Sexual Health Education: a literature review on its effectiveness at reducing unintended pregnancy and STD infection among adolescents

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Introduction

Over half of Canadian teenagers are engaging in sexual activity. In a survey of Canadian youth, 26% of Grade 9 students, 45% of Grade students, and 69% of college/university students reported having engaged in sexual intercourse at least once (King, Coles & King, 1991 as cited in Woloshyn & Rye, I 995). The results from a recent Ontario study on adolescent sexual behaviour also found that the rate of sexual intercourse increased for both genders as age increased (Thomas et al., 1998). The study subsequently found that the largest annual increase of first sexual intercourse, for both genders, occurs between the ages of 13 and 14.

In Canada, over 45 000 young women aged 15-19 years become pregnant each year (Walker & Miller as cited in SIECCAN, 1998). Statistics also show that the population at highest risk for developing sexually transmitted diseases are heterosexual adolescents and young adults, 14-22 years old (Macdonald, C.J. as cited in Genuis, 1993). Particularly, health officials are concerned about the high Chlamydia rate among 15-19 year olds. If left untreated this STD can lead to Pelvic Inflammatory Disease and infertility (Patrick, 1997 as cited in SIECCAN, 1998). Also of great concern in Canada is the significant drop in median age of HIV infection. The most recent Statistics Canada report shows that the Yukon has one of the highest rates of teen pregnancy. The pregnancy rate per 100 000 women aged 15-19 in the Yukon was over double that of Ontario (Wadhera & Miller, 1994). A 1995 Health Canada report showed the rate of Chlamydia per 100 000 people to be five times higher in the Yukon than in Ontario (Patrick, 1997).

The problems associated with teen sexuality are nothing new. In 1987, the Federal / Provincial/
Territorial Working Group on Adolescent Reproductive Health was formed to address the serious issues around adolescent sexual health. Some very specific recommendations were developed with respect to sexual health education. The most relevant recommendations cited in the report (Health Canada, 1987) are as follows:

- That provincial and territorial health departments advocate more vigorously (to departments of education) mandatory sexual health education in school curricula.
- That it be ensured that educators recognize that there is a specific, unique body of knowledge pertaining to adolescent reproductive health. This should be appropriate to specific target groups and incorporated in: the training and education of health service personnel, the education of teachers and parents, educational materials which are made available to families, teenagers raising children, adolescents and their peers and service personnel (p.5-6).

At the present time Canada does not have mandatory sexual health education in all provinces and territories. The quality and scope of sex education varies greatly among Canadian schools with the extent of instruction and implementation left to the discretion

of the school board or individual school administration. The time allotted for "health education" covers many topics including nutrition, hygiene and sex education. Traditional subjects are often given precedence over health education and it is common for teachers to disregard sex education completely because of their own lack of comfort with the material.

Recent survey research reported by The Sex Information and Education Council of Canada (SIECCAN) consistently shows that Canadian parents and students want schools to provide sexual health education programs. Over 85% of Canadian parents surveyed agreed with the statement, "Sexual health education should be provided in the schools" (SIECCAN, 1998). The classroom is an ideal setting for sexuality education, as it is a gathering place for the majority of adolescents, more than any other sector of the community (Fisher & Barak, 1989 as cited in Woloshyn and Rye, 1995). Mckay and Holoway (1997) found that 89% of the adolescents surveyed felt that it was important for them to receive sexual health education. From six possible sources, the adolescents rated the school as their most preferred source of sexual health information. Adolescents rated twelve topic areas as the most important areas to be addressed. They were as follows: preventing sexually transmitted diseases, sexual assault/rape, how to get testing and treatment for STDs, methods of birth control, conception/pregnancy/birth, building good/equal relationships, making good decisions about sexuality and relationships, saying no to sex, parenting skills, talking with girlfriends/ boyfriends about sexual issues, peer pressure, and puberty. The findings of this study have been recently replicated (SIECCAN, 1998). SIECCAN strongly supports the provision and implementation of high quality, broadly based sexual health education in the prevention of sexually transmitted diseases and unwanted pregnancies among young people.

