacco product to "young persons" with the exact legal age being stipulated by provincial Acts. In addition, some provinces have implemented stringent tobacco control measures, such as explicitly prohibiting tobacco on school premises (e.g., in Nova Scotia, Smoke Free Places Act, 2002). Collectively, these Acts identify young persons as a vulnerable sub-group of the population, entrench abstinence as the correct stance toward alcohol and other drug use by young persons, and have a direct impact on the nature of school and school board policy toward substance use.

In addition to the above legislation, Canada has three statements of principle intended to inform substance use policy and action. Canada's Drug Strategy is a statement of principle about the federal government's response to substance use. The Strategy states that its "ultimate goal is to see Canadians living in a society increasingly free of the harms associated with substance use."[8] However, concerning youth and harm reduction, the language of the various iterations of Canada's Drug Strategy (1987, 1992, 1998, 2003) has been vague and open to interpretation. For example, the 2003 document has a goal that seeks "to decrease the number of young Canadians who experiment with drugs" (abstinence-orientation). The *National Framework for Action to Reduce the Harms Associated with Alcohol and Other Drugs and Substances in Canada*[9] has a section on children and youth that speaks to "delaying first use," "reducing the potential for related harm," and "delivering messages that are factual, age-appropriate, accessible and meaningful." Finally, the 1989 United Nations Convention on the Rights of the Child, ratified by Canada in 1990, identifies the civil, political, economic, social and cultural rights of the child.[10] Article 33 explicitly identifies abstinence as the goal of measures to protect children from psychotropic substances. Articles 5, 12 and 13 stress the notion of the child's rights being in accordance with age, maturity and evolving capacity within the context of parental responsibility, community involvement and local custom, and legal constraints. In summary, these three statements of principle can be used either to justify, or alternatively, to refute a harm reduction orientation of a school drug policy or program.

Harm reduction has become the predominant philosophy in the addictions field and in many areas of health, including public health and health promotion. A scan of the Internet websites of addictions agencies in Canada reveals detailed information about the prevalence of student drug use in several jurisdictions, but little if any information about the ability of harm reduction interventions to actually reduce substance-related harm or the risk of harm in youth.

Policy about youth substance use also exists in the educational system itself. By and large, such policy is mandated at the level of the school boards. A scan, performed for this paper, of the Internet websites of all the school boards in Canada showed various policies relevant to substance use under the guise of student code of conduct, discipline, health, child protection, confidentiality of student communications, student search and seizure, and tobacco policy. In general, substance use occurring on school property is viewed as a disciplinary issue. While it is possible that harm reduction policies have been formulated by these school boards, but not published on the Internet, only one document was found that spoke directly to harm reduction. In particular, a substance use policy that uses the language of harm minimization was created by one of the school boards participating in an experiment on school-based harm minimization in Nova Scotia.[11]

In summary, a school administrator in Canada who is open to adopting harm reduction as the basis of their school's approach to student substance use is faced with federal and provincial legislation as well as formal school board policies that support abstinence as a goal. Harm reduction is supported by various non-binding statements of principle at the national and provincial levels, primarily from a health perspective. Given this report card on existing policy, the cautious stance and reticence of a school administrator regarding the adoption of harm reduction as a universal intervention in his/her school or school board are understandable.

Thus, while the decision to adopt harm reduction as a basis of policy and programming targeted to legal-aged youth is straightforward, the situation regarding under-aged youth poses a difficult challenge to those who have a duty of care to the younger age groups. The burden of illness from substance use in the younger age groups as well as the effect size* of harm reduction interventions targeting that group must be sufficiently large that the benefit of the harm reduction approach outweighs an abstinence approach, and does so without compromising safety. An appreciation of the epidemiology of substance use among youth, and of the evidence of effectiveness of harm reduction interventions, is essential to arrive at an evidence-informed decision.

What does the evidence demonstrate regarding the effectiveness of harm reduction for youth?

Harm reduction is described as a pragmatic response to substance use. The decision about the appropriateness of harm reduction as a basis of policies and programs targeting youth may therefore hinge on the strength of the evidence about the effectiveness of the approach. To what extent have experimental applications of harm reduction policies and programs shown that the incidence or prevalence of harm experienced by youthful populations was actually reduced?

