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Offering Sexual Health Fairs to Supplement Existing Sex Education Programs: An Evaluation of Adolescent Students' Knowledge Needs

A health fair called Choices Not Chances has been designed by the public health nurses in a southern Ontario city to increase the knowledge of young high school students about sexual health and healthy relationships. Our purpose in designing this study in cooperation with the public health nurses was to assess the existing level of knowledge among grades 9 and 10 students to determine if the content presented through this fair was appropriate for these students. Forty-five grades 9-10 students completed one survey during class time in their sex-segregated physical education class. Our findings show that although students had basic knowledge about STDs, anatomy, and pregnancy prevention, their knowledge of healthy communication and behavior in relationships was much less developed, which may put students at risk of becoming involved in unsafe sex and abusive relationships. Overall, the health fair appears to provide a valuable supplement for sex education.

Dans le but d'accroître les connaissances qu'ont les élèves du secondaire au sujet de la santé en matière de sexualité et des relations interpersonnelles saines, des infirmières de la santé publique ont organisé, dans une ville du sud de l'Ontario, une foire sur la santé intitulée Choices Not Chances (Des choix plutôt que des risques). Nous avons entrepris cette étude avec la coopération de ces infirmières de la santé publique afin d'évaluer ce que savent les élèves en 9^{e} et en 10^{e} années pour ensuite déterminer si le contenu de la foire leur convenait. Quarante-cinq élèves en 9^{e} et en 10^{e} années ont complété un sondage pendant leur cours d'éducation physique (pendant lequel ils sont regroupés selon leur sexe). Les résultats indiquent que, quoique les étudiants aient des connaissances de base au sujet des MTS, de l'anatomie et de la prévention de la grossesse, ils en savent beaucoup moins sur la communi-

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cation et le comportement sains dans les relations interpersonnelles, ce qui pourrait indiquer qu'ils courrent le risque de se retrouver dans des relations abusives ou d'adopter des pratiques sexuelles risquées. De façon globale, la foire sur la santé semble constituer un supplément valable au cours d'éducation en matière de sexualité.

Introducing the Issues

Sexual health education for adolescents has taken on a recent urgency. A current Canadian study suggests that 44% of boys and 27% of girls have had sexual intercourse at least once before 15 years of age (Feldman et al., 1997). Adolescents are having intercourse and dealing with pregnancy at earlier ages (Wyatt, 1990). For example, in 1996-1997, there were 48 live births among 10- to 14-year-olds and 6,067 live births among 15- to 19-year-olds in Ontario alone (Statistics Canada, 1999). Given these statistics, the need to encourage responsible sexual behavior among adolescents is evident. One means of providing information and promoting responsible behavior is through the implementation of effective sexual health education programs. The responsibility for devising and delivering such programs has typically fallen on educators who provide sex education classes. More recently educators have engaged in collaborative efforts with researchers and health professionals to generate sex education programs specifically designed to address the needs, interests, and knowledge of adolescents. At present many of these programs have not been evaluated. The present study investigates the appropriateness of one such sexual health program for Canadian adolescents to assess what kinds of information Canadian students need in this area.

Although families, peer groups, and the media play a role in educating adolescents about sexuality (Dorius, Heaton, & Steffen, 1993; Kirby et al., 1994; Trost, 1990; Voydanoff & Donnelly, 1990), schools offer a unique opportunity to ensure that accurate, timely, and professionally supervised sexual health education programs reach most adolescents (Kvalem, Sundet, Rivo, Eilertsen, & Bakketeig, 1996). For many adolescents school programs provide their only source of credible information (Mellanby, Phelps, Crichton, & Tripp, 1996). The task of constructing relevant and effective sex education programs has proven a considerable challenge for educators. Because students attending sex education classes come with diverse backgrounds with respect to sexual health information (including both accurate and inaccurate information), and they vary in their actual and anticipated sexual behavior, it is easy to understand the complexities of constructing a relevant sex education program. In an attempt to address these problems considerable research has been dedicated toward understanding what adolescents already know, what they need to know, and what they want to know (Cairns, Collins, & Hiebert, 1994; Mellanby et al., 1996). Several consistent findings have emerged from this research. Together with established instructional theory these findings provide a good foundation for developing the content and instructional formats to provide effective sexual health education programs.