Research shows that well designed programs, which provide information, motivation, and behavioural skills, are effective in delaying adolescents' first intercourse and increasing the proper use of contraceptives/condoms by those who choose to be sexually active (Brown & Eisenberg, 1995; Frost & Darroch Forrest, 1995; Kirby et at., 1994 as cited in SIECCAN, 1998). Opponents of sex education claim that providing young people with broadly-based sex education will result in the earlier onset of intercourse (Mckay, 1993). A number of studies have investigated this issue and there has been no association found between exposure to formal sex education and the earlier onset of sexual intercourse (McKay, 1993). Kirby et al. (1994) concluded, from their extensive review of sex education programs, that including discussions of contraception in combination with other topics do not hasten the onset of intercourse. Empirically-based evidence will be presented to support the implementation of sex education programs, more specifically what programs have shown to be effective in changing the sexual health behaviour of teenagers. Sexual health behaviour refers to sexual intercourse and the use of contraception, particularly condom usage to prevent pregnancy and HIV/STDs. General conclusions will be presented as well as recommendations with respect to policy formation and development and implementation of sexual health programs for adolescents.

Effective Sexuality Education Programs-Research Based Evidence

In 1993, the World Health Organization commissioned a far-reaching review of published studies examining the reported effects of sex education on young people's

sexual behaviour. Grunsiet & Aggleton (1998) concluded from their review of forty-seven studies that the programs that are most effective in reducing adolescents' high risk sexual behaviour are those that focus on delaying sexual intercourse as well as provide skills and information related to contraception and condom use for pregnancy and STD prevention. Kirby et al. (1994), in their review of effective sexual health education programs, remark that:

these programs are neither value-free nor moralistic. They do not simply lay out the facts and the students decide for themselves what is best, nor do they preach that sexual intercourse before marriage is always wrong. Instead, they emphasize that it is a good idea for young teenagers to delay sex and that it is important for young people to practice effective contraception if they are going to have sex (p. 254).

Researchers in the area of sexuality education recommend the implementation of theory driven, broadly based, sexuality education programs. Canada has a very detailed, empirically based set of guidelines for sexual health education. The Canadian Guidelines for Sexual Health Education is described by head research coordinator for SIECCAN, Alexander McKay, as a comprehensive framework for development of effective sexual education programs. A comprehensive approach to effective sexual health education emphasizes the shared responsibility of the community including parents, peers, places of worship, schools, health care systems, governments and the media (Health Canada, 1994). The Sexual Health Education Guidelines were developed on the recommendations of the Expert Interdisciplinary Advisory Committee on Sexually Transmitted Diseases in Children and Youth and the Federal/Provincial/Territorial Working Group on Reproductive Health. The Guidelines were formulated around an "educational philosophy that is inclusive, respects diversity, and reflects the fundamental precepts of education in a democratic society" (SIECCAN, 1998, p.3). The Guidelines (Health Canada, 1994) state that effective sexual health education:

· enhances sexual health within the context of an individual's values, moral beliefs, religious or ethno-cultural background, sexual orientation or other such characteristic;
· emphasizes the self-worth and dignity of the individual;
· instills sensitivity to and awareness of the impact of one's own behaviour on others, stressing that sexual health is an interactive process that requires respect for the self and others;
· provides accurate information that counters misunderstanding and reduces discrimination based upon race, gender, sexual orientation, religion, ethno-cultural background or disability;
· is structured so that attitudinal and behavioural changes arise out of informed individual choice and are not imposed by an external authority .

According to the Guidelines, sexual health education involves a combination of educational experiences that will enable learners to:
· acquire knowledge that is pertinent to specific health issues;
· develop the motivation and personal insight that is necessary to act on this knowledge;
· acquire the skills they may need to maintain and enhance sexual health and avoid sexual problems;
· help create an environment that is conducive to sexual health.

