Original Research Article in *Fertility and Sterility* – Author Version

Emergency contraception use and counseling after changes in United States prescription status

Megan L. Kavanaugh, DrPH, MPH[1]; Sanithia L. Williams, BS[2];
E. Bimla Schwarz, MD, MS[3]

[1] Guttmacher Institute, New York, New York
[2] Institute for Clinical Research Education, University of Pittsburgh, Pittsburgh, Pennsylvania
[3] Center for Research on Health Care, Division of General Internal Medicine, Department of Medicine, University of Pittsburgh, Pittsburgh, Pennsylvania

Received January 19, 2011; revised February 16, 2011; accepted March 5, 2011.
Volume 95, Issue 8 , Pages 2578-2581, 30 June 2011
doi:10.1016/j.fertnstert.2011.03.011

Abstract available from *Fertility and Sterility* here.

M.L.K. has nothing to disclose. S.L.W. has nothing to disclose. E.B.S. has nothing to disclose.

Funding: Dr. Schwarz was supported by the National Institute of Child Health and Human Development (K23 HD051585). Ms. Williams was supported by a grant from the Doris Duke Charitable Foundation to the University of Pittsburgh.

Reprint requests: Megan L. Kavanaugh, Dr.P.H., M.P.H., Senior Research Associate, Guttmacher Institute, 125 Maiden Lane, 7th Floor, New York, NY 10038 (E-mail: mkavanaugh@guttmacher.org).

Abstract
Analysis of data from the 2006–2008 National Survey of Family Growth indicates that use of emergency contraception in the United States has increased after changes in its prescription status in 2006. However, clinicians continue to play a pivotal role in ensuring that women have accurate information about emergency contraception.

Key Words: Emergency contraception (EC), contraceptive counseling, National Survey of Family Growth

Despite continued efforts to improve access to effective methods of contraception, the United States has one of the highest rates of unintended pregnancy among industrialized nations (1). For many U.S. women who are at high risk of unintended pregnancy, access to healthcare and prescription medications is limited (2, 3). For this reason, many reproductive health leaders (4, 5) and professional organizations (6) advocated that U.S. women be granted access to emergency contraception (EC) without a prescription. However, political interference delayed U.S. Food and Drug Administration (FDA) approval of behind-the-counter status of levonorgestrel EC (7) for those aged ≥18 years for almost 3 years, from December 2003 until August 2006.

Although several prominent medical organizations have recommended incorporating counseling about EC into routine clinical care for reproductive-age women (8–11), these recommendations have not been universally implemented (12, 13). A 2008 survey of U.S. obstetrician/gynecologists found that approximately one-half (51%) offer EC to all women (12). Only 4% of women who had received either a Pap test or pelvic examination in the past year reported that they received counseling about EC in 2002 (13). Not surprisingly, in 2002, only 4% of U.S. women who had ever had sex with a man reported having ever used EC (13).

The present study aimed to estimate the prevalence of counseling about and use of EC in the United States since FDA approval of behind-the-counter access to EC and to describe the relationship between receipt of counseling, use of EC, and women's demographic and reproductive health characteristics.

Data were drawn from the 2006–2008 National Survey of Family Growth's (NSFG) female respondent questionnaire, a representative sample of 7,356 U.S. women aged 15–44 years in the civilian noninstitutionalized household population. Respondents completed face-to-face interviews using computer-assisted personal interviewing methods to collect information on a broad range of sexual and reproductive health topics. Detailed information on the survey methodology, as well as on the sampling design, estimation procedures and variance estimation, has been published elsewhere (14, 15).

In this study, we examined all variables associated with EC and all demographic and reproductive health data collected by the 2006–2008 NSFG. All respondents were considered to be potential recipients of EC counseling; all those who reported ever having had sexual intercourse with a man were considered potential users of EC. In addition, we examined receipt of EC counseling among the subgroup of women who had received a Pap test or pelvic examination in the past year. Because the NSFG has recently transitioned to continuous data collection, we accounted for changes to the questionnaire that occurred in each of the 3 years of data collection (14, 15).