The content of sexual education programs has long been a concern for educators and parents because of the sensitive nature of the topic and the age of the students receiving instruction (Ehrhardt, 1996). As a result sexual education is often inappropriately and narrowly defined as a birth control issue (Scales, 1986), and many sexual health education programs have been geared

exclusively toward providing factual information about the reproductive system, contraceptive use, and the consequences of pregnancy (Gullotta, Adams, & Montemayor, 1993). When evaluated, typically by paper-and-pencil tests, these programs are found beneficial for increasing knowledge scores in these specific domains. The problem with these programs is that they have been shown to be inadequate for reducing the likelihood of negative outcomes such as STD infection, pregnancy, or for enhancing the positive outcomes of sexual expression (Ehrhardt, 1996; Gullotta et al., 1993). Although it is clearly important to increase knowledge, in order to effect behavioral change adolescents also need information that will help them to navigate the real-life situations where this information will be applied (Gullotta et al., 1993; Kirby et al., 1994). Therefore, students need exposure to a broad scope of information that incorporates basic reproductive and health issues as well as issues relating to the identification and development of healthy relationships.

Alternative perspectives have resulted in the development of programs that incorporate comprehensive factual information with life skills training (Kirby et al., 1994; Scales, 1986). These programs focus on health promotion and the development of decision-making skills. The health promotion model focuses on the influence of lifestyle on mental and physical well-being. In this context sexuality is incorporated into health promotion principles such as knowledge of how to treat your body well or knowledge of how to seek help (Scales, 1986). Issues such as how to obtain access to and successfully use contraceptive devices for the prevention of sexually transmitted diseases, HIV, and pregnancy; dating and communication skills such as how to say No are taught around the development of self-respect (DeGaston, Jensen, & Weed, 1995; Ehrhardt, 1996; Scales, 1986). In addition, broader issues are explored that relate to sexual outcomes such as education about gender roles, equality, violence, and the ethics of choices individuals make (Biglan, Noell, Ochs, Smolkowski, & Metzler, 1995; DeGaston, Weed, & Jensen, 1996; Lavoie, Vezina, Piche, & Boivin, 1995; McKay & Holowaty, 1997; Poitras & Lavoie, 1995, Scales, 1986).

The *Canadian Guidelines for Sexual Health Education* (Health Canada, 1997) supports a framework that incorporates these broad principles. According to this framework, effective sexual health education should adopt a lifespan acknowledging that individuals change over time. The guidelines specify an approach that emphasizes the self-worth and dignity of the individual and that highlights the positive, life-enhancing, and rewarding aspects of human sexuality. Such comprehensive programs not only have the potential to increase adolescents' knowledge regarding sexual issues (Hillman, Hovell, Williams, Hofstetter, & Burdyshaw, 1991), but they also promote life skills aimed at improving the ability to approach sexual relationships in a mature and informed manner. Programs that have adopted all or some of these principles have been successful in reducing high-risk behaviors related to HIV/AIDS and pregnancy among adolescents (Kirby et al., 1994). In addition, these programs offer information that adolescents themselves identify as critical to their own development (Cairns et al., 1994; Ostrov, Offer, Howard, Kaufman, & Meyer, 1985)

Some of these programs are prepackaged and involve extensive exposure intended to be presented over a series of weeks or longer (Eizen & Zellman,

1992; Eizen, Zellman, & Mc Allister, 1990; Kirby, Barth, Leland, & Fetro, 1991). These programs require considerable training and interaction with external agencies, which can make them less accessible for educators. More recently there has been interest in programs that involve less extensive dependence on external support while still promoting interest and the desired comprehensive framework. Several innovative presentation formats have been introduced with the goal most often to introduce a platform for future discussion as well as providing an initial presentation of relevant information. These programs are often developed in collaboration with sexual health educators from a variety of organizations such as public health units or community services. For example, the New Image Teen Theatre uses peer education and the stage to educate adolescents about sexual behavior (Hillman et al., 1991). After viewing a performance, teens reported significantly more willingness to discuss sexual issues with others, greater intention to use birth control, and demonstrated greater sexual knowledge. Another approach, using peer education, found that having older students teach younger peers increased their involvement and commitment to the behavioral options they presented (Kvalem et al., 1996). The key features of these programs are that they are interactive, removed from the traditional lecture type presentation, and promote student involvement. The rationale for these programs is that the more students feel involved the more they are able to translate their learning to their later behavior.

