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College Students' Perceptions of Emergency Contraception Provision

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ABSTRACT

Background and objective: **The authors examined college students' perceptions regarding emergency contraception (EC) provision in light of the then pending U.S. Food and Drug Administration (FDA) decision about the over-the-counter (OTC) status of EC.**

Methods: **We randomly sampled 7000 male and female students who were enrolled full-time at the University of Michigan during the winter 2006 semester. A total of 1585 (22.6%) students responded to our web-based survey and were included in these descriptive analyses.**

Results: **Nearly all (94%) respondents knew of EC. When asked whether EC should be made available OTC, 60% of respondents agreed, 23% disagreed, and 17% were unsure. If EC were to be made available OTC, 34% of respondents indicated that they (or their partner) would purchase EC in advance of need, and 44% stated that they would purchase it only after unprotected sexual intercourse or contraceptive failure. Advance discussion and provision of EC is underused. Only 10% of all female respondents indicated that their current healthcare provider had spoken to them about EC in a routine health visit, and just 5% of female respondents were offered a supply of EC in advance of need.**

Conclusions: **Continued efforts are needed to ensure timely access to EC in this population.**

INTRODUCTION

In the United States, nearly half of all pregnancies are unplanned, leading to 3.1 million unintended pregnancies and 1.3 million abortions annually.[1,2] The highest rates of unintended pregnancy occur in college-age women, with 60% of pregnancies among 20–24-year-olds being unintended.[1] The percentage of unintended pregnancy is even higher among 18–19-year-old women (79%).[1]

Emergency contraception (EC) is a safe and effective postcoital contraceptive method that can reduce the risk of an unintended pregnancy after unprotected sexual intercourse or contraceptive failure by at least 75%–89% if taken within 72 hours of sexual intercourse.[3–5] Recent research suggests that combined EC pills are moderately

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effective even if started between the third and fifth days (up to 120 hours) after unprotected sexual intercourse or contraceptive failure, with effectiveness rates ranging from 72% to 87% in one study.[6,7] EC may operate by inhibiting ovulation or preventing the implantation of a fertilized egg; however, it does not interfere with an established pregnancy.[8] Plan B®, the only Food and Drug Administration (FDA)-approved product dedicated to EC, has been available only by prescription since 1999. Because of the limited time frame for taking EC treatment, there have been numerous efforts to expand access to EC in recent years. Such endeavors have included the following: (1) over 70 organizations signed a Citizen's Petition, submitted to the FDA in 2001, that EC become available over-the-counter (OTC),[9] (2) the Women's Capital Corporation submitted a Supplemental New Drug Application to the FDA in 2003 to change the status of Plan B from prescription-only to OTC status,[10] (3) Planned Parenthood Federation of America encouraged its affiliates to provide prescriptions for EC over the telephone and in advance of need, and (4) selected states allowed EC to be provided directly by pharmacists through collaborative drug therapy agreements.[11]

Efforts to expand EC access from prescription-only to OTC have been under consideration since 2003.[12] Barr Pharmaceutical's (formerly Women's Capital Corporation) Supplemental New Drug Application for Plan B was initially denied in May 2004, despite FDA advisory committee approval, amid FDA safety concerns for adolescents under 17 years of age.[13,14] A revised application, submitted in June 2004, proposed limiting OTC access to Plan B to women ≥17 years of age. Two years later, the FDA approved OTC access to Plan B on August 23, 2006 for adults aged ≥18.[15] It remains prescription-only for minors.

As there is a dearth of published information about individuals' opinions regarding advance provision and OTC access to EC, a study exploring such avenues among an at-risk population prior to the FDA decision was both timely and appropriate. In doing so, this research built on the recent work by Sawyer and Thompson[16] and Corbett et al.[17] that assessed EC knowledge of university students. The purpose of this study was to assess college students' perceptions about EC provision and, in particular, their knowledge of and opinions about OTC access, including whether OTC availability of EC might change their personal birth control practices.