Research consistently indicates that positive sexual health outcomes are most likely to occur when the above mentioned components are integrated into a sexual health program (Health Canada, 1994). In addition to supplying factual information, effective sexual health education programs provide people with educational experiences which will equip them to engage in specific behaviours to avoid sexual problems and to enhance their sexual health (Health Canada, 1994). An effective sexual health program also takes into consideration the specific needs and goals of the target population and the community. *A* review of the literature reveals that there are many sexual health programs that are available. Unfortunately, the effect of these programs, in terms of significant changes in sexual behaviour, has not been empirically documented. The studies and interventions presented are the most salient of the research that is available at this time.

Traditional Sex Education

Traditional sex education programs lend to focus solely on student acquisition of knowledge about reproduction and birth control. These programs do not involve any skill development related to that knowledge. There is an assumption that adolescents will translate the knowledge into avoidance of unprotected sex (McKav, 1993).

There are some positive findings that come from a number of studies using large random samples of teenagers, indicating that exposure to some form of sex education does have a positive impact on adolescent sexual behaviour. Dawson (1986) analyzed the 1982 U.S. National Survey of Family Growth and found that female adolescents who received contraceptive education were more likely to practice contraception at first intercourse than those who did not receive formal instruction. It was also found that the female adolescents who received formal sex education were not more likely to begin having intercourse than those who had not been exposed. The data did not reveal any significant relationship between exposure to sex education and the risk of premarital pregnancy among sexua1ly active teenagers. Marsigho and Mott (1986), using a nationally representative sample of 12 686 U.S. youth of both sexes aged 14-22, found that sexually active girls who had received sex education were significantly more likely to use an effective method of contraception than sexually active girls who never had a sex education course. Pope et al. (1985 as cited in Woloshyn & Rye, 1995) also found that women who participated in educational programs tended to use oral contraceptives more often than did non-participating students, who were more likely to use less effective birth control methods or no methods.

With respect to the Sexual Health Guidelines, providing sexual health knowledge is important in terms of raising awareness. There has been no compelling evidence, however, that programs based only on factual information significantly lowers adolescent pregnancy rates and decreases the reported cases of sexually transmitted diseases.

Broadly-Based, Theory-Driven Sexuality Education Programs

The following programs are based on some aspect of social learning, social inoculation and cognitive behavioural theories, where behaviour change is the result of the acquisition of knowledge and the practice of skills specifically related to that knowledge. Broadly-based programs address knowledge, skills as well as attitude and motivation,

specifically related to sexual health.

Safer-Sex: HIV Risk-Reduction Intervention

Jemmott, Sweet, and Fong (1998) examined HIV risk-reduction interventions for a group of high-risk African American adolescents. Their goal was to determine which behavioural intervention strategy is most appropriate and efficacious for reducing HIV risk-associated sexual behaviour. Three interventions were created for the study: an abstinence intervention which acknowledged that condoms can reduce risks but emphasized abstinence to eliminate the risk of pregnancy and STDs; a safer-sex intervention which focused on abstinence as the best choice but emphasized the importance of using condoms to reduce the risk of pregnancy and STDs, including HIV, if participants were to have sex; a health promotion intervention which focused on behaviours associated with risk of cardiovascular disease, stroke, and other health problems associated with African Americans. Each intervention consisted of eight, one-hour modules. All three programs included group discussions, experiential exercises and skill-building activities. The safer-sex program, in particular, was designed to:

- increase HIV/STD knowledge and the specific belief that using condoms could prevent pregnancy, STDs, and HIV;
- enhance hedonistic beliefs to allay participants' fears regarding adverse effects of condoms, on sexual enjoyment;
- increase skills and self-efficacy regarding their ability to use condoms, including confidence that they could negotiate condom use with sexual partners (p.1531).

The participants were 659 African American adolescents recruited from sixth and seventh grade classes from three different middle schools in Philadelphia. The significant findings from the study are as follows:

- Adolescents in the safer-sex intervention were more likely to report consistent condom use at the 3-month follow-up than were those in the control group or the abstinence group. This effect was sustained 6 and 12 months after intervention.
- Self-reported frequency of condom use was also significantly higher in the safer sex group than in the control group. Adolescents in the safer sex group reported fewer days on which they had unprotected sex than those in the control group reported.