Another innovative format is to introduce sexual health issues using an interactive health-fair format. Health fairs are not a new idea per se, but one program called Choices Not Chances employs an interactive format and embraces the comprehensive framework considered ideal for sexual health education programs (developed by the Waterloo Public Health Unit). The Choices Not Chances fair presents six interactive game stations that provide information about health and sexuality. Students attend the fair during school time, in their school. The content of the stations includes traditional information about fertility, STDs, and birth control. In addition, students are exposed to information that helps them clarify their values and approaches regarding sexual and romantic relationships and communication with others. The stations run simultaneously, with each station facilitated by one public health nurse. Students rotate among the six stations in groups of eight to 10 members for a total of approximately three hours. Each station employs a game format (poker, Trivial Pursuit, etc.) with additional materials, resources, and pamphlets also available. Consistent with traditional research goals and findings in sex education (Woloshyn & Rye, 1995), the presentation of information is consistent with the full range of Bloom's taxonomy including the promotion of application and critical thinking level questions (Kirby et al., 1994). In addition, the adolescents are encouraged to initiate communication with professionals and with fellow students to learn about the areas of sexual health presented.

This program is particularly intriguing because it is designed to go beyond the basic anatomy-only presentation. It offers a forum for students to explore sexual issues ranging from anatomy to interpersonal relationships. It invites discussion about the risks associated with sexual behaviors and the positive expression of sex and romance. At present this health fair format has not been

assessed for the relevance of material it presents for a Canadian adolescent population. This is a critical consideration because many of the existing programs have been tested exclusively with populations in the United States. The present study examines the efficacy of the information in this health fair for the level of knowledge among Canadian students. Therefore, the study provides a baseline measurement of the areas where the most critical needs for education exist.

Method

Participants

Forty-five adolescents (24 boys, 21 girls), all attending the first week of their regular sex education class participated in this study. All students were enrolled in the grade 9-10 class and were between the ages of 15 and 18 (M=15.71, SD=.62 for boys, M=16.10, SD=.89 for girls). The high school was located in a mid-sized Canadian city with most of the participants representing white, middle-class backgrounds. Approximately one quarter of the participants identified themselves as being sexually active (21% of boys, 23.8% of girls). The sample represented all students who attended classes on the testing day. None of these students had participated in the health fair. Consent for participation was obtained from parent(s) and/or guardians and participants.

Materials and Procedure

All participants were asked to complete one survey that assessed the content of each of the six stations comprising the health fair. Male and female students were tested independently during the normal physical education component of class time. Students were guaranteed confidentiality; no names or other identifying features were included on the surveys.

Two forms of the survey were presented to counterbalance the presentation of the information. The two orders minimized possible effects from priming from the related material in this fair. Each survey contained seven subsections, one for demographic information, and one for each component of the health fair Choices Not Chances. Survey questions represented content directly corresponding to material presented through the health fair. Both orders of the survey requested demographic information first. One order presented the Signature Game, followed by Your Fertile Future, Sexual Trivial Pursuit, Perfect Partner Poker, Communication Connection, and Love Connection. The second order reversed the components of the survey. In each section a variety of question formats were used including multiple-choice, forced choice, and short answers. Formal evaluations of reliability and validity were not available for the questionnaire. The subsections were as follows.

Demographic information. Participants provided their age, sex, rated their comfort discussing sexual health issues, and described where they would receive help for sexual health issues and the extent of their sexual activity.

Signature Game (knowledge of STDs and safer sex behavior). Three multiple-choice questions assessed participants' knowledge of sexually transmitted diseases (STDs). Questions covered knowledge of the sexual behavior least likely to contract STDs, how to lower the risk of STDs, and reasons for a broken condom (see Appendix A for an example). Between four and eight alternatives were presented and participants circled all the correct answers. In addition,

participants provided a short written answer to a question assessing at what point it would be safe for a couple who had been together for a while to stop using condoms.

