Teen Sexuality

Reaching Out in the Malls

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ABSTRACT

Background: Existing sexual health programs have not significantly reduced teen pregnancies or sexually transmitted diseases. A more creative approach is needed.

Methods: An assessment of 539 teens in one Ontario city was conducted to identify knowledge about and use of birth control, comfort in discussing sexual health, and preferred sites, providers and methods of service delivery.

Results: Knowledge of, and comfort discussing, birth control was not associated with frequency of use but was associated with grade. Adolescents were less comfortable discussing sexual health with teachers than health professionals. Over time, comfort increased with health professionals, but not teachers. Sexually active teens reported willingness to attend mall-based clinics.

Conclusions: Using birth control appears to be maturational given its association with grade. Since teens were consistently less comfortable with teachers, providing sexual health services in schools is likely ineffective. Teens may respond to clinics in creative settings such as malls.

The translation of the Abstract appears at the end of the article.

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In North America, there is no one rite of passage into adulthood. Marker events that adolescents anticipate are: obtaining drivers' licenses, drinking legally, and losing their virginity. Of those, only losing one's virginity requires no formal sanction and is unmarked by public celebration and acknowledgement. Over half of adolescents experience this rite before age 18.[1] Because it is hidden, they are largely on their own without support or guidance. As a result, adolescent sexual activity may lead to seriously negative outcomes such as pregnancy, early parenthood, abortion, and/or infection with sexually transmitted diseases (STDs). A re-examination of adolescent sexual health services is therefore warranted.

BACKGROUND

In London, Ontario, attempts to reduce the impact of teen sexual activity have been marginally effective. Adolescent pregnancy rates have plateaued for a decade.[2] In 1995, the pregnancy rate for 15-19 year-olds was 47.8 per 1000,[2] similar to the 1994 Canadian rate of 48.8 per 1000.[3] Forty-seven percent of these pregnancies were aborted.[2] Between 1990 and 1998, 1,311 per 100,000 15-19 year-old females were infected with chlamydia, the most commonly reported STD.[4] Most cases of chlamydia and gonorrhoea occur in 15-24 year-old females.[4] These rates are generally consistent with other Canadian centres.[5]

Beliefs that school-based sexual health education results in behaviour change are not substantiated by the literature.[6-9] Mode of delivery, personnel, and program evolution may impact on lack of success. First, the Middlesex-London Health Unit offers traditional, medical model, single-site services not tailored to teen learning styles and preferences. School-based sexual health education has been primarily didactic and confined to certain grades only. Second, researchers have investigated teacher comfort level in discussing sexual health with adolescents[10] but not the reverse. There is evidence, however, that adolescents are comfortable discussing sexual health with health care professionals.[5,11] Unfortunately, professionals are often inaccessible,[12] untrained to work specifically with adolescents, and predominantly female.[13] Third, education alone may have reached its maximum efficacy. Combining

education programs with other services, such as school-based sexual health clinics, peer counselling, and role modelling may be a necessary progression to achieve better results.[14,15] Here, gaining access to schools for service delivery is problematic; therefore, a creative solution is warranted.

Given time and personnel constraints, the authors focused on developing an alternative rather than evaluating current services. Neuman Systems Model[16] was used as a conceptual basis to determine whether aforementioned issues affect sexual health programs and to find more effective ways to empower teens to take responsibility for sexuality. The purposes of this assessment were to:

a) explore one alternative method of adolescent sexual health service delivery,
b) identify persons with whom adolescents are most comfortable discussing sexuality,
c) collect baseline data regarding adolescents' current knowledge about, and use of, birth control and STD prevention, and
d) identify delivery preferences for and perceived barriers to obtaining sexual health information.

A 47% abortion rate for teen pregnancies[22] implies that these issues are important to sexually active teens not wishing to parent immediately. They are also consistent with the provincial government's goals for sexual health for 2005.[17]

METHODS

Design

Third and fourth year university nursing students collaborated with Health Unit personnel and nursing faculty to assess a convenience sample of adolescents from two apparently diverse socio-economic and geographic neighbourhoods in an Ontario city of 330,000 residents. At time one (fall 1999), teens were assessed in a mall situated in a middle to upper-middle class west-end neighbourhood. At time two (winter 2000), they were assessed in a mall and secondary school situated in a lower to lower-middle class east-end area, in which high rates of teen-aged pregnancy and low birthweight have been reported.[18] Prior to time one, we conducted a focus group of students from the high school adjacent to the mall for the purposes of pre-testing the instrument and encouraging participation through increased student awareness. Mall managers and school administrators were approached for permission to use space and gain access to potential participants prior to implementation of each phase.

