ABSTRACT

Purpose: This study was performed in the context of a sexual health promotion project in a Nova Scotia community. Community members wanted information about adolescent females' knowledge and use of emergency contraception (EC). The study was done to meet this need.

Methods: Female high school students aged 14 to 19 were administered a self-completion survey asking about their knowledge of EC, the time frame for its use, its effectiveness, their personal use of EC, unsuccessful attempts to obtain EC, and sources of knowledge of EC.

Results: Eighty-five percent of 411 female students participated. Eighty percent knew about EC, though few (8%) knew the time frame for EC use. Most (42%) heard of EC at school. Eighteen percent used no contraception at last intercourse. Only 2% ever had used EC.

Conclusions: Adolescent women know about EC but use it infrequently, even though they frequently lack contraception. These findings raise questions about alternative methods for providing EC to young women.

ABRÉGÉ

But : Cette étude a été réalisée dans le cadre d'un projet de promotion de la santé sexuelle dans une collectivité de Nouvelle-Écosse. Les membres de cette collectivité souhaitaient avoir de l'information sur les connaissances que possèdent les adolescentes des moyens de contraception post-coïtale ou contraception d'urgence, et l'utilisation qu'elles en font. Cette étude a été réalisée dans le but de répondre à ce besoin.

Méthodologie : On a demandé à des étudiantes du secondaire âgées de 14 à 19 ans de remplir un questionnaire portant sur leurs connaissances des moyens contraceptifs d'urgence, des délais pour les utiliser, de leur efficacité, de leur utilisation personnelle de ces moyens, de leurs tentatives infructueuses pour obtenir ces moyens, et de l'origine de leurs connaissances des moyens contraceptifs d'urgence.

Résultats : Quatre-vingt cinq pour cent des 411 étudiantes ont participé à l'étude. Quatre-vingt pour cent d'entre elles connaissaient les moyens contraceptifs d'urgence, mais rares étaient celles (8 %) qui savaient dans quels délais s'en servir. La plupart d'entre elles (42 %) en avaient entendu parler à l'école. Dix-huit pour cent n'avaient utilisé aucun contraceptif lors de leurs derniers rapports sexuels. Seulement deux pour cent d'entre elles s'étaient servies de moyens de contraception d'urgence.

Conclusions : Les adolescentes savent qu'il existe des moyens de contraception d'urgence mais elles s'en servent rarement en dépit du fait qu'elles manquent fréquemment de contraceptifs. Ces résultats posent des questions sur les autres méthodes qui permettraient de mettre les moyens de contraception d'urgence à la disposition des jeunes femmes.

Knowledge and Use of Emergency Postcoital Contraception by Female Students at a High School in Nova Scotia

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Although there are good reasons for wishing adolescents to delay onset of sexual activity, predicating public policy solely on such a goal is unrealistic. Many Canadian adolescents,¹ including those in Nova Scotia,^{2,3} are sexually experienced; by the time they reach Grade 12, 60% of adolescents in Nova Scotia will have had sexual intercourse at least once.⁴ Pregnancy rates in Canadian women aged 15 to 19 stood at 48.8/1000 in 1994.⁵ Similarly, in Nova Scotia, between 4 and 5% of adolescent women become pregnant each year.⁶ Adolescent pregnancy is usually unintended, can result in low birthweight infants and preterm delivery, and has an associated higher infant mortality rate.⁷⁻⁹ About 30% of adolescent pregnancies in Nova Scotia result in therapeutic abortion.⁶

Postcoital, or emergency, contraception (EC) has been practised for more than two decades in North America and Europe¹⁰ and has been shown to prevent 75% or more of unwanted pregnancies among users. Oral contraceptive products containing 100 µg of ethinyl estradiol and 0.5 mg of levonorgestrel taken within 72 hours and repeated 12 hours later are used frequently for this purpose in North America.¹¹ The Society of Obstetricians and Gynaecologists of Canada (SOGC)

supports use of the Yuzpe 2+2 regimen (two tablets of ethinyl estradiol/levonorgestrel, with an antiemetic, followed by a second identical dose 12 hours later) for EC.¹²

Small studies in the UK have shown that between 16 and 33% of sexually active adolescents have used EC.^{13,14} A nationwide Finnish study found that 10% of women under the age of 25 had used EC at least once.¹⁵ Women in the U.S. appear to be less informed about EC than those in Europe; only 36% of 1,000 women in a national sample knew that "anything could be done" to prevent pregnancy within a few days of intercourse.¹⁶

We obtained Canadian data on adolescents' knowledge and use of EC in the context of a sexual health promotion initiative, in Amherst, a community of 9,700 in northern Nova Scotia, similar demographically to many other communities in the province.¹⁷