- Among sexually experienced adolescents, those who received the safer-sex intervention reported less unprotected sex than did those in the control group or the abstinence group. This effect was still sustained at 6 and 12-month follow-up: at six-month follow-up, the abstinence intervention did not reduce self-reported sexual
behaviour compared with other interventions.

The researchers conclude from this study that the use of intensive theory-based, culture-sensitive interventions designed to influence mediators of risk behaviour, including HIV knowledge, behavioural beliefs, self-efficacy, and skills, can decrease sexual behaviour and increase condom use.

Our finding that the safer-sex intervention cured unprotected sexual intercourse, whereas the abstinence intervention did not, suggests that if the goal is reduction of unprotected

sexual intercourse, the safer sex strategy may hold the most promise, particularly with those adolescents who are already sexually experienced. Moreover, safer-sex interventions may have longer-lasting effects than abstinence interventions.

With respect to the Canadian Guidelines this safer-sex program addresses the components of knowledge, motivation (positive attitude toward preventative behaviour) and skill development.

Reducing the Risk: Building Skills to Prevent Pregnancy, STDs and HIV

The Reducing the Risk program is based upon several interrelated theories: social learning theory, social inoculation theory and cognitive-behavioral theory. The educational basis for the program asserts that learning follows from action. The students are required to actively participate in role-play situations that simulate those that they are likely to confront outside the classroom (Barth, 1993). Kirby (as cited in Barth 1993) explains that:

the curriculum is designed to enhance skills to resist unprotected sex by modeling those skills and then providing opportunities for practice. It emphasizes explicit norms against unprotected sex by continually reinforcing the message that youth should avoid unprotected intercourse, that the best way to do this is to abstain from sex, and that if youth do not abstain from sex, they should use contraceptives to guard against pregnancy and against sexually transmitted disease (STD) especially the human immunodeficiency virus (HIV).

The curriculum is divided into 16 one-hour lessons. The teachers who implement the program must attend a 3-day training session focusing primarily on role-playing and other class activities.

Kirby et al. (1991) conducted a quasi-experimental, rigorous evaluation of the Reducing the Risk curriculum. Important methodological components were employed including a large sample size, good comparison groups, and long-term follow-up. The program was implemented at 13 California high schools; 758 students were assigned to treatment and control groups. The students were surveyed before their exposure to the curriculum, immediately afterwards, six months later, and 18 months later. The treatment group received the curriculum while the control group received a more traditional sex education course of the same length. Kirby (as cited in Barth, 1993) presents the following significant findings from the 1991 study:

- Among all youth the curriculum significantly increased knowledge and the students retained this greater knowledge for at least 18 months. Though the curriculum did not seem to diminish the perceived proportions of students their age who had never had sex, it did apparently prevent those perceptions from becoming worse over time.
- The curriculum increased parent/child communication about abstinence and contraception.
- Among students who had not initiated intercourse prior to the pretest the curriculum significantly reduced the onset of intercourse at 18 months-the proportional reduction was 24 percent.

- Among those relatively few students who did initiate intercourse after the curriculum was implemented, larger percentages of the program group than of the comparison group used contraceptives. This effect was still significant at the 18-month follow-up.
- An analysis of measures of unprotected intercourse (derived from both abstinence and use of contraceptives) revealed that the curriculum significantly reduced unprotected intercourse among all students who had not initiated intercourse prior at pretest. The estimated proportion reduction was approximately 40 percent.

These effects extended across a variety of subgroups including different ethnic groups, both sexes, and lower-risk youth. The curriculum was particularly effective for lower-risk and female students.

The combination of findings indicated that the curriculum delayed the onset of intercourse, but did not significantly affect the frequency of sexual intercourse or the use of birth control among those students who had initiated intercourse prior to program participation. This suggests that whenever possible the curriculum should be implemented in schools before most youth initiate intercourse. It appears that it may actually be easier to delay the onset of intercourse than to increase contraceptive practice (Kirby et al, 1994).