MATERIALS AND METHODS

The University of Michigan Medical School's Institutional Review Board approved this study. A waiver of documentation of informed consent was granted by the Institutional Review Board, and text regarding the consent process was included in the initial e-mail to students. A random sample of 7000 students (both undergraduate and graduate level; 20% of all students) enrolled full-time at the University of Michigan during the winter 2006 semester (January–April 2006) was drawn by the University's Office of the Registrar, who sent an e-mail on our behalf to invite students to participate in a web-based survey through SurveyMonkey (*www.surveymonkey.com*) in April 2006. A reminder e-mail was sent to all 7000 students 1 week later. No financial incentive was offered. We analyzed data from 1585 college students who completed the survey within a 30-day period (response rate 22.6%). The survey system was programmed to allow only one response per person.

The survey instrument included questions about the respondents' knowledge of and beliefs about EC provision. It was estimated to take 5–10 minutes to complete. Background information about EC, such as what it was, how it worked, and time frame for taking it, was provided to all respondents prior to the first question. Next, respondents were asked to complete 11 multiple choice questions about their knowledge of and access to EC. Specific items asked about how they first learned of EC, whether they believed it should be used in cases of rape, contraceptive failure, or unprotected sexual intercourse, respectively, and advance provision. Questions on how the respondents first learned about EC and in what cases EC should be used were adapted from a 2003 Kaiser Family Foundation (KFF) Survey.[18] Respondents were provided with information about the current status of EC provision in Michigan and the potential for OTC access. Four multiple choice questions asked respondents about their awareness of the debate about OTC access, whether they believed that it should be available OTC, and whether OTC availability of EC might change their personal birth control practices. For female respondents, we also inquired about their current interaction with the healthcare system and whether they received information about or a supply of EC in advance of need as part of these visits. The survey concluded with a series of questions to ascertain demographic information about

the study population (e.g., age, gender, race and Hispanic origin classification, undergraduate/graduate status). The survey instrument was pilot tested among a small convenience sample of students and family planning providers, who provided suggestions for refining the instrument that were incorporated into the final version. A copy of the survey instrument is provided in the Appendix. No personal identifying information was collected; thus, individual responses were anonymous.

Frequencies were calculated for all items, and comparisons were made between male and female respondents and by age (17–22 years vs. 23–51 years) about their attitudes toward EC provision. Chi-square tests and Student's *t* tests were performed where appropriate to test for statistical significance ($p < 0.05$). Statistical Analysis Software (SAS) version 9.1 (SAS Institute Inc., Cary, NC) was used for all analyses.

RESULTS

Table 1 describes the characteristics of our study population. The average age of our respondents was 22.5 years. Sixty-six percent of respondents were female, and 60% were undergraduates. The race and Hispanic origin composition of our study population was representative of the broader University of Michigan student population.

Nearly all respondents (94%) said that they had heard of EC prior to receiving the survey. However, 12% indicated that they did not know the longest time window for effectiveness, and 45% of respondents stated that EC must be taken within 3 days or 72 hours after unprotected sexual intercourse or contraceptive failure. Only 5% responded that EC must be taken within 5 days or 120 hours (shown in research studies[6,7,19] to be the longest time window in which EC can be effective). Respondents first learned of EC from a variety of sources, including the media (43%), friends or peers (22%), and school-based curriculum (18%). When students were asked what would be the most effective way to inform their peers and the public about EC, a similar response was given, with 14% of respondents also indicating healthcare providers as a source of information. Nearly three fourths of respondents believed that students were aware of EC as an option.

Table 2 describes the attitudes and beliefs of the respondents about when to use EC, overall

Table 1. Characteristics of Study Population ($N = 1585$)

Characteristics	n	%
Age, years		
Mean ± SD	22.5 ± 4.3	
17–22	947	59.7
23–51	532	33.6
Missing	106	6.7
Sex		
Female	1045	65.9
Male	451	28.5
Missing	89	5.6
Student status		
Undergraduate	957	60.4
Graduate	531	33.5
Missing	97	6.1
Race[a]		
White	1144	72.2
Black/African American	66	4.2
Asian	168	10.6
American Indian/Alaska Native	14	0.9
Native Hawaiian/other Pacific Islander	8	0.5
Other	76	4.8
Missing	109	6.9
Hispanic origin		
Yes	59	3.7
No	1413	89.2
Missing	113	7.1

[a]Percentages add to more than 100% because participants could select more than one category.