We used simple logistic regression to examine categoric predictors of two outcomes of interest: receipt of EC counseling in the past year and ever-use of EC. Variables that were significant at $P<.05$ in bivariate analyses were entered into two multivariable logistic regression models. For each outcome, we used backward stepwise regression and eliminated variables that were not significant at $P>.1$. All analyses were conducted using the survey function within Stata version 11.1 (Statacorp, College Station, TX) to account for weighting necessary for the NSFG's use of a multistage probability sample. This study was approved by the Institutional Review Board of the University of Pittsburgh.

Of the 7,356 women interviewed for the 2006–2008 NSFG, 7,353 were potential recipients of EC counseling and 6,329 were potential EC users. Details of the demographic characteristics of the sample have been published elsewhere (16).

Only 3% of respondents indicated that they had received counseling about EC in the past year. Among the 63% of women who reported having received a Pap test or pelvic examination in the past 12 months, 4% reported receipt of counseling about EC. Overall, 9.7% of respondents who reported ever having had sex with a male partner said that they had ever used EC, regardless of whether they had received counseling about EC.

Among respondents who had received EC counseling in the past year and had visited a health care provider during this time, 43% had received counseling about EC from a family planning or Planned Parenthood clinic. The second and third most commonly reported sites for receiving EC counseling in the past year were community health clinics (26%) and private physicians' offices (16%).

Two-thirds of EC users (68%) indicated that the last time they had used EC, they had obtained it without a prescription. The majority of EC users (61%) had used it only once. Nearly one-half of EC users (49%) attributed their use to nonuse of any other form of birth control; fewer (39%) reported use due to a worry that their regular method had not worked.

In bivariate analyses (Table 1), women in the following subgroups had increased odds of both having received EC counseling in the past year and having ever used EC: aged 18–29, never married, had a previous abortion, intended to have a(nother) child, had ever used the pill, patch, or ring, and had received a Pap test or pelvic examination in the past year.

Most patterns observed at the bivariate level were replicated in multivariable analyses, with a few notable exceptions. After controlling for select demographic and reproductive health characteristics, women aged ≥30 years were less likely than woman aged 15–17 years (odds ratio [OR] 0.24, 95% confidence interval [CI] 0.09–0.69), and women who experienced coitarche at ≥21 years were more likely than women experiencing sexual debut at <16 years (OR 2.03, 95% CI 1.04–3.96) to have received EC counseling in the past year. Gravidity was no longer associated with receipt of EC counseling at the multivariable level. Women who had more than one lifetime partner had increased odds of having ever used EC (OR 1.83, 95% CI 1.13–2.96). Receipt of EC counseling in the past year was still associated with significantly increased odds of having ever used EC (OR 8.27, 95% CI 4.88–13.99).

The number of U.S. women reporting that they have ever used EC has more than doubled since 2002 (13), increasing from 4.2% to 9.7%. Since the 2006 FDA approval of nonprescription access of EC for women and men aged ≥18, pharmacy availability of EC has increased (17). However, the recent increase in EC use is likely largely due to publicity surrounding the EC status change beginning in 2006, because the estimate of counseling about EC received by women who had received a Pap test or pelvic examination in the previous 12 months was relatively unchanged from 2002 (13).

Interestingly, as was seen before expanded access to EC (13), counseling continues to be one of the strongest predictors of use of EC. Unfortunately, counseling about EC remains disappointingly low. Although clinicians are often challenged by the need to prioritize a range of preventive health interventions (18), the majority of U.S. women at risk for unplanned pregnancies rely on health professionals for contraceptive information (19). As a result of the poor incorporation of EC counseling into routine visits, women's knowledge about how to obtain and use EC, as well as its safety and efficacy, has been inadequate (20–22). Alternative methods of informing women about EC, such as a mass media campaign with accompanying information hotline (23) or a community outreach educational campaign (24), may therefore warrant further consideration.

Several limitations are inherent in the analysis of cross-sectional data. No temporal relationship can be established between variables, rendering interpretation of some of these findings challenging. For example, it is impossible to determine whether counseling preceded or followed use. Furthermore, women who had used EC may have been more likely than never-users to remember having been counseled about it; the potential effects of social desirability bias must also be considered (25). Additionally, abortion statistics in nationally representative data sets, including the NSFG, should be interpreted with caution owing to high levels of underreporting (26).

Finally, although exclusion of 2006 data would be optimal to assess the impact of the August 2006 status change on EC, we did not split the data by years, as recommended by the NSFG (27), to avoid large standard errors. However, because our analyses incorporate some months of data before the EC status change, it is likely that our estimates underestimate the impact of the policy change.