Your Fertile Future (knowledge of fertility and preparations for pregnancy). There were three questions in total. Participants responded *true* or *false* or *don't know* to seven statements following the stem, "a fertile male is someone who" and seven statements following the stem "a fertile female is someone who." Examples of statements include "is making sperm" or "produces eggs" (see Appendix A for an example). Participants also provided in short answers two things couples should think about before having a baby.[1]

Sexual Trivial Pursuit (knowledge and experience of contraception, symptoms of STDs, and sex hormones). There were nine questions in total. Participants rated the effectiveness of nine potential pregnancy prevention methods (real and mythical) on a five-point Likert scale with an additional *don't know* option. They indicated the method of birth control they had used or would use in sexual encounters. They listed two methods of birth control that they believed prevented both pregnancy and STDs. Questions 4-9 were multiple-choice questions about the correct use of birth control pills, the signs and symptoms of STDs, and male-female sex hormone identification.

Perfect Partner Poker (characteristics of a good partner and appropriate dating behavior). Perfect Partner Poker had four components with a total of five questions. Participants listed three positive and three negative characteristics they were/were not looking for in a partner and explained their importance. Using a five-point Likert scale, participants rated how behaviors such as an occasional insult would affect their dating relationship. Participants listed two neutral characteristics or characteristics they considered "not a big deal" in their dating relationships. Participants were then asked to identify behaviors that they would consider abusive from a list of 14 behaviors such as "makes you have sex" (see Appendix A for an example).

Communication Connection (knowledge of effective verbal and nonverbal communication tactics regarding dating and conflict situations). There were five questions in total. Participants identified possible verbal and nonverbal responses that their friends might give regarding two statements: asking someone on a date and having an argument with a parent about a curfew. Participants then provided in an open-ended format descriptions of nonverbal responses to six statements (e.g., I really like you). Half of the statements required descriptions that matched the statements, and half the descriptions did not match the statements. Participants were then presented with four possible ways to communicate lack of interest in sexual activity when a dating partner touched them and were asked to identify the most and least effective way to communicate their wishes and to explain their reasoning (see Appendix A for an example).

Love Connection (knowledge and application of the principles of relationships). There were three questions asking participants about their understanding of three components of a relationship: commitment, passion, and intimacy. Participants provided definitions of terms and ranked their importance. Participants indicated the presence of these components in six types of relationships (e.g., with boyfriend/girlfriend, parents, etc., see Appendix A for an example).

Results

Each of the 29 questions (15 quantitative, 14 qualitative) in each of the six stations of the health fair was analyzed independently using an item analysis. All the analyses were conducted as a function of sex. If no sex differences existed the data were combined. A general summary of the outcomes for the individual questions in each health fair station is presented first. This is followed by the aggregation of items according to the following six areas of sexual health knowledge: anatomy, sexually transmitted diseases, pregnancy and pregnancy prevention methods (i.e., birth control), healthy relationships, unhealthy relationships, and communication questions.

General summary of individual questions. Overall, no participant was able to endorse correctly all the items in any of the health fair stations. Errors included overselection of responses for questions containing multiple correct items, and incorrect endorsements for questions with only one correct item. Participants did demonstrate greater knowledge of some sexual health issues compared with others (correct endorsements over 70%, see Table 1 for a summary of strengths and weaknesses).

For example, both girls and boys performed well on the section of Your Fertile Future dealing with anatomy. Girls also performed well on one question dealing with male anatomy on Sexual Trivial Pursuit. In addition, students demonstrated strengths on three questions about sexually transmitted diseases in The Signature Game. Boys (2 questions) and girls (3 questions) did well on questions dealing with pregnancy/pregnancy prevention issues in Sexual Trivial Pursuit. With respect to relationships, girls and boys performed well when defining commitment, identifying the presence of passion in relationships, and resolving differences in ranking relationship components with a partner in Love Connection. As well, two items dealing with healthy relationships in Perfect Partner Poker and one question dealing with communication in Communication Connection were answered correctly. Finally, girls performed well on one issue related to unhealthy relationships in Perfect Partner Poker and one item dealing with communication on a date in Communication Connection. Boys performed well on one component (i.e., commitment) of Love Connection dealing with healthy relationships.

For the remaining sections, 19 components for boys and 15 components for girls, correct endorsement rates ranged from fewer than 69% to as low as 20% (girls M=40.07, SD=18.23; boys M=34.27, SD=21.58). These sections dealt with pregnancy/pregnancy prevention methods (boys 3 questions; girls 2 questions), female sex hormones (1 question), male sex hormones (boys 1 question), sexually transmitted diseases (3 questions) and questions regarding communication (boys 5 questions; girls 4 questions) and healthy relationships (i.e., intimacy, passion, commitment). Finally, weaknesses were demonstrated on items dealing with unhealthy relationships (boys 3 questions; girls 2 questions).