Table 2. Attitudes and Beliefs of University Students Regarding Emergency Contraception

Topic	Overall (n = 1585)	By sex: Female (n = 1045)	By sex: Male (n = 451)	p value	By age: 17–22 (n = 947)	By age: 23–51 (n = 532)	p value
Do you approve of the use of EC if a woman was raped?				0.02			0.07
Yes	93.2	94.4	90.5		92.5	94.9	
No	4.1	3.2	6.2		4.4	3.2	
Unsure	2.7	2.4	3.3		3.1	1.9	
Do you approve of the use of EC if a couple used a condom but it broke during sex?				0.02			0.01
Yes	85.8	87.9	81.6		84.9	88.7	
No	9.3	7.2	13.5		9.1	8.3	
Unsure	4.9	4.9	4.9		6.0	3.0	
Do you approve of the use of EC if a couple did not use any protection during sex?				0.32			<0.01
Yes	68.3	70.0	64.7		66.0	73.6	
No	20.2	17.9	24.7		21.5	16.4	
Unsure	11.5	12.1	10.6		12.5	10.0	

and by sex and age. Ninety-three percent of respondents approved of the use of EC in the case a woman was raped. Eighty-six percent approved of its use in the instance of contraceptive failure, but only 68% approved of its use after unprotected sexual intercourse. Female and older students were more likely to approve of the use of EC in each instance, compared with male and younger students, respectively. Results stratified by the respondent's sex were statistically significant for questions about the instance of rape and contraceptive failure, whereas those stratified by the respondent's age were statistically significant for questions about the instance of contraceptive failure and unprotected sexual intercourse and marginally significant in the instance of rape.

Table 3 summarizes the knowledge and opinions of college students about the federal gov-

Table 3. Knowledge and Attitudes of University Students Regarding OTC Access to Emergency Contraception

Topic	Overall (n = 1585)	By sex: Female (n = 1045)	By sex: Male (n = 451)	p value	By age: 17-22 (n = 947)	By age: 23–51 (n = 532)	p value
Were you aware of the over-the-counter debate?				0.01			0.01
Yes	57.5	61.6	48.2		54.1	63.7	
No	42.5	38.4	51.8		45.9	36.3	
Do you think that emergency contraception should be available over-the-counter?				0.45			0.08
Yes	60.2	59.7	61.6		58.5	63.3	
No	22.8	22.9	22.4		23.4	21.1	
Unsure	17.0	17.4	16.0		18.1	15.6	
If emergency contraception were available over-the-counter, which of the following would you do?				0.30			0.08
Purchase in advance of need	33.6	33.4	34.2		35.5	30.0	
Purchase after unprotected sex	44.2	46.1	39.6		43.8	45.8	
Would not purchase	18.7	16.9	22.8		16.7	21.6	
Other	3.5	3.6	3.4		4.0	2.6	

ernment's plans to make EC available OTC. Only 57% of respondents indicated that they were aware of this policy debate prior to receiving the survey. A significantly higher proportion of women and older students were aware of the debate, in comparison to men and younger students, respectively. More than half of respondents (60%) believed that EC should be available OTC. However, nearly one quarter (23%) disagreed, and 17% were unsure. When asked what they would do if EC was available OTC, 33% of respondents indicated that they would purchase a supply in advance of need, and 44% responded that they would purchase a supply after unprotected sex. Nineteen percent of respondents stated that they would not purchase EC.

Overall, only 10% of all female respondents indicated that their current healthcare provider had spoken to them about EC in a routine visit, and just 5% of female respondents were offered a supply in advance of need. Nearly 1 in 4 female respondents indicated that they do not currently receive routine gynecological care. Among the 346 female respondents who responded that they would purchase a supply in advance of need if EC were to become available OTC, only 15% indicated that their healthcare provider had spoken to them about it during a routine office visit, and approximately 7% were offered a supply in advance of need.