Framework used to evaluate the evidence

A systematic review was performed of the literature reporting on primary research projects or evaluations of actual programs examining the acceptability, efficacy or effectiveness of harm reduction approaches targeting youth. All peer-reviewed journal articles reporting primary research on this topic were identified in the major electronic database libraries. The Guide to Community Preventive Services — Methods[12] was used as a framework to evaluate the evidence. Accordingly, studies with a concurrent comparison group were rated as having the study design with the "greatest" suitability to inform on effectiveness. The strength of the body of evidence was summarized as strong, sufficient or insufficient based on the number of studies, the quality of evidence, the effect size and other effects such as harms.

The extent to which harm reduction was the guiding principle of a study was judged based on the following four attributes of harm reduction. First, the primary purpose of the project or program must have been to reduce harmful consequences associated with substance use.[13] Second, the stance taken on the issue of abstinence with respect to an ultimate least harmful outcome must have been neutral.[4] Third, the concept of harm must have been viewed along a risk continuum.[3] Finally, harmful consequences must have been expressed in terms of measurable outcomes.[14] Thus, studies with explicit abstinence-based goals where a statistically significant reduction in the prevalence of a particular harmful consequence was discovered fortuitously were not considered to be experiments examining the merits of harm reduction itself (based on the second attribute mentioned above) and were not included in this present evaluation of evidence.

*A statistical term, which in this context refers to the relative effectiveness or impact of an intervention or program.

Summary of evidence pertaining to specific groups of youth

Under-aged youth in school

The prevalence of substance use among adolescents and risk increases with increasing grade. The most recent provincial student drug use surveys revealed that by grade 12 about 80% of adolescent students had consumed alcohol and more than 40% had consumed cannabis during the course of the year.[15-17] Table 2 shows that the patterns of use and risk among adolescent students vary considerably across Canada.

Three school-based harm reduction drug education projects met the criteria for inclusion in this review. All three studies were rated as having designs with the "greatest" suitability to inform on efficacy or effectiveness. All three identified the stages of change model[18] as one of the theories underpinning the intervention.

The School Health and Alcohol Harm Reduction Project (SHAHRP) was a well documented and implemented efficacy study of a universal harm reduction school curriculum, with 14 government secondary schools in the Perth, Western Australia, randomly allocated to intervention or comparison groups.[19-23]

Table 2 Prevalence of key substance use indicators among grade 7, 9 and 12 students in various Canadian provinces

	Nova Scotia 2002[1]			Ontario 2005[2]			Manitoba 2004[3]		
	Grade 7	Grade 9	Grade 12	Grade 7	Grade 9	Grade 12	Grade 7	Grade 9	Grade 12
	%	%	%	%	%	%	%	%	%
Alcohol									
Any use in the past year	16	51	81	31	65	82	23	60	84
5+ drinks/sitting in past month	7	24	54	3	19	43			
Drunk 1+ in past month	6	26	50	3	20	39	~3	~16	~43
1+ of 10 alcohol harms/risks	8	28	50						
1 or more of 7 symptoms for hazardous drinking on AUDIT				9	30	50			
Cannabis									
Any use in past year	9	34	54	3	23	46	4	23	42
1+ of 8 drug harms/risks	7	22	41						
Cigarette smoking									
Any smoking in the past year	10	22	35	2	13	23	8	23	36

1. Adlaf & Paglia-Boak, 2005.
2. Patton, Mackay & Broszeit, 2005.
3. Poulin & Wilbur, 2002.

The goal of SHAHRP was to reduce alcohol-related harm. Students in grade 8 (13 years of age) were followed until grade 10. The intervention students were found to be significantly less likely to drink to risk levels and to experience harm from their own use of alcohol, from the first to the last follow-up at 32 months.[21] SHAHRP showed a greater impact on students who were unsupervised drinkers at baseline than on students who were supervised drinkers at baseline.[20] The authors concluded that a classroom-based harm reduction intervention could provide knowledge and skills that had not been acquired previously through youths' informal networks.