TABLE I

Description of Participants

Variable	Number of Participants (Percent)
Data Source	
West End Mall	164 (30.4)
East End Mall	95 (17.6)
Physical Education Classes	280 (51.9)
Gender	
Male	253 (46.9)
Female	286 (53.1)
Age*	
14	119 (22.6)
15	147 (27.9)
16	109 (20.7)
17	86 (16.3)
18	52 (9.9)
19-20	14 (2.7)
School Grade	
9	172 (31.9)
10	129 (23.9)
11	98 (18.2)
12	106 (19.6)
13 (OAC)*	34 (6.3)
Total	539 (99.9)

* 12 missing values, no subjects reported age <14 years

Survey instrument

The questionnaire was adapted from one designed by the Health Unit to assess knowledge of birth control and related learning needs in another secondary school. Modifications included additional questions related to sexual health: a) comfort with discussion, b) barriers to access and c) preferred site and methods for acquisition. (Note: The questionnaire is available upon request from Dr. Sheila Evans.) The psychometric properties of the original tool had not been evaluated. After preliminary modification, content validity was established and the tool further revised on the basis of focus group pre-testing and peer and expert feedback on readability, comprehensiveness, and clarity. Construct validity was established by comparing questions asked with those expected from application of the Neuman Systems Model. Since this questionnaire was designed to address more than one area of sexual health, the authors were not attempting to measure a single attribute. Therefore, assessment of internal consistency was inappropriate.[19]

TABLE II

Factors Associated with Adolescent Sexual Activity. Unadjusted Association Between Grade in School and Sexual Activity: Grade 9 as Comparison Group

School Grade	O.R. (95% C.I.)†
10	2.07 (1.25-3.41)
11	2.73 (1.60-4.66)
12	6.47 (3.77-11.09)
13	10.07 (4.23-23.96)

Factors Associated with Adolescent Sexual Activity

Factor	O.R. (95% C.I.)†
Gender (male)	2.07 (1.38-3.10)***
Grade	1.77 (1.51-2.08)***
Knowledge of Birth Control	1.41 (1.07-1.86)*

† Odds ratio (95% confidence intervals)
* probability <0.05
*** probability <0.001

Sampling

During data collection, we assessed a convenience sample of 13-20 year-olds who consented to participate. Ten participants were recruited for each factor studied (n = 26). The sample was doubled to allow for stratification should the population be substantively different from time one to time two.

At time one, only adolescents found in the mall were enrolled either by self-selection or by active recruitment. A similar method was used at time two, but was expanded to include students in the adjacent secondary school. Teachers requested students to complete a survey during physical education classes.

Data collection and management

Time was limited by the nursing students' schedules. Data were collected over two days in either the mall or the school. Only youth who had not completed a survey in the school were eligible to participate in the east end mall. To ensure anonymity, no identifying data were collected, completed questionnaires were placed in unmarked envelopes, and only group responses are reported. All data were entered into, and analyzed using, the Statistical Package for Social Sciences (SPSS) Version 8.

RESULTS

The final sample, n = 539, is described in Table I. Since grade and age were very strongly correlated (r = 0.93, p<0.001),

TABLE III

Association Between Sexual Health Factors and Grade in School: All Subjects Combined and Those Who Are Sexually Active

	ANOVA F(p)*			
Factor	**All Subjects Combined**		**Sexually Active Subjects**	
Birth control knowledge	$4.88_{(4,478)}$	**(0.001)**	$1.95_{(4,214)}$	0.10)
Birth control use frequency	N.A.		$2.78_{(4,218)}$	**(0.03)**
Comfort in talking about sexual health with:				
Teachers	$0.32_{(4,528)}$	(0.87)	$0.64_{(4,226)}$	(0.63)
Physicians	$6.73_{(4,527}$	**(<0.001)**	$1.49_{(4,225)}$	(0.21)
School Nurse	$3.50_{(4,525)}$	**(0.008)**	$1.74_{(4,224)}$	(0.14)
Friends	$1.11_{(4,529)}$	(0.35)	$0.26_{(4,227)}$	(0.90)
Willing to go to mall clinic	$1.02_{(4,526)}$	(0.40)	$0.56_{(4,225)}$	(0.70)