The data from this study suggest that the theoretical approach and the design of activities as found in the Reducing the Risk program is more effective at producing the desired behavioural changes than are more traditional approaches (Kirby as cited in Barth 1993). The knowledge, motivation and skills components of the Canadian Sexual Health Guidelines are incorporated into this program. The researchers caution, however, that the Reducing the Risk curriculum is not a total solution to the problems of unprotected intercourse; many youths in the treatment
group failed to abstain or to use contraceptives (Kirby et al., 1994). More comprehensive programs that involve the school, parents and the community are required. The Reducing the Risk curriculum could be an effective component of a more comprehensive program (Kirby as cited in B&ih, 1993).

Skills for Healthy Relationships

The largest study ever undertaken in Canada on the long-range outcome of a school-based sexuality program was developed by the Social Program Education Group at Queen's University, Kingston Ontario (Francoeur, 1997). The program, Skills for Healthy Relationships, was developed by the Social Program Education Group in response to the need for AIDS and other STD prevention programs and the need to educate adolescents about AIDS and other STDs. The impetus for the development of the program came from the findings of the Canada Youth and AIDS Study (King, et al., 1988) which revealed that, although adolescents are relatively knowledgeable about AIDS and other STDs, they still take many risks that result in their contracting and transmitting HIV and other STDs (Social Program Evaluation Group, 1994). The main objectives of the program are that students will:

- gain AIDS and STD-related knowledge;
- act as positive role models for risk reduction behaviours in promoting health-enhancing peer group norms;

- develop positive attitudes toward STD prevention and AIDS-related issues;
- develop the skills (interpersonal, cognitive, self-management and practical) necessary to maintain an HIV/AIDS/STD-free lifestyle and to apply those skills in real-life situations where appropriate;
- develop the motivational supports for risk reduction (e.g., self-efficacy, positive relationships, support from parents and peers);
- develop compassion and support for people with HIV and AIDS;
- develop an understanding and non-discriminatory attitudes towards people of different sexual orientations (p.5).

This curriculum designed for grade nine students (age 13-14) was developed using the Guidelines for Sexuality Education in Canada and thus encompasses all components: knowledge, attitude and skill development. An additional component was added, motivational support, which focuses on self-efficacy, parents and peers. The 15 hour program features cooperative learning (small groups), parent(guardian involvement (six interactive activities), active learning (role playing, behavioural rehearsal), peer leaders (in small groups, modeling skills), video instruction, journalling and development of a personal action plan (assertiveness goal) (Francoeur, 1997). The skill component is a major feature of the program.

The evaluation study involved 2000 grade nine students in four provinces. The students were divided into treatment group and comparison group. The comparison group received their school's regular grade nine AIDS/STD program. Outcome measures were obtained just after the students' completion of the program, one year late and two years later. Wanen and King (1994 as cited in Francoeur, 1997) report that two years later, students who took the program stated that the program affected them in a number of ways. These include: more comfort talking about personal rights with a partner (72 percent), talking about condoms (67 percent), ability to refuse or negotiate something they don't want to do (58 percent), more assertive (53 percent), and always use condoms with a partner (61 percent). Compared to the comparison group, participants at the two year follow-up:

- were more likely to have gained compassion toward people with MDS;
- had more positive attitudes toward homosexuality;
- showed greater knowledge of HIV/AIDS;
- were more likely to express the intent to communicate with partners about condom use;
- were no more likely to have the intent to use condoms (this was initially high in both groups);
- were no more likely to report "always" using a condom (about 41 percent of both treatment and comparison groups said they always did so;
- about half reported using a condom the last time they had intercourse); and
- females were more likely to declare that they would respond assertively if they were pressured unwillingly to have sex (p.243).

It was not surprising that, in the period from grade nine to grade eleven, the proportion of students who had experienced intercourse increased for both sexes in both the treatment and comparison groups (Francoeur, 1997). The percentage of both sexes who said they had ever had intercourse was slightly lower in the treatment group. For males in the treatment group, 42 percent versus 51 percent in the comparison group. For females, 46 percent in the treatment group versus 49 percent in the comparison group. In both the

treatment group and the comparison group, the most likely to have unprotected sex where those who took risks in the areas of alcohol consumption, use of marijuana, and skipping school (Warren & King, 1994 as cited in Francoeur, 1997). This observation highlights the influence that social and relationship factors have on behaviour which in turn are difficult to change through school-based interventions alone. The researchers emphasize the importance of having a program that fits the specific needs of the population, particularly when considering high-risk youth.