Summary of aggregate questions. Anatomy. On the two anatomy questions in the Your Fertile Future station, nobody correctly endorsed all of the seven subcomponents of the two questions (see Table 1 for a summary). However, over 70% of girls and boys correctly endorsed at least 5 of 7 correct answers. Both girls and boys had difficulty recognizing that the stem "has had a wet

Table 1
Summary of Strengths and Weaknesses in Health Fair Information

Fair Station Topic	*Strengths*	*Weaknesses*
The Signature Game		
STDs	2 questions	2 questions
Your Fertile Future		
Anatomy	1 question (5 of 7 subsections of remaining 2 questions)	0 questions (2 of 7 subsections of remaining 2 questions)
Sexual Trivial Pursuit		
Anatomy	2 questions	(boys only—2 questions)
STDs	0 questions	2 questions
Pregnancy	2 questions	3 questions
Perfect Partner Poker		
Healthy Relationships	1 question	1 question
Unhealthy Relationships	0 questions	3 questions
Communication Connection		
Healthy Relationships	0 questions	5 questions
Love Connection		
Healthy Relationships	0 questions	3 questions

dream" is true for a fertile male (girls = 28.6%; boys = 41.2%); instead most students identified this as false (girls = 28.6%; boys = 35.3%) or they did not know (girls = 42.9%; boys = 23.5%). Similarly, fewer than 60% of girls identified the statement that fertile boys and girls have "reached puberty" as true. Although 65% of boys had difficulty recognizing that "(wanting) sex all the time" is not a necessary marker of female fertility, as many as 35% identified this as necessary.

Two of the eight questions in the Sexual Trivial Pursuit subsection were related to anatomy. Students were able to identify the female (girls = 90.01%; boys = 57.14%) and male sex hormones (girls = 80%; boys = 66.7%). Most students who did not answer correctly indicated that they did not know the answer.

Sexually transmitted diseases. Students demonstrated sporadic knowledge of issues dealing with sexually transmitted diseases (see Table 1). For example, of the six questions dealing with sexually transmitted diseases from The Signature Game and Sexual Trivial Pursuit sections, students demonstrated strengths on three questions and weaknesses on the other three questions. The Signature Game had three quantitative and one qualitative question. Students performed well on two of the quantitative items and the qualitative item. Errors on these and the remaining questions tended to reflect an underselection of appropriate answers. For example, on question 2 fewer than half of girls and boys acknowledged that to lower the risk of getting an STD a person could "use only new needles if they are injecting drugs."

Generally, questions in the Sexual Trivial Pursuit section were answered poorly by students. For example, on question 6, when asked to identify charac-

teristics that are not signs of STDs, fewer than half of girls and boys were able to identify that "nausea and vomiting" and "missed periods" are not signs of a STD. In most cases there was an error of overselection, with students identifying alternates that are signs of sexually transmitted diseases (i.e., painful intercourse). However, on question 7 students made errors of underselection, failing to endorse one of the two correct signs of sexually transmitted diseases. On this question most girls and boys correctly identified that signs of sexually transmitted diseases are "often detected" (girls = 75.0%; boys = 73.3%); however, no girls or boys correctly identified that signs of STDs are "easier to see in males."

Pregnancy/pregnancy prevention methods (i.e., birth control). Questions assessing pregnancy and pregnancy prevention methods were also answered inconsistently by students. Students demonstrated weaknesses in answering quantitative questions (i.e., multiple choice); however, they demonstrated strengths answering short answer qualitative questions. When students were asked to identify instances where the birth control pill may not prevent pregnancy, fewer than 60% of girls correctly endorsed four of the five correct alternates (e.g., when you are vomiting or have diarrhea) while fewer than 60% of boys correctly endorsed three of the correct alternates. In addition boys (53.3%) demonstrated weaknesses in identifying when the birth control pill must be taken to prevent pregnancy (i.e., taken around the same time every day for at least 21 days). More positively, when asked to name two methods of birth control that help prevent both pregnancy and sexually transmitted diseases, 82.35% of girls and 66.66% of boys listed one of three correct answers: condoms and foam, condoms and birth control pill, or abstinence. The remaining boys (33.33%) selected condoms. Students also provided thoughtful, correct short answers in response to two things a couple should think about before having a baby (e.g., financial stability).