* probability significant only where p<0.05

TABLE V

Where Would Teens Go to Acquire Sexual Health Information, and Association with Comfort Discussing Sexual Health

Source of Information	**Number Willing to Seek Information There (%)**
Clinic	296 (55.3)
School Nurse	94 (17.4)
Physician's Office	262 (49.2)
Community Centre	82 (15.4)
Parents	222 (41.6)
Friends	317 (59.4)
Other	41 (7.7)

Association Between Willingness to Go to Mall Clinic and Comfort Discussing Sexual Health: All Subjects Combined and Only Those Who are Sexually Active

	ANOVA F (p)*	
Comfort With:	**All Subjects Combined**	**Sexually Active Subjects**
Physicians	$1.45_{(4,525)}$ (0.22)	$1.31_{(4,225)}$ (0.27)
Parents	$0.54_{(4,526)}$ (0.71)	$1.37_{(4,226)}$ (0.24)
School Nurse	$1.48_{(4,523)}$ (0.21)	$1.45_{(4,224)}$ (0.22)
Friends	$0.81_{(4,527)}$ (0.52)	$0.33_{(4,227)}$ (0.86)
Teachers**	$3.37_{(4,526)}$ **(0.01)**	$2.52_{(4,226)}$ **(0.04)**

* probability significant when p<0.05
** Negative correlation between comfort with teachers and willingness to go to mall clinic: All subjects r = -0.08 (p = 0.06); sexually active subjects only r = -0.12 (p = 0.06)

only grade is reported here to reduce the frequency of small cell size errors during analysis. Grade nine students were over-represented in class samples (n = 129, 46.1%), since physical education is compulsory only in grade nine. Subject responses were expected to vary on the basis of differences in socio-economic factors in the two geographic areas sampled. After conducting both stratified and unstratified analyses, there were no significant differences in responses by area. Therefore, all results are shown unstratified.

Fewer than half of teens (44.4%) reported being sexually active. Of those, 52.5% were male. As expected, sexual activity increased with grade (Table II). Most teens reported having some or a lot of knowledge about: all types of birth control (87.7%), condoms alone (93.6%), STDs (84.9%), and AIDS (86.2%). However, only 48.1% reported having a similar level of knowledge about community resources. Knowledge increased with grade for all subjects; however, for the sexually active subgroup, level of knowledge was associated with neither grade (Table III) nor frequency of birth control use ($F_{(5,205)} = 2.14$, p = 0.06). In univariate analyses, sexual activity was associated with level of knowledge about all birth control methods, condoms, and community resources, but not associated with level of knowledge about STDs or AIDS. After adjusting for grade and gender, only knowledge about condoms, and community resources continued to be associated with sexual activity. The most important factors associated with sexual activity were gender and grade (Table IV).

Although most sexually active teens (71.1%) reported using contraception at least 75% of the time, 17% reported less than 25% use. Nine percent of females and six percent of males reported using no contraception. The condom was the most frequently reported male method (47.6%); however, 21% of males reported using condoms and birth control pills together.

TABLE IV

Association Between Knowledge Level About Sexual Health and Being Sexually Active, Adjusted for Grade and Gender

Sexual Health Knowledge Area	**Sexually Active – Yes Odds Ratios (95% C.I.)†**
Birth Control	not selected
Condoms	1.41 (1.03-1.93)*
Sexually Transmitted Diseases	0.78 (0.58-1.06)
AIDS	not selected
Community Resources	1.50 (1.18-1.89)***
Grade	1.76 (1.49-2.07)***
Gender	
Male	2.06 (1.37-3.10)***
Female (reference group)	1

† (95% confidence intervals)
* probability <0.05
*** probability <0.001

Most frequently, females reported using condoms and birth control pills together (47.3%). A further 22.3% of females reported using condoms alone; only 7% reported using birth control pills as their sole contraceptive method.