Multi-Dimensional Programs

Multi-dimensional programs are broadly-based and theory driven. The added dimension is that they incorporate resources and services within the community as part of the program.

Vincent, Clearie and Schluchter (1987 as cited in Christopher, 1995) report on a comprehensive program that was implemented in a rural, low income, undereducated community. The community had a high percentage of African-Americans in comparison to other racial groups. The goals of the program were to convince adolescents to postpone sexual activity as a positive and preferred choice and promote the usage of effective contraception among those youth who were sexually active. The intervention took place on a community and school level. Advisory groups were established which to help connect agencies within the community. Education and training courses were offered to all members of the community including parents. Teachers were given the opportunity to attend graduate level courses free of charge.

A comprehensive program was implemented, from kindergarten through grade twelve. The initial evaluation on the program consisted of comparing pregnancy rates for two years prior to the intervention with rates 3 years post-intervention. The target community was compared with three other similar rural communities where the intervention program had not been implemented. Estimated pregnancy rates in the target community dropped significantly in the first year of the program (60.6% to 37.3%). Comparison communities experienced significant increases during the same period of time. A second evaluation, using six matching comparison communities revealed similar dramatic results.

Christopher (1995) suggests that certain network and/or community processes, which had not been a part of the formal evaluation process, "may have a positive effect on getting teens to comply with abstinence and contraceptive messages (p.387)." The program effects (decrease in pregnancy rate) did disappear, however, after five years. The evaluators noted that a program nurse who was dispensing contraceptives to participating youth was forced to leave due to negative publicity and subsequent state legislation. It was also noted that the teachers who had initially received graduate level training had left the school prior to the pregnancy rate increase.

Zabin et al. (1988 as cited in Christopher, 1995) also reported on the success of a multi-dimensional program, which resulted in significant reductions in pregnancy rates of their target population. This program implementation was conducted in an urban, lower class, predominately black community. The program was designed to emphasize abstinence but to also provide information about effective contraception to those who did choose to be sexually active. The participating adolescents were provided with an in-school program

consisting of classroom presentations, discussion groups, individual counselling, and an after-school clinic which provided free educational intervention, medical examinations, counselling and contraceptives. A three-year follow-up revealed that the adolescents that had participated in the program delayed first intercourse, started using effective contraception earlier in their sexual activity, and most significantly, reduced their pregnancy rate by 30% in comparison to the control group, which experienced a 57% increase.

Safer Choices: A Multi-dimensional School-Based HIV/STD and Pregnancy Prevention Program for Adolescents

The Safer Choices program focuses on reducing the number of students engaging in unprotected sexual intercourse. It does this by reducing the number of students who begin or have sexual intercourse during high school years, and by increasing condom use among those students who do have sex (Carol Kirby. Parcel, Basen-Enquist, Rugg & Weil, 1996).

Secondary purposes of the program include reducing the number of students who have multiple sex partners or use injectable drugs, and increasing the number of students who seek HIV/STD counselling, testing and consultation.

Safer Choices uses a multi-dimensional approach that addresses change at the student, school and community level. The conceptual bases for the program include social cognitive theory, social influence theories and school/change improvement models. This school/change improvement model was a unique aspect of the Safer Choices program in that it addressed the influence of the school environment on student behaviour. A School Health Promotion Council, consisting of parents, teachers, administrators, other staff, students and member of local community agencies, was formed at each intervention school.

The Safer Choices curriculum consists of separate 10-lesson series for grades nine and ten students. The grade 10 program builds on and reinforces the grade nine lessons. The program is based on the program, Reducing the Risk, which was described earlier in this report. Consistent with social cognitive theory and social influence models, the lessons focus on attitudes and beliefs, social skills (particularly refusal and negotiation skills), functional knowledge, social and media influences, peer norms, and parent-child communication. A systematic approach to skill development is utilized. This includes clear explanations of skills to be learned, opportunity for skill practice and positive as well as corrective feedback. The skills are specific to sexually responsible behaviour i.e. refusal skills to avoid sexual intercourse or to not engage in unprotected intercourse.