Healthy relationships. Identifying and describing three components of a healthy relationship (i.e., intimacy, passion, and commitment) in the section Love Connection was an area of weakness for students. Overall, for the intimacy component nobody correctly endorsed all the alternates. For the passion component an approximately equal proportion of girls (53.3%) and boys (50%) correctly endorsed all the alternates. For the commitment component significantly more boys (50%) than girls (26.7%) correctly endorsed all the alternates, $t(23)=1.176$, $p<.05$. Perfect Partner Poker had two quantitative questions that related to healthy relationships. Nobody correctly endorsed both questions. One third (33.3%) of the girls and only 12.5% of the boys were able correctly to endorse one of the two questions (sex differences were not significant, $t(37)=-1.60$, $p>.05$).

Three qualitative questions in the Perfect Partner Poker component assessed healthy relationships. Students were able to list correctly three positive characteristics important for a dating partner to possess. For example, a nice personality (girls = 23.40%; boys = 39.47%) was the most common response. For both girls and boys a sense of humor (girls = 19.15%; boys = 15.79%) and honesty (girls = 12.77%; boys = 5.26%) were also listed as important. Additional positive characteristics identified by girls included faithfulness/trustworthy (12.77%), intelligence (6.38%), extroversion (4.26%), and respectfulness (4.26%).

Boys identified personal care characteristics such as athleticism and physical attractiveness (21.05%) and similarity of interests/hobbies (5.26%).

The weaknesses on the intimacy component were evident in the quantitative and qualitative responses for this section. Specifically, fewer than 35% of girls and fewer than 20% of boys correctly identified intimacy as a component of four relationships, such as *best friend* and *parents*. Similarly, when asked to define intimacy, only a small proportion of girls and boys correctly identified words such as *closeness* as a component of intimacy. Further, girls defined passion and boys defined both intimacy and passion in terms of sexual acts. In addition, girls demonstrated weaknesses in identifying the presence of commitment in relationships (fewer than 65%).

Unhealthy relationships. Overall, girls and boys demonstrated weaknesses in identifying characteristics of unhealthy relationships; however, girls were more knowledgeable than boys. For example, girls more accurately described characteristics that may potentially result in an unhealthy dating relationship. Girls listed characteristics such as rude (22.58%), abusive (16.13%), unfaithful (12.9%), and possessive (9.7%). Although boys also identified some of these characteristics (i.e., rude 25%), approximately 15% listed characteristics such as physical attributes (i.e., "zits," "big butt"). Further, on a question dealing with abusive characteristics only one of 11 correct alternates was endorsed by at least 50% of girls, and four correct alternates were endorsed by fewer than 65% of boys.

Communication. Communication Connection had four qualitative questions and one multiple-choice question followed by an explanation. Overall, performance was poor. Only 33.3% of girls and 12.5% of boys correctly endorsed the multiple-choice question. Students demonstrated weaknesses in selecting the most and least effective way to communicate their wishes (i.e., "not interested in sexual activity") to a date. Only 60% of girls and 41.6% of boys correctly endorsed that the most effective way to communicate a wish to a date was to "tell the person not to touch you and move their hand away." Girls and boys overselected the remaining distracters. For example, approximately one third of girls and boys restricted their communication to a verbal message only. Similar poor performance was obtained for the qualitative questions. For example, students demonstrated weaknesses in listing appropriate verbal and nonverbal techniques for communicating with parents. For example, 60% of girls and 77.7% of boys would engage in inappropriate behaviors such as swearing, screaming, or fighting to communicate with parents, whereas only 15% of girls and 5.55% of boys would engage in mature problem-solving behaviors.