DISCUSSION

Although EC is now available OTC to individuals aged ≥18 years, there remains a critical need for continued health education about EC. Previous studies on EC knowledge and use show that although the general public and university students have heard of EC, they generally lack sufficient knowledge about what it is, how it works, and how to access it.[16–18,20] Our findings are comparable to this body of research. Whereas OTC availability of EC may allow for increased access, its success is linked to the dissemination of accurate information about EC via trusted informational sources, such as family, friends, healthcare providers, and the media. One challenge in educating college students and other young adults about EC is the identified lack of information about EC shared by healthcare providers with this population. The challenge to healthcare providers is to increase awareness and use of such preventive services.[21,22] Although increasing the number of women who take postcoital contraception is not likely to reduce risky sexual behaviors, it may reduce the number of unwanted pregnancies and abortions that occur each year in the United States.

Our findings on awareness and knowledge about EC are comparable to those of other studies that included a college student population.[16,17] Sawyer and Thompson[16] reported that nearly 86% of their undergraduate respondents stated that they had heard about EC, but the majority indicated that their perceived knowledge was low. Similarly, Corbett et al.[17] indicated that 96% of respondents (college students aged 18–21 years) stated that they had heard about EC, but only 18% had previously discussed EC with their healthcare provider.[17]

Our findings regarding gender differences in EC decision making were different from those presented by Corbett et al.,[17] who reported that 67% of their female respondents and only 46% of their male respondents stated that they would be likely to use (or recommend) EC in the event of contraceptive failure. In our study, whereas female respondents (88%) were more likely than male respondents (82%) to approve of the use of EC in the event of contraceptive failure, 86% of respondents overall approved of its use in this instance.

There were some limitations to this study that may limit the validity of our findings. The results of our study are dependent on the accuracy of our participants' responses. Our study population consisted of a random sample of students who were enrolled full-time at the University of Michigan. Thus, our findings may not reflect the opinions of all U.S. college students. Our survey response rate (22.6%) was lower than anticipated. As information on nonresponders was not available to the research team, we can only speculate as to why some students chose not to respond to the survey. Such factors as the timing of survey administration (a few weeks prior to the end of the semester), the subject matter of the survey, and the lack of an incentive may have contributed to the response rate we achieved.

CONCLUSIONS

Advance discussion and provision of EC is underused. Because of the higher risk for an un-

planned pregnancy with unprotected sexual intercourse or contraceptive failure among college women, continued efforts are needed to enhance timely access to EC in this population. Findings from this study suggest that there are multiple avenues from which to educate young adults about EC. Healthcare providers and health educators would be invaluable resources for informing campus communities about EC and its OTC availability and for reinforcing ongoing health communication campaigns in the popular press.