Classroom teachers trained by project staff implement the curriculum. Teachers also receive on-site technical assistance and coaching. The curriculum also uses students as facilitators for selected activities. These students are given an additional three hours of training and are asked to model skills and assist with small group activities.

There is also a parent education component which is designed to help parents provide accurate information to their children, and to reinforce the norm that youth should avoid unprotected intercourse. There are a number of additional activities which focus on

adult/teen communication about sexuality, including Council-sponsored information nights.

A very important aspect to the Safer Choices program is the school-community linkage. The students learn about resources available in the community. Homework assignments encourage them to find out about community organizations and local youth services where they can go for more information.

Safer Choices was evaluated in 20 schools in California and Texas. In each location, the schools were randomly assigned to the intervention curriculum (Safer Choices) or the comparison condition (a standard knowledge-based curriculum). Nearly 4000 grade nine students were evaluated for 30 months. Periodic interviews were conducted. Results showed that students attending schools where Safer Choices had been implemented were more likely to avoid behaviour that would put them at risk than students attending schools where the standard knowledge-based curriculum had been implemented (SHOP Talk, 1998). In addition, sexually active students reported:

- fewer acts of unprotected intercourse;
- increased usage of HIV and pregnancy prevention methods;
- significant gains in HIV knowledge, parent communication, and attitudes;
- self-efficacy related to protecting themselves against HIV/STD infection.

The Safer Choices curriculum seems to encompass all aspects of the Canadian Sexual Health Education Guidelines and can be considered a truly comprehensive program. This program was presented at the June, 1998, World AIDS Conference in Geneva, Switzerland.

School and Community-Based Clinics

Clinic-based programs provide health services, which could include dispensing of contraceptives, sexual health information, medical exams and/or counselling.

Kirby et al. (1991) evaluated the impact of six school-based clinics located on six high school campuses in different parts of the United States. The clinics provided a wide range of health care services appropriate for adolescents. Two of the clinics referred for contraceptives, one clinic wrote prescriptions that could be filled at a nearby Planned Parenthood clinic and three clinics dispensed contraceptives in the school clinics. The education programs that each clinic provided varied from site to site. The results of the study were mixed. At one clinic, which targeted high-risk youths, pregnancy prevention was emphasized and oral contraceptives were dispensed. There was a significantly greater use of oral contraceptives among females at the clinic site than among females in the comparison school. There was no difference, however, in condom use. At two other sites which dispensed both condoms and oral contraceptives but did not have a strong educational component, no significant differences were found between the clinic and comparison schools in use of condoms by male students or use of oral contraception by female students . At the site that prescribed contraceptives and had a strong educational component, male students reported higher rates of condom use and female students reported higher rates of contraceptive use than did their counterparts at the comparison school. It must be noted that these results applied to students who had been sexually active prior to the set-up of the clinics. Though the results of Kirby's study appeared

promising for school-based clinics, a examination using 5 years of pre-clinic data and 6 years of post-clinic data revealed a weak link between school-based clinics and a decrease in live birth rates among teenagers (Christopher, 1995). Pregnancy rates (the sum of live births, therapeutic abortions and miscarriages/stillbirths) were not considered in this study.

Franklin, Grant et al. (1997) conducted a meta-analysis of the effectiveness of prevention programs for adolescent pregnancy. Their findings indicated that community-based programs i.e. health services provided off school grounds and which provided contraceptive knowledge and contraceptive distribution, were more effective with respect to pregnancy outcome measures than were other sex-education programs. Note that social-cognitive and learning-based approaches to sex education were not included in the analysis. The analysis also concluded that contraceptive programs seem to work best with older adolescents (aged 15-19) who were already sexually active. The researchers stress the importance of developing age-phased, developmentally based, sex education programs. More research is needed in this area.