To the best of our knowledge, this study provides the most current national data on receipt of counseling about and use of EC. However, several societal changes have occurred since the conclusion of the 2006–2008 NSFG that will likely affect use of EC in the United States in the future: the 2009 expansion of behind-the-counter EC access to age 17 years, the 2009 FDA approval of the dedicated EC product Plan B One-Step, and the 2010 FDA approval of the more effective EC product Ella (28). Although EC has yet to significantly affect U.S. rates of unintended pregnancy or abortion (29, 30), the findings of this study provide hope that slow progress is being made. Provision of counseling about EC remains an integral part of providing comprehensive family planning services. However, recognizing that a significant proportion of women who use EC do so because of contraceptive failure or because they were not using any other form of contraception, efforts to increase use of EC must be balanced with efforts to increase the use of more effective contraceptives.

References

1. Singh S, Wulf D, Hussain R, Bankole A, Sedgh G. Abortion worldwide: a decade of uneven progress. New York: Guttmacher Institute, 2009.

2. Sonfield A. Preventing unintended pregnancy: the need and the means. New York: Guttmacher Institute, 2003.

3. Nearns J. Health insurance coverage and prescription contraceptive use among young women at risk for unintended pregnancy. Contraception 2009;79:105–10.

4. Grimes DA. Emergency contraception and fire extinguishers: a prevention paradox. Am J Obstet Gynecol 2002;187:1536–8.

5. GrimesDA, Raymond EG, Scott JonesB. Emergency contraception over-the-counter: the medical and legal imperatives. Obstet Gynecol 2001;98:151–5.

6. Association of Reproductive Health Professionals. ARHP sign-on letter: switch status of emergency contraceptive from Rx to OTC 2003. Available at: http://www.arhp.org/uploadDocs/ec_signon.pdf. Retrieved October 27, 2010.

7. Wood AJ, Drazen JM, Greene MF. A sad day for science at the FDA. N Engl J Med 2005;353:1197–9.

8. American College of Obstetricians and Gynecologists. ACOG practice bulletin: emergency oral contraception. No. 25, March 2001. Int J Gynaecol Obstet 2002;78:191–8.

9. Gold MA, Sucato GS, Conard LA, Hillard PJ. Provision of emergency contraception to adolescents. J Adolesc Health 2004;35:67–70.

10. American Academy of Pediatrics. Policy statement on emergency contraception. Pediatrics 2005;116: 1026–35.

11. International Planned Parenthood Federation. International Medical Advisory Panel statement on emergency contraception. IPPF Med Bull 2004;16:489–98.

12. Lawrence RE, Rasinski KA, Yoon JD, Curlin FA. Obstetrician-gynecologist physicians' beliefs about emergency contraception: a national survey. Contraception 2010;82:324–30.

13. Kavanaugh ML, Schwarz EB. Counseling about and use of emergency contraception in the United States. Perspect Sex Reprod Health 2008;40:81–6.

14. Groves RM, Mosher WD, Lepkowski JM, Kirgis NG. Planning and development of the continuous National Survey of Family Growth. Vital Health Stat 2009;1(48):1–64.

15. Lepkowski JM, Mosher WD, Davis KE, Groves RM, Van Hoewyk J. The 2006–2010 National Survey of Family Growth: sample design and analysis of a continuous survey. Vital Health Stat 2010;2(150):1–36.

16. Mosher WD, Jones J. Use of contraception in the United States: 1982–2008. Vital Health Stat 2010;23(29):1–44.

17. Gee RE, Shacter HE, Kaufman EJ, Long JA. Behind-the-counter status and availability of emergency contraception. Am J Obstet Gynecol 2008;199:478.e1–5.

18. Yarnall KS, Pollak KI, Ostbye T, Krause KM, Michener JL. Primary care: is there enough time for prevention? Am J Public Health 2003;93:635–41.

19. Delbanco SF, Mauldon J, Smith MD. Little knowledge and limited practice: emergency contraceptive pills, the public, and the obstetrician gynecologist. Obstet Gynecol 1997;89:1006–11.

20. Schwarz EB, Reeves MF, Gerbert B, Gonzales R. Knowledge of and perceived access to emergency contraception at two urgent care clinics in California. Contraception 2007;75:209–13.