Discussion

Overall, the results indicate that both female and male grades 9-10 students require instruction in some but not all areas presented through this sexual health fair. Clearly students have an awareness of issues and are well equipped with some fundamentals. Specifically, they demonstrate knowledge regarding anatomical differences related to maturation, types of birth control and pregnancy prevention, and identification of STDs. The concern is that these students have an incomplete knowledge base and often rely on misconceptions. Incomplete knowledge, for example, was demonstrated when students indi-

cated their awareness that STDs can be detected, but they had difficulty identifying the specific signs that would indicate the presence of STDs. The limitations of knowledge base are an important concern for this population. Although knowledge itself does not necessarily translate into behavior, at the very least access to accurate information provides the possibility for influencing behaviors.

In general, in these sections there were few sex differences. Differences that were detected were found for individual items rather than general topic areas. Boys and girls, therefore, would benefit equally from exposure to information in these domains.

For components with high correct endorsement rates, students are receiving, or have received, adequate information through existing programs. These areas may not need the level of coverage that is presently given through this health fair. The content of the remaining stations and subcomponents, however, clearly requires intervention to promote the level of knowledge that is necessary for these students to conduct safer and healthier relations. In particular, the content of the health fair that seems most needed is the components dealing with healthy relationships, both sexual and nonsexual.

Several researchers have noted that students express a need to know more about dating and relationships, but beyond this general request little is known about specific information that would benefit students (Cairns et al., 1994; Mellanby et al., 1996). In the present study, with respect to healthy relationships it is clear that students at this age do not understand the concept of intimacy. The present study found that at least 50% of students recognized appropriate relationships where they would expect to find passion, and to a lesser extent commitment, but few of the students were able to identify relationships that would involve intimacy. In fact, generally students limited intimacy to romantic relationships, underrating its presence in other types of relationships (i.e., parents, best friend).

One further concern was the discrepancy between boys and girls in the definition of relationships where sexual behavior is expected. Girls tended to define passion and boys to define both intimacy and passion in terms of sexual acts. This overinclusion for boys puts them at risk for incorrectly interpreting close relationships with girls. This lack of congruence in understanding expectations of relationships could lead to significant difficulties. This concern has been identified in other research. For example, Patton and Mannison (1995) found that 53% of girls reported that boys overestimate the level of sexual contact desired, whereas 45% of boys reported that girls underestimate the level of sexual contact desired. If boys consider sexual contact an integral component of intimacy, they may set themselves and their partners up for negative dating experiences. Specifically, the difference in expectations between boys and girls can lead to scenarios of unwanted and embarrassing sexual advances and possibly date rape (Abbey, 1991; Christopher, 1988)

An additional concern regarding healthy relationships involves the ability of students to recognize characteristics in a partner that differentiate between a healthy versus an unhealthy or abusive relationship. Although students accurately identified positive characteristics of a dating partner, there was greater confusion in identifying negative characteristics or negative dating scenarios.

Although girls were able to identify personal characteristics in a partner that might lead to unhealthy relationships, they were not able to identify characteristics most likely to lead to an abusive relationship. In this sample fewer than 50% of the girls were able to identify correctly even one of 11 abusive features. Among the boys, on the other hand, most were able to identify almost half of the negative characteristics. Therefore, girls may be at a greater risk for entering dangerous relationships because they do not recognize danger signs.

Ineffectiveness in communicating their wishes and poor strategies for communicating heighten the possibility that these teens unknowingly may become involved in negative relationships both in the dating context and between themselves and their parents. In addition, when in negative situations both boys and girls indicated that probability would be high for their engaging in inappropriate behaviors. This included possible verbal or physical violence and failures in clearly stating and demonstrating their wishes. For example, only 40% of students recognized that physically moving a date's hand while expressing themselves verbally would be a more effective way to communicate disinterest in sexual activity than simply the verbal message. Clearly strategies for mature problem-solving in relationships is an issue that needs to be addressed in this population.

Overall, it is evident that adolescents similar to the present sample would benefit from exposure to the content provided through the health fair Choices Not Chances. The fair provides scenarios and information that both review and challenge their present knowledge. Although some areas do represent review for many students, the diversity of knowledge among the students suggests that the review of this information would be beneficial to ensure that all students have equal exposure to the material. The study also makes obvious the need to promote critical thinking skills, especially in areas dealing with relationships. The health fair provides an opportunity to engage in critical thinking by having students analyze their own behaviors, beliefs, and expectations. In some cases this fair may be the first opportunity that students have to consider and reflect on their own and their peers' responses to these issues. The fair may also serve as the first opportunity to evaluate this material in the context of their peers and knowledgeable reference personnel. Armed with skills and knowledge in these areas, students may be better equipped to distinguish between the characteristics of healthy and unhealthy dating relationships. Explicitly teaching students in these areas may ensure that students possess both the factual information and the adequate skills to behave in a sexually mature and responsible manner (Blau & Gullotta, 1993).