Few teens (13.4%) reported being comfortable or very comfortable in discussing sexual health with teachers, while 43.9%, 37.7%, and 75.4% reported similar comfort levels with physicians, parents, and friends respectively. As a group, all teens became more comfortable with physicians and school nurses as grade increased, but comfort with teachers and friends did not change. The association between grade and comfort with health professionals was not observed in the sub-group of sexually active teens. Willingness to attend mall clinics for sexual health services was inversely associated with comfort level in talking with teachers, but not with comfort in talking to health professionals or significant others (Table V). While one third of participants said they would use a mall-based clinic, 41% indicated they were undecided. Sexually active teens were more willing to attend a mall-based clinic than all participants combined. When asked about barriers to gaining information on sexual health, the most frequent response was embarrassment (Table VI). Embarrassment was associated with being female but not grade or sexual activity.

DISCUSSION

This study's major limitation is that results are based on a community assessment rather than formal research with extensive psychometric evaluation of the survey

instrument. Although additional reliability and validity testing is needed prior to using the instrument in other settings, the assessment was rigorous and results were consistent in both assessment periods. Surveying a population using a convenience sample may limit generalizability. Over-representation of younger teens may explain the majority report of not being sexually active. However, some findings require further investigation. For example, although most sexually active teens reported inconsistent use of birth control that also provided STD protection, others used both condoms and birth control pills. This finding should be verified or refuted in other populations. Since such reports suggest some teens are sharing responsibility with partners, understanding factors leading to shared responsibility is important.

Lack of association between knowledge about birth control and grade for sexually active teens suggests that either they have less knowledge than their non-sexually active peers or that they become knowledgeable sooner. If they have less knowledge, teaching about birth control may help delay sexual activity. If they become knowledgeable sooner, knowledge is not translated into action since frequency of birth control use was not associated with knowledge of birth control. Finding that frequency of birth control use increased with grade, but not with knowledge, suggests that there is a maturational process in using birth control which information alone may not affect.

Since youth were comfortable discussing sexual health with friends and health professionals, but few expressed similar comfort with educators and this did not change over time, collaborative provision of sexual health services by peers and health professionals appears to be the best option. Since having sexual health clinics within school premises is non-negotiable, services must be provided offsite. A nearby mall is as close as the Health Unit can get. Students frequent these malls. The potential for use of mall sites is supported by the significant, inverse relationship between willingness to attend mall clinics and comfort level in talking with teachers. If such services are established, they must be adequately publicized since fewer than half of teens reported having some knowledge of community resources.

TABLE VI

Factors Which Prevent Teens from Gaining Information on Sexual Health* and Association with Key Variables

Reported Factors	**Frequency (Valid%)**	
No perceived barrier	73 (32.6)	
Embarrassment	118 (52.7)	
Parents	28 (12.5)	
Friends	3 (1.3)	
Other	2 (0.9)	
Total	224 (100)	
Association with Key Variables		
Grade in School	$\chi^2_{(16)} = 21.74,$	$p = 0.152$
Gender	$\chi^2_{(4)} = 9.63,$	$p = 0.047$
Sexually active (Yes/No)	$\chi^2_{(4)} = 5.21,$	$p = 0.267$

* Only 224 participants (41.6%) of participants responded to this question.

Peer counselling may be most useful for those already sexually active, since there was no evidence of increased comfort with health professionals as grade increased. This may mean sexually active youth trust no adult with this information or have become comfortable with health professionals earlier. Reported willingness to attend mall-based clinics may reflect a desire for anonymity and reduced fear of embarrassment or repercussions from educators or parents.

CONCLUSIONS

Becoming sexually active and using protection appears to be a function of maturation. Knowledge alone does not impact these important decisions. Mall-based clinics may provide a valuable, alternative service for teens who cannot talk easily to teachers or parents but require information, birth control, STD prevention, or help with repercussions of sexual activity. Staffing clinics with peer counsellors and health professionals may provide teens with needed comfort to seek help to be sexually responsible.