The Smoking Cessation for Youth Project[24] also conducted in Perth, Western Australia, was a universal school-based harm minimization intervention that aimed to "help 14- and 15-year olds (grade 9 students) who smoked occasionally or regularly to quit or to reduce their smoking while confirming the advantages of being smoke-free to those who did not smoke." The intervention comprised curriculum, parent support, nurse counselling cessation support as well as policy components. A total of 14 schools were assigned randomly to the intervention, with the control group comprising 16 schools receiving "treatment as usual" abstinence program. Twenty months after baseline, the intervention group was significantly less likely to smoke regularly or to have smoked in the previous 30 days. A related study examined the impact of school policy on smoking.[25] Smoking rates were found to be lower at schools that provided discipline and education or counselling than in schools that used discipline-only approaches.

The Integrated School- and Community-based Demonstration Intervention Addressing Drug Use Among Adolescents (SCIDUA) was a study on alcohol- and cannabis-harm reduction conducted in Nova Scotia, Canada.[7] In contrast to the two curriculum-based projects described earlier, SCIDUA was a demonstration project based on a whole-of-school approach. A co-operative participatory research approach was employed to allow stakeholders, including students, parents, teachers, and school and school board administrators, opportunities to discuss harm reduction. Harm minimization was found to be an acceptable approach to drug education targeting the senior high school population. A significant decrease was demonstrated in the prevalence of specific alcohol and cannabis risks and negative consequences among senior students in the intervention schools compared with their counterparts in the rest of the province. In junior high school, harm minimization was found to not be an acceptable approach to drug education for three main reasons: the low prevalence of substance use among younger students, the wide variability in the development and maturity level of students in those grades, and the tendency of younger students to misconstrue harm minimization as condoning substance use. The participatory nature of the project allowed for an in-depth understanding of how and why harm minimization drug education may or may not be acceptable to real communities, schools and multiple stakeholders.

In summary, only three school-based harm reduction projects with rigorous methodologies have been reported in the peer-reviewed literature. From the perspective of Western Australia, the two studies conducted in their school system may be considered to provide sufficient evidence in support of harm reduction as an overarching approach to school-based drug education and policy for their students as young as in grade 8. With regards to Canada, only one reported intervention study demonstrated a positive impact among senior high school students, but not among junior high school students. The marked difference in the baseline prevalence of a key indicator among participants in the Australian experiment versus students in Nova Scotia (12% versus 3% of students 13 years of age used alcohol on a weekly basis, respectively)[7;21] suggests that the results of the former experiment may not be readily generalizable to Canada. Furthermore, the finding in Nova Scotia that "one size does not fit all" relative to the acceptability of harm minimization targeting junior and senior high school reinforces the need for a thorough appreciation of the context in which harm reduction is to operate.[7]

College and university students

College students are at high risk of heavy drinking and alcohol-related harm, and other drug use, particularly cannabis. Based on the 2004 Canadian Campus Survey, which surveyed full-time university undergraduates (average age 22 years), 16% of students reported frequent heavy drinking and 32% met the definition of hazardous drinking.[26] Common problems experienced by under-graduate students due to their own drinking were having a hangover, regretting one's actions, missing a class due to a hangover, and having unsafe sexual relations. About 32% of students reported having used cannabis during the year; 6% reported daily cannabis use. In general, students living in university residence and students living off campus on their own were found to be more likely than students living at home to engage in high-risk patterns of substance use.

Table 3: Prevalence of key substance use indicators among undergraduate students in Canadian universities, based on the Canadian Campus Survey 2004

	Overall	Males	Females
	%	%	%
Alcohol			
Any use in the past year	86	84	87
Heavy frequent drinking in the past year[1]	16	21	13
Heavy infrequent drinking in the past year[2]	12	12	12
Hazardous drinking[3]	32	38	28
Cannabis			
Any use in the past year	32	35	30
Use less than once/month in the past year	54		
Use 1-3 times/month in the past year	21		
Use 1-5 times/week in the past year	19		
Daily use in the past year	6		
Tobacco			
Current cigarette smoking[4]	13	12	13
Other illicit drugs			
Past-year use of any illicit drug excluding cannabis	9	10	8

Source: Adlaf, Demers & Gliksman, 2005.

1. Heavy frequent drinking is defined as the usual consumption of 5 or more drinks on days alcohol is consumed, and weekly drinking.
2. Heavy infrequent drinking as the usual consumption of 5 or more drinks on days alcohol is consumed, and less than weekly drinking.
3. A score of 8+ in the Alcohol Use Disorders Identification Test (AUDIT) is considered to be indicative of hazardous drinking.
4. Current smoking is defined as having smoked more than 100 cigarettes in one's lifetime and having smoked in the past 30 days.