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REFERENCES

1. Finer LB, Henshaw SK. Disparities in rates of unintended pregnancy in the United States, 1994 and 2001. Perspect Sex Reprod Health 2006;38:90.
2. Raine TR, Harper CC, Rocca CH, et al. Direct access to emergency contraception through pharmacies and effect on unintended pregnancy and STIs: A randomized controlled trial. JAMA 2005;293:54.
3. Camp SL, Wilkerson DS, Raine TR. The benefits and risks of over-the-counter availability of levonorgestrel emergency contraception. Contraception 2003;68:309.
4. Croxatto HB, Brache V, Pavez M, et al. Pituitary-ovarian function following the standard levonorgestrel emergency contraceptive dose or a single 0.75 mg dose given on the days preceding ovulation. Contraception 2004;70:442.
5. Grimes DA, Raymond EG. Emergency contraception. Ann Intern Med 2002;137:180.
6. Rodrigues I, Grou F, Joly J. Effectiveness of emergency contraception pills between 72 and 120 hours after unprotected sexual intercourse. Am J Obstet Gynecol 2001;184:531.
7. Ellertson C, Evans M, Ferden S, et al. Extending the time limit for starting the Yuzpe regimen of emergency contraception to 120 hours. Obstet Gynecol 2003;101:1168.
8. Glassier A. Emergency postcoital contraception. N Engl J Med 1997;337:1058.
9. Grimes DA. Switching emergency contraception to over-the-counter status. N Engl J Med 2002;347:846.
10. Zernike K. National briefing, health and science: Morning-after pill. New York Times. April 22, 2003. Available at *query.nytimes.com/gst/fullpage.html?res=9C02EFD6103AF931A15757C0A9659C8B63* Accessed December 7, 2006.
11. The Henry J. Kaiser Family Foundation. Emergency contraception. November 2005. Available at *www.kff.org/womenshealth/upload/3344-03.pdf* Accessed December 7, 2006.
12. Guttmacher Institute. State policies in brief: Emergency contraception. May 2007. Available at *www.guttmacher.org/statecenter/spibs/spib_EC.pdf* Accessed May 14, 2007.
13. Krisberg K. Panel favors providing emergency contraception without a prescription. The Nation's Health, 2004. Available at *www.apha.org/tnh/index.cfm?fa=ADetail&ID=633* Accessed December 7, 2006.
14. Krisberg K. FDA rejects over-the-counter emergency contraception sales: Reproductive rights march draws crowd. The Nation's Health, 2004. Available at *www.apha.org/tnh/index.cfm?fa=ADetail&ID=411* Accessed December 7, 2006.
15. U.S. Food and Drug Administration. FDA approves over-the-counter access for Plan B for women 18 and older: Prescription remains required for those 17 and under, 2006. Available at *www.fda.gov/bbs/topics/NEWS/2006/NEW01436.html* Accessed December 7, 2006.
16. Sawyer RG, Thompson E. Knowledge and attitudes about emergency contraception in university students. College Student J 2003;37:523.
17. Corbett PO, Mitchell CP, Taylor JS, Kemppainen J. Emergency contraception: Knowledge and perceptions in a university population. J Am Acad Nurse Pract 2006;18:161.
18. The Henry J. Kaiser Family Foundation. Emergency contraception in California: Findings from a 2003 Kaiser Family Foundation Survey. Menlo Park, CA: Kaiser Family Foundation, 2004.
19. Trussell J, Ellertson C, Stewart F, Raymond EG, Shochet T. The role of emergency contraception. Am J Obstet Gynecol 2004;190:S30.
20. Harper CC, Ellertson CE. The emergency contraceptive pill: A survey of knowledge and attitudes among students at Princeton University. Am J Obstet Gynecol 1995;173:1438.
21. Brening RK, Dalve-Endres AM, Patrick K. Emergency contraception pills (ECPs): Current trends in United States college health centers. Contraception 2003;67:449.
22. Miller LM, Sawyer RG. Emergency contraceptive pills: A 10-year follow-up survey of use and experiences at college health centers in the mid-Atlantic United States. J Am College Health 2006;54:249.

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APPENDIX: WEB-BASED SURVEY INSTRUMENT

Section I-Knowledge & Access

There are several methods of contraception (birth control) currently available, such as birth control pills, condoms, diaphragms, and Depo-Provera®. In some instances, a couple may need a method of contraception after unprotected sexual intercourse or in cases of contraceptive failure (for example: if a condom breaks). Emergency contraception (sometimes called the "morning after pill" or Plan B®) is one such contraceptive option and is thought to prevent a pregnancy by delivering hormones that delay ovulation, inhibit fertilization, and/or change the endometrial lining of the uterus. Emergency contraception does not abort an established pregnancy.

The following questions ask you about your knowledge and opinions about pills used for emergency contraception.

1. Prior to this survey, had you ever heard of emergency contraception?
   - ☐ Yes
   - ☐ No → [Skip to question 4]

2. How did you first learn about emergency contraception? *(Please check one box only)*
   - ☐ Friends/peers
   - ☐ Family
   - ☐ Healthcare provider (for example: doctor or nurse)
   - ☐ School-based curriculum or presentation
   - ☐ Media (television, magazines, Internet)
   - ☐ Other (*Please specify* [rule])

3. Though emergency contraception works best immediately after unprotected sexual intercourse or contraceptive failure, what is the longest window of time that this option can effectively be used to prevent pregnancy?
   - ☐ 1 day (24 hours)
   - ☐ 2 days (48 hours)
   - ☐ 3 days (72 hours)
   - ☐ 5 days (120 hours)
   - ☐ I do not know.