Many of Amherst's adolescents engage in high-risk sexual activity, including lack, or inconsistent use, of contraception.³ A concern of the Amherst Association for Healthy Adolescent Sexuality, a community coalition which is our partner in this research, was that Amherst youth had limited knowledge of, and at times access to, EC. To assess this concern, female adolescents were asked about their knowledge and use of EC as a component of a general sexual health questionnaire administered to students attending Amherst Regional High School. In Amherst schools sexual health education is addressed in grades 7 to 9 (as in the rest of the province), with the contraception component introduced in grade 9. With respect to EC, no efforts have been made to specifically target this issue in Amherst schools.

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This research was supported by the National Health Research and Development Program of Health Canada #6603-1474-201

METHODS

Students completed questionnaires on November 17, 1997. The questionnaire was developed by an interdisciplinary research team, was reviewed by content experts at the provincial and national levels and was pre-tested at another nearby high school. Questions related to knowledge and use of EC were developed in collaboration with Cumberland County Family Planning, located in Amherst and affiliated with Planned Parenthood Nova Scotia. Specifically, students were asked about whether they knew about EC, the time frame in which it should be used, their perceptions of its effectiveness and the potential for harm from EC. In addition, students were asked whether they had ever used EC, whether they had ever attempted to obtain EC and been refused, and from which sources (educational, health services, personal) they had first heard of EC. Questions related to contraception were limited to oral contraception and condoms since we had established from local physicians and pharmacists that use of depo-medroxyprogesterone acetate was very uncommon in the community at the time of the survey, and other forms of contraception are rarely used by this age group.¹⁸ Questionnaires were administered in the classroom setting, supervised by teachers. Students were informed of the anonymity of their responses and of their right not to participate.

For purposes of assessing awareness and perceptions of EC, young women were grouped into sexually and non sexually experienced categories. Since protective behaviours are known to differ between younger and older adolescents,¹⁸ assessment of such behaviours was carried out after dichotomizing participants into younger (ages 14-16) and older (ages 17-19) age groups. Chi-square tests were used to test differences in awareness and perceptions of EC by sexual activity and age group, using Fisher's Exact Test where expected cell sizes were smaller than 5. Data were analyzed using Epi-Info Version 6.04b (Stone Mountain, GA).

RESULTS

Of the 415 female students aged 14 to 19 registered at Amherst Regional High

TABLE I
Proportion (%) of Young Women's Awareness and Perceptions About Emergency Contraception, By Sexual Experience

	All Young Women (n=266)	Sexually Inexperienced Young Women (n=140)	Sexually Experienced Young Women (n=126)
Aware of 72-hour time limit for EC	8	7	9
Perceiving EC as unlikely to harm one's health	27	28	27
Perceiving EC as likely to be effective in preventing pregnancy	51	51	50

TABLE II
Proportion (%) of Young Women First Hearing of Emergency Contraception from Various Sources of Information

Source of EC Information	All Young Women (n=266)	Sexually Inexperienced Young Women (n=140)	Sexually Experienced Young Women (n=126)
Personal Development and Relationships*	42	50	33
Family Studies	2	1	2
Mother/Female Guardian	6	7	6
Father/Male Guardian	1	1	1
Other Family Member	2	1	2
School Teen Health Centre*	3	1	6
Family Doctor	2	2	1
Family Planning	2	0	3
Friend	9	9	8
Boyfriend	0	0	0
TV/Radio	4	4	5
Newspaper/Magazine	14	11	16
Other Source	2	1	3
Unable to Remember	13	12	14

* p<0.05

School at the time of the survey, 4 were refused permission by their parents to participate. Of the remaining 411 registered students, 351 (85%) completed the survey. Two hundred and forty-eight (71%) were in the age group 14-16, and 103 (29%) were in the age group 17-19. The mean age of participants was 15.7 years (sd 1.3). One hundred and fifty-nine (45%) of the young women were sexually experienced (i.e., had had vaginal intercourse at least once).

Of the 351 young women who took part in the survey, 271 (80%) had heard of EC. There was no difference in awareness of EC by sexual experience; 78% of non-sexually experienced and 81% of sexually experienced women were aware of this form of contraception. Almost all of those responding positively to this initial question about awareness of EC (98%) responded to further questions about their personal knowledge and perceptions with

respect to EC (Table I). Fewer than 10% knew the limits of the time frame in which EC could be offered. Only slightly more than 25% of students perceived EC as unlikely to harm health, and only about 50% felt it was likely to be effective in preventing pregnancy.