Abstinence Only Programs

Abstinence programs typically focus on the importance of abstinence from sexual intercourse until marriage. They do not provide students with the opportunity to learn the necessary information and skills to reduce the risks of sexual activity if they do choose to have intercourse.

It has been suggested that abstinence-only sex education programs are the solution to teen pregnancy and STD infection. There are a number of studies that evaluate the effectiveness of abstinence programs. These programs tend not to discuss contraception or they briefly discuss failure of contraceptives to provide complete protection against pregnancy (Kirby et al., 1994). "Success Express" and "Project Taking Charge" are two such programs. Concerns have been raised about programs that rely exclusively on a premarital abstinence approach (Scott & Roosa, 1990). Though positive short-term outcomes have been reported, most of the effects involve changes in attitude and not in behaviours, and these effects were found to deteriorate over time (Olsen et al, 1984 as cited in Scott & Roosa, 1990). These programs are inherently insensitive in that they ignore students who have already experienced sexual intercourse or who were possibly victims of rape or incest (Scott & Roosa, 1990). The Sex and Information Council of the United States (SIECUS) report (1993) which examined 11 abstinence-only based curricula, found the following strategies common to all of the programs:

- Scare tactics are used as the major strategy for encouraging premarital abstinence from sexual behaviour;
- information about contraception methods is often omitted;
- if the availability of contraception is mentioned, failure rates are emphasized and often overstated; students are required to look exclusively at the negative consequences of sexual behaviour;
- opportunities are not provided for students to explore their own values about premarital sexual behaviour; medical misinformation about abortion, STDs, HIV/ AIDS and sexual response is prevalent;
- sexist bias is evident in descriptions of anatomy/physiology, sexual response, and sexual

behaviour;

- sexual orientation is not discussed or homosexuality is described as an unhealthy "choice";
- people with disabilities are entirely omitted or are illustrated as non-sexual;
- racist and classist comments exist within the texts and stereotypes about various communities are underscored;
- religious bias influences the curricula and only one viewpoint on sexual behaviour is discussed;
- a limited number of family structures are included and non-traditional families are depicted as troubled (p.2).

Kirby et al. (1994) report that there is inadequate evidence to determine the effectiveness of school-based abstinence programs on delaying intercourse or affecting other sexual or contraceptive behaviours. The U.S. Office of Population Affairs, Office of Adolescent Pregnancy Programs, has supported many research projects to evaluate abstinence programs (Jorgenson et al., 1993). The results have been far from encouraging (particularly those assessing changes in adolescent sexual behaviour). After more than a decade of evaluation, there is little evidence of their effectiveness in the scientific literature.

Recommendations

1. In the short term, it is important that sex education be provided to all adolescents attending school in the Yukon. It is not realistic to expect that a comprehensive sexual education program will be implemented in the near future. There should be support, however, to keep the existing programs up and running i.e. public health nurses and the Health Promotion Unit in the schools. Existing curricula such as Skills for Healthy Relationships, Reducing the Risk, and Safer Choices, should also be considered for use as guidelines to develop programs that will meet the needs of adolescents in the Yukon. It would also be advised that community awareness programs, targeting adolescents, continue to be developed and implemented.

2. Health professionals should consider the feasibility of a teen clinic which provides sexual health education and related health care.

3. From a proactive standpoint, creation of sexual health education policy specifically for the Yukon Territory is necessary. Students need to be provided with comprehensive, age-appropriate, sexual health education. The Yukon should initiate a process to develop such a policy, beginning with an assessment of the needs and wants of the community with respect to sexual health education. A commitment must be made to the full process, including policy development, curriculum creation, and curriculum implementation.

4. It is imperative that well-trained, informed individuals, implement and instruct sexual health education programs. Training programs should be provided for individuals wishing to instruct sexual health education programs.

5. At this point in time there have been no studies that have included the Canadian North. There should be some serious consideration into providing funds and conducting research in this unique region of Canada. The Yukon and the Northwest Territories have the

highest teen pregnancy rates and greatest rates of Chlamydia in Canada. These statistics deserve some attention.

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