4. In general, do you think students are aware that emergency contraception is an option for preventing a pregnancy after unprotected sexual intercourse or contraceptive failure?
   - ☐ Yes
   - ☐ No

5. What do you think would be the most effective way to inform other students and the general public about emergency contraception? *(Please check one box only)*
   - ☐ Friends/peers
   - ☐ Family
   - ☐ Healthcare provider (For example: doctor or nurse)
   - ☐ School-based curriculum/presentations
   - ☐ Media (television, magazines, Internet)
   - ☐ Other (*Please specify* _____)

6. People have a variety of views about the use of emergency contraception. In your opinion, do you approve of its use in the following situations?

If a woman was raped?	☐ Yes	☐ No	☐ Unsure
If a couple used a condom but it broke during sex?	☐ Yes	☐ No	☐ Unsure
If a couple did not use any protection during sex?	☐ Yes	☐ No	☐ Unsure

7. If you or your partner wanted to use emergency contraception, do you know where you could get it?
   ☐ Yes
   ☐ No → [Skip to question 10]

8. While in Ann Arbor, where would you get it?

   _____

9. Outside of Ann Arbor, where would you get it?

   _____

10. Has your current healthcare provider spoken to you about emergency contraception during a routine office visit?
    ☐ Yes
    ☐ No
    ☐ Unsure

11. Because emergency contraception is optimally effective immediately following unprotected sexual intercourse or contraceptive failure, some healthcare providers recommend having a supply "on hand" to have available in case of need. Has your current healthcare provider offered this option to you?
    ☐ Yes
    ☐ No
    ☐ Unsure

Section II-Over-the-Counter Access

In Michigan, emergency contraception is only available by doctor's prescription (although in a few other states, women can obtain emergency contraception from pharmacists without a doctor's prescription). Recently, legal action at the federal level has been sought to make emergency contraception available over-the-counter (like Advil® or Tylenol®).

12. Prior to this survey, were you aware of the current discussion about making emergency contraception available over-the-counter, without a doctor's prescription?
    ☐ Yes
    ☐ No

13. Do you think it should be available over-the-counter rather than by prescription only?
    ☐ Yes
    ☐ No
    ☐ Unsure

14. If emergency contraception were made available over-the-counter, would it change your routine birth control practices?
    ☐ Yes
    ☐ No
    ☐ Unsure
    ☐ Not applicable

15. If emergency contraception were made available over-the-counter, which of the following would you do? *(Please check one only)*
    ☐ I (or my partner) would buy a supply over-the-counter and keep it on hand in case of need.

- ☐ I (or my partner) would buy emergency contraception only after an instance of unprotected sex or contraceptive failure occurred.
- ☐ I (or my partner) would not buy emergency contraception.
- ☐ Other (*Please specify* _____)

Section III-Demographics

16. Please fill in your current age.

_____

17. What is your gender?
    - ☐ Female
    - ☐ Male → [Skip to question 19]

18. Where do you currently go for routine gynecological care (for example, an "annual exam" or Pap smear)?
    - ☐ University of Michigan University Health Service (UHS)
    - ☐ University of Michigan Health System
    - ☐ Planned Parenthood®
    - ☐ Private physician
    - ☐ Other (*Please specify* _____)
    - ☐ I do not routinely receive gynecological care.

19. What is your race? *(Select all that apply)*
    - ☐ White
    - ☐ Black or African American
    - ☐ Asian
    - ☐ American Indian or Alaska Native
    - ☐ Native Hawaiian or Other Pacific Islander
    - ☐ Other (*Please specify* _____)

20. Are you of Hispanic or Latino origin?
    - ☐ Yes
    - ☐ No

21. What is your current student status at the University of Michigan?
    - ☐ Undergraduate student
    - ☐ Graduate student

22. What school or college are you currently enrolled in at the University of Michigan?

_____

23. What is your home state or country?

_____

24. Comments?

_____

Thank you for your participation in this survey! All responses will be kept confidential.