In summary, the information and skills introduced through the participation in a health fair such as Choices Not Chances provides an opportunity for students to gain explicit instruction in material in which they presently lack knowledge. As well, the fair exposes students to professionals who could serve as alternative contacts for related information (i.e., the health nurses who provide the program) and the impetus for continued discussion in future classes. Presenting this fair as part of the regular school curriculum conforms to students' wishes (McKay & Holowaty, 1997) and allows educators to maximize the population that is reached. In addition, making sexual health information fun and exciting to learn may, through the introduction of innovative pro-

grams, aid in the retention of information and possibly a greater awareness of issues raised (Hillman et al., 1991). Further, by extending the topics presented beyond the typical anatomy material, educators provide a forum for introducing content related to healthy sexual relationships. Information can be provided in an encouraging and respectful way, allowing all adolescents, independent of their sexual orientation, to participate and learn critical information. Instead of focusing solely on the preventative approach to minimizing "risky" sexual activities, this kind of health fair also introduces the possibility of discussing the positive, pleasurable aspects of healthy sexual relations.

In essence, health fairs can provide one more resource that educators can use to foster a healthy sense of self and positive attitudes toward sexuality, as well as teach an understanding of the positive and negative effects certain interactions and behaviors have on relationships and communication in their adolescent students.

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Note

1. Although the items in the fair attempted to present information in a gender-neutral fashion (e.g., couples named Pat and Chris) to allow for diversity in sexual orientation, this section had a heterosexual bias.

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Appendix A
Sample Questions From The Choices Not Chances Health Fair

Signature Game

To lower the risk of getting a sexually transmitted disease a person could:
(Circle ALL the correct answers)

A have sex using a latex condom
B have sex using the birth control pill
C not have sex
D use only new needles if they are injecting drugs
E share a needle only with their friend
F avoid public toilets
G avoid French kissing

Your Fertile Future

A fertile male is someone who: (For each statement, circle whether it is true, false or you don't know)

A	is making sperm	true	false	don't know
B	is a stud	true	false	don't know
C	can become a father	true	false	don't know
D	has reached puberty	true	false	don't know
E	has a wet dream	true	false	don't know
F	is athletic	true	false	don't know
G	wants sex all the time	true	false	don't know

Sexual Trivial Pursuit

The birth control pill might not prevent pregnancy: (Circle ALL correct answers)

A when you are taking antibiotics (e.g., penicillin)
B when you are taking some cold medications
C when you are vomiting or have diarrhea
D when you have missed one or more pills
E when you change the time of day that you take the pill after starting a package
F when you take it with milk or food
G when you take it before or after drinking alcohol

Perfect Partner Poker

List three positive characteristics that you would look for in a dating partner and explain why they are important.

Put a check mark beside all of the following that you consider abusive.

Makes you have sex
Won't let you talk to your friends
Puts your friends down
Never thinks you are right
Makes all the decisions
Brags a lot
Spends all their free time with you
Gets angry easily
Threatens to hit or hurt you if you don't do what they want
Hits you every now and again
Threatens to hurt you even though you haven't done anything
Says they will dump you if you don't have sex
Says they will hurt themselves if you end the relationship
Breaks up with you

Communication Connection

Consider the following situation. You are out on a date. Your partner is really attracted to you and keeps touching you. You are not interested in sexual activity with this person and you wish to communicate this. Which of the following would be the most effective in communicating your wishes? Why? Which would be the least effective option in getting your message across? Why?

A ignore the touching
B laugh and move the person's hand away when they touch
C tell the person "I don't like that"
D tell the person not to touch you and move their hand away

*Most effective*_____ (Pick one letter from the above choices)
Why?
*Least effective*_____(Pick one letter from the above choices)
Why?

Love Connection

Please put a check mark beside each of the three components is present in a relationship with each of the following people: (Could check more than one or none)

	Intimacy	Passion	Commitment
Grandparents			
Parents			
Best friend			
Boyfriend/girlfriend			
Teacher			
Brother/sister			