REFERENCES

1. Wolk L. The benefits of school-based condom availability: Cross-sectional analysis of a comprehensive high school-based program. *J Adolesc Health* 1995;17:184-88.
2. Middlesex-London Health Unit. Reproductive Health Report: Middlesex County and the City of London. London, Ontario: author, 1998.
3. Hanvey L, Avard D, Graham I, Underwood K, Campbell J, Kelly C. *The Health of Canada's Children: A CICH Profile* (2nd ed.). Ottawa: Canadian Institute of Child Health, 1994.
4. Middlesex-London Health Unit. Communicable Disease Report for Middlesex-London: 1990-1998. London, Ontario: author, 2000.
5. Starr C. Beyond the birds and the bees: Talking to teens about sex. *Patient Care* 1997;31(7):102-12.
6. Hingson RW, Strunin L, Berlin BM. Acquired immunodeficiency syndrome transmission: Changes in knowledge and behaviors among

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RÉSUMÉ

Contexte : Les programmes de santé sexuelle existants n'ont pas réduit de façon importante la grossesse chez les adolescentes et les maladies transmises sexuellement, d'où la nécessité de trouver des approches novatrices.

Méthode : Nous avons sondé 539 adolescents d'une ville ontarienne pour déterminer leurs connaissances et leur emploi des méthodes anticonceptionnelles, leur aisance à parler de santé sexuelle et leurs préférences quant aux lieux où obtenir des services de santé sexuelle, aux prestateurs de ces services et aux méthodes de prestation.

Résultats : Les connaissances et l'aisance n'étaient pas associées à la fréquence d'utilisation des méthodes anticonceptionnelles, mais au niveau de scolarité. Les adolescents étaient moins enclins à discuter de santé sexuelle avec des enseignants qu'avec des professionnels de la santé. Ils devenaient graduellement plus à l'aise avec les professionnels de la santé, mais pas avec les enseignants. Les adolescents actifs sexuellement étaient disposés à visiter des cliniques de centres commerciaux.

Conclusions : L'emploi des méthodes anticonceptionnelles étant associé au niveau de scolarité, il pourrait être lié à la maturation. Comme les adolescents sont uniformément moins à l'aise avec les enseignants, il n'est sans doute pas efficace d'offrir des services de santé sexuelle à l'école. Il serait préférable de créer des cliniques dans des endroits moins conventionnels, comme les centres commerciaux.

teenagers. Massachusetts Statewide Survey, 1986-1988. *Pediatrics* 1990;85:24-29.
7. Johnson LS, Rozmus C, Edmission K. Adolescent sexuality and sexually transmitted diseases: Attitudes, beliefs, knowledge, and values. *J Pediatr Nurs* 1999;14:177-85.
8. Kirby D. School-based programs to reduce sexual risk-taking. *J Sch Health* 1992;62:280-87.
9. Visser AP, vanBilsen P. Effectiveness of sex education provided to adolescents. *Patient Educ Couns* 1994;23:147-60.
10. Haignere CS, Culhane JF, Balsley CM, Legos P. Teachers' receptiveness and comfort teaching sexuality education and using non-traditional teaching strategies. *J Sch Health* 1996;66(4):140-44.
11. Middlesex-London Health Unit. Teen Panel Summary Report: 1998-1999 School Year. London, Ontario: Author, 1999.
12. Shrier LA, Goodman E, Emans SJ. Partner condom use among adolescent girls with sexually transmitted diseases. *J Adolesc Health* 1999;24:357-61.
13. Brindis C, Bogess J, Katsuranis F, Mantell M, McCarter V, Wolfe A. A profile of the adolescent male family planning clinic client. *Fam Plann Perspect* 1998;30(2):63-66.
14. O'Donnell L, Stiueve A, San Dorval A, Duran R, Haber D, Atnafou R, et al. The effectiveness of the Reach for Health community youth service learning program in reducing early and unprotected sex among urban middle school students. *Am J Public Health* 1999;89:176-81.
15. Stout JW, Kirby D. The effects of sexuality education on adolescent sexual activity. *Pediatr Ann* 1993;22:120-26.
16. Neuman B. *The Neuman Systems Model* (3rd ed.). Norwalk: Appleton & Lange, 1995.
17. Ministry of Health, Public Health Branch. Mandatory Health Programs and Services Guidelines. Toronto, Ontario: author, 1997.
18. Crosse EA. Inter-area variation in low birthweight rates within the City of London, Ontario, 1984-1988 [Unpublished master's thesis]. London, Ontario: University of Western Ontario, 1994.
19. Polit DF, Hungler BP. *Nursing Research: Principles and Methods* (6th ed.). Philadelphia: Lippincott, 1999.

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