One approach to college students' heavy alcohol use has been to focus on the college environment by enforcing drinking age laws; limiting access to low-cost, high-volume drink specials; and instituting responsible beverage service training. A four-year study involving 10 intervention colleges and 32 control colleges in the United States failed to reveal greater reductions in student drinking and harms in the colleges with a stringent environmental prevention emphasis.[27] In fact, the Canadian Campus Survey found that students at greatest risk (i.e., those who reported heavy, frequent drinking) were the least likely to support policies on campus security and enforcement, alcohol control and substance use education and prevention.[26]

While several complex harm reduction interventions have been demonstrated to be efficacious in indicated sub-groups of college students[28;29], the most promising type of college intervention to address high-risk alcohol use (and ultimately reduce harm) appears to be a brief intervention with motivational interviewing. Motivational interviewing is an approach that "seeks to promote reflection on drug use and its personal consequences in the context of the values and goals of the individual."[30] Motivational interviewing is considered especially suitable for college youth as it is non-confrontational and does not impose specific outcomes. It calls into play the model of behaviour change.[18] Various forms of these brief interventions have been delivered to college youth in person or by mail and have been shown, under ideal experimental conditions, to be efficacious in reducing high-risk drinking patterns and/or consequences for prolonged periods after the intervention.[31] One study of high-risk college drinkers demonstrated persistent benefits of a single session of individualized motivational interviewing four years after the intervention.[32] Based on the criteria of the *Guide to Community Preventive Services – Methods,*[12] there is now a strong body of evidence supporting brief interventions for college student populations.

What is new is that brief interventions for the college population are now being designed in a manner that potentially will allow large numbers of students to benefit. Web-based applications of brief interventions are a natural progression from the more traditional delivery provided in person or by mail. A randomized controlled trial conducted in a New Zealand campus primary care setting comprised a 15-minute Web-based screening and personalized feedback on drinking compared with a leaflet-only control group.[33] At six weeks, the intervention group had 20% to 30% reductions in alcohol consumption and problems compared with the control group, and the lower rate of academic problems in the intervention group persisted at six months. While based on a small sample, the study demonstrates the potential of Web-based applications to deliver, in a cost-effective and timely manner, "personalized" feedback tailored to the needs of the individual student based on detailed information provided by the individual student in an atmosphere of complete confidentiality and anonymity.

Brief motivational interviewing has also been applied to the problem of heavy cannabis use by college students. The efficacy of a single session of motivational interviewing was examined in a randomized controlled trial of 200 students attending college in London, UK.[30] The participants, who ranged from 16 to 20 years of age, had to have engaged in weekly cannabis use or stimulant drug use within the previous three months. Participants who received the intervention were found to have reductions in the use of cigarettes, alcohol and cannabis, primarily through moderation of continued use rather than cessation. However, a follow-up study of motivational interviewing provided by youth workers in routine conditions demonstrated benefit in relation to students' alcohol and cigarette use, but not cannabis use.[34] The lesser results of the effectiveness study raise issues about how assessment and interviewing might be practised in routine settings.

In summary, at this time, brief motivational interventions appear to be an efficacious harm reduction intervention targeting college students' high-risk substance use. Evaluations are needed to establish the effectiveness of the approach under routine conditions through various delivery mechanisms including Web-based, in person or by mail.

Out-of-the-mainstream youth

While representing only a small proportion of all youth, out-of-the-mainstream youth are at risk of many of the most serious of harms associated with substance use. Out-of-the-mainstream youth include overlapping groups such as street-involved youth, youth who are homeless or who are largely absent from home, youth involved in the sex trade, youth in the care of community services or known to the justice system, and youth who are frequently truant from school.[35] Their substance use patterns are very different from those of mainstream youth still in school. Out-of-the-mainstream youth are at high risk of a substance use trajectory that may include extensive alcohol and cannabis use, the use of cocaine and opiates, and injection drug use.[36-38] Among the harms experienced by these youth are blood-borne and sexually transmitted infectious diseases, participation in the sex trade, pregnancy, victimization, physical abuse and assault, participation in criminal activity, drug overdose, and death caused mainly by overdose and suicide.[39-41]