Overall, the greatest number of young women had heard of EC through their Personal Development and Relationships class, which provides sexual health education in grades 7 through 9 (Table II). However, sexually experienced students were significantly less likely to list PDR classes as the place they first heard about EC ($p<0.01$). The school's teen health centre was more likely to have provided this information to sexually experienced students than to non-sexually experienced students, though small numbers of students had used the centre for this information. Physicians were rarely the source from which young women first learned about EC.

TABLE III
Proportion (%) of Sexually Experienced Young Women Engaging in Specific Contraceptive Behaviours, by Age Group

Sexual Behaviour	Ages 14-16 (n=91)	Ages 17-19 (n=68)
Had intercourse > 2 times in past 2 months*	46	64
Used condom at last intercourse	53	43
Used OCP at last intercourse	51	61
Used dual protection at last intercourse	24	21
Used no protection at last intercourse	20	16
Used EC previously	4	1
Tried previously to obtain EC, but unable to do so	1	3

* $p < 0.05$

Specific sexual and contraceptive behaviours for all sexually experienced women who completed the survey, regardless of whether or not they had heard about EC, are shown by age group in Table III. Condom use was more common in younger women, and use of oral contraception was seen more in older women, though neither of these differences was statistically significant. Slightly more younger women than older women (24% vs. 21%) used dual protection (both condom and oral contraceptive at last intercourse), a non-significant difference. Eighteen percent of young women overall reported using neither condom nor oral contraception at last intercourse. This risky behaviour was occurring in the context of at least moderate levels of sexual activity. More than 50% of these sexually experienced young women overall had had regular intercourse recently, as defined by three or more episodes in the two months prior to the survey, though women in the younger age group were significantly less likely to have this level of sexual activity than older women. When analysis was limited to those with at least this level of sexual activity, lack of protection at last intercourse was virtually unchanged at 17% (data not shown). With respect to use of EC, the younger age group indicated having used EC more than older women. In both groups, small numbers of those who had tried to obtain EC reported having been unable to do so.

DISCUSSION

From a medical perspective, emergency contraception is acceptable and safe, preventing at least 75% of unwanted pregnancies when used properly.¹¹ Most young women in this high school population,

whether sexually experienced or not, were aware of the existence of EC. However, very few of these young women were aware of the 72-hour time limit within which EC must be begun, and only half felt that it was likely to be effective. This suggests that the information they are receiving is incomplete, or that they do not retain information when it is given, possibly because it has no personal relevance for them at the time.¹⁹ Since most students first hear about this important means of pregnancy prevention at school, those responsible for sexual health education should examine this aspect of the curriculum.

An important aspect of the personal relevance of EC to sexually active young women may be whether or not existing services, such as those provided by physicians and hospital outpatient departments, are willing and able to provide EC in ways that are accessible to, and trusted by, young women.²⁰ Though significant numbers of young women reported high levels of unprotected intercourse, very few young women had accessed EC, while some had tried and were unable to do so.

It appears that few young women in this community initially learn about EC as a preventive option from their physicians, a finding compatible with other studies of physician sexual health counselling for adolescents in Nova Scotia.^{21,22} Similarly, preventive counselling about EC has been seen to be limited among those providing health care to adolescents in the U.S.^{16,23} Resistance among health care providers to using EC may be because of confusion with abortion, though it is very unlikely that EC interrupts early pregnancy once implantation has occurred.¹¹ EC guidelines from the Society of Obstetricians and Gynaecologists of Canada (SOGC) should

clarify the approach to EC for practising physicians.^{12,24} In addition to overcoming barriers at the physician level, the SOGC supports the availability of EC without prescription from pharmacies, family planning clinics, emergency rooms, and school health programs.²⁵ This position is supported by recent evidence that removing the barrier of having to obtain EC by prescription results in approximately 30% fewer unwanted pregnancies.²⁶

This research has identified that adolescent women in one Nova Scotia community are not well informed about emergency post-coital contraception, and do not use it frequently, though they are at high risk of experiencing an unintended pregnancy due to lack of, or inconsistent, use of contraception. Though the findings in this single community may not be generalizable, physicians, other health care providers, educators, and policy makers should consider the issues raised here when examining the role of EC for adolescents, whose sexual activity is often sporadic and unplanned.²⁷ Such consideration should include the potential for use of such non-traditional routes as schools, public health units, and emergency rooms for providing EC. These efforts should be accompanied by research to determine the most effective ways to increase adolescents' knowledge and use of an effective and underutilized intervention,²⁸ including study of barriers to contraceptive services and of the effects of interventions targeted at increasing access to emergency contraception specifically.

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Received: April 12, 1999
Accepted: August 17, 1999

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