The problems of out-of-the-mainstream youth are often far more extensive than substance use and the risks and harms associated with use. The situations of these young persons can be complicated by problems of mental and general health; poverty; lack of housing, employment or education; and legal problems. From the perspectives of the health, community services and justice systems, a key focus of interventions aimed at re-integrating out-of-the-mainstream youth is to provide opportunities for them to make a connection with a supportive individual or agency. The extent to which a young person is motivated to change his/her lifestyle has been recognized as being a key determinant of re-integration, calling into play the stages of change model.[18]

Many programs that provide services to out-of-the-mainstream youth appear to have adopted a harm reduction philosophy in relation to their substance use. Meticulous process evaluations such as those provided by Poland, Tupker and Breland (2002)[42] and Weiker, Edgington and Kipke (1999)[43] can be invaluable for the successful development or adaptation of programs elsewhere. Few projects, however, have reported on the impact of the interventions. Three peer-reviewed reports on the effectiveness of such programs met the inclusion criteria for the present review, including evaluations of two needle exchange programs and one evaluation of a brief substance use intervention. As expected, the needle exchange projects in California[44] and in Russia[45] were both demonstrated to be effective in reducing behaviours such as multiple sharing partners and reusing syringes. The Street Teen Alcohol Risk Reduction Study (STARRS) designed and tested a brief feedback and motivational intervention for substance use that was designed to assist homeless adolescents 13 to 19 years of age reduce their level of alcohol and drug use.[46] A first trial provided many valuable lessons that led to modifications in the approach. The results of a pilot study of STARRS II are described as encouraging, and a randomized clinical trial is underway.

In summary, whether under-age or of legal age, out-of-the-mainstream youth are emancipated from their families and are resistant to interventions that challenge their autonomy. Needle exchange programs offer an important opportunity for outreach to these youth, including providing information about access to treatment. The use of brief motivational intervention tailored to their lifestyle also appears promising. Clearly, a harm reduction approach is essential to addressing the needs of these youth.

Conclusion

Large proportions of Canadian youth use alcohol, cannabis and cigarettes and are at risk of, or have actually experienced, harmful consequences associated with their use. Regarding youth in college and out-of-the mainstream youth, these groups are predominately of legal age or can be considered to be emancipated. Their patterns of substance use place them at high risk of serious harm. The evidence shows that various harm reduction strategies, such as brief interventions, can be effective in assisting them to reduce their high-risk patterns of use. Clearly, harm reduction is warranted as a strategy and goal of interventions targeting college students and out-of-the-mainstream youth. One of the major goals of research on harm reduction pertaining to these groups of youth should be on how to best tailor and deliver programs to effectively meet their needs.

The situation, however, is not as clear as it pertains to under-aged youth still in school. By senior high school, large proportions of adolescents use alcohol and/or cannabis, engage in high-risk patterns of use and experience some substance-related harm. In contrast, relatively few younger adolescents engage in substance use and high-risk patterns of use. At present, there is little evidence about the benefits and risks of harm reduction policies and programs to either the younger or older adolescent populations as a whole. Importantly, the current state of the evidence does not address the constraints of school administrators who, in fact, have a duty of care to under-aged youth through formal policy and the law. At issue are fundamentally illegal behaviours involving under-aged youth and a controversial approach that is counter to existing laws and policies. Those circumstances demand the highest standard of evidence. Furthermore, the younger the target population and the greater the number of years to emancipation, the higher should be the standard of evidence as to policies and programs that are not explicitly abstinence-based.

The large number of under-aged youth potentially affected by a shift in school drug policy and programming — from having an explicit goal of abstinence to having one of harm reduction — makes this the single most important policy decision as regards harm reduction targeting youth. The present review highlights a gap in evidence needed to support such a shift. There is an urgent need to conduct studies in Canada about the outcomes, effectiveness and safety of various models of school-based harm reduction drug education addressing alcohol, tobacco and cannabis use, and targeting students in elementary, junior and senior high school. Evidence is especially needed as to the age/grade at which school-based drug education can appropriately graduate from a message of "don't use" to one of "if you choose to use, then remember this."

Endnotes

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