21. Ahern R, Frattarelli LA, Delto J, Kaneshiro B. Knowledge and awareness of emergency contraception in adolescents. J Pediatr Adolesc Gynecol 2010;23:273–8.

22. Chuang C, Freund K. Emergency contraception knowledge among women in a Boston community. Contraception 2005;71:157–60.

23. Trussell J, Koenig J, Vaughan B, Stewart F. Evaluation of a media campaign to increase knowledge about emergency contraception. Contraception 2001;63:81–7.

24. Gee RE, Delli-Bovi LC, Chuang CH. Emergency contraception knowledge after a community education campaign. Contraception 2007;76:366–71.

25. Stuart GS, Grimes DA. Social desirability bias in family planning studies: a neglected problem. Contraception 2009;80:108–12.

26. Fu H, Darroch JE, Henshaw SK, Kolb E. Measuring the extent of abortion underreporting in the 1995 National Survey of Family Growth. Fam Plann Perspect 1998;30:128–38.

27. U.S. Department of Health and Human Services. Public use data file documentation, Continuous National Survey of Family Growth 2006–2008 user's guide 2010. Available at: http://www.cdc.gov./NCHS/data/nsfg/NSFG_2006–08_UserGuide_MainText.pdf. Retrieved September 8, 2010.

28. Fine P, Mathe H, Ginde S, Cullins V, Morfesis J, Gainer E. Ulipristal acetate taken 48–120 hours after intercourse for emergency contraception. Obstet Gynecol 2010;115(2 Pt 1):257–63.

29. Polis CB, Schaffer K, Blanchard K, Glasier A, Harper CC, Grimes DA. Advance provision of emergency contraception for pregnancy prevention (full review). Cochrane Database Syst Rev 2007;(2): CD005497.

30. Raymond EG, Trussell J, Polis CB. Population effect of increased access to emergency contraceptive pills: a systematic review. Obstet Gynecol 2007;109:181–8.

TABLE 1: Percentage distribution of U.S. women ages 15-44 in 2006-2008 who received counseling about emergency contraception (EC) in the past year and who have ever used EC, by selected demographic and reproductive characteristics

	Total	Received counseling about EC in past year		Ever used EC	
	(N=7356)	(N = 7356)		(N = 6329)	
	%[a]	Prevalence (%)	Odds Ratio	Prevalence (%)	Odds Ratio
All		3.0		9.7	
Demographic characteristics					
Age					
15-17	9.4	2.6	referent	8.2	referent
18-24	23.8	5.1	2.03**	18.4	2.53***
25-29	16.6	4.8	1.91*	14.6	1.92*
>= 30	50.2	1.6	0.6	5.0	0.59
Race					
White	73.3	2.7	referent	10.2	referent
Black	15.5	3.0	1.11	7.2	0.68**
Other	11.3	4.8	1.77*	9.8	0.95
Ethnicity					
Non-Hispanic	83.2	2.5	referent	9.5	referent
Hispanic	16.8	5.6	2.31***	11.0	1.18
Marital status					
Never married	43.7	1.6	referent	5.7	referent
Ever married	56.4	4.1	2.58***	13.9	2.69***
Education					
Less than high-school	23.0	3.1	referent	7.4	referent
High school graduate	51.8	3.3	1.05	9.9	1.38*
College graduate	25.2	2.4	0.76	10.8	1.51*
Work status					
Not working	32.3	2.7	referent	8.2	referent
Working part-time[b]	25.6	4.1	1.53*	10.8	1.35
Working full-time	42.2	2.7	0.99	10.1	1.25

Poverty level					
<100%	22.0	3.4	referent	7.4	referent
100-499%	69.0	2.8	0.81	9.7	1.36
≥500%	9.1	3.6	1.03	14.8	2.18**
Religion					
None	16.7	2.5	referent	14.9	referent
Catholic	24.9	3.9	1.58	9.1	0.57**
Protestant	47.8	2.8	1.1	8.2	0.51***
Other	10.7	2.9	1.15	9.7	0.61
Reproductive health characteristics					
Number of pregnancies					
0	37.3	4.0	referent	15.2	referent
1--4	54.6	2.2	0.55*	7.9	0.48***
>4	8.1	3.8	0.95	6.1	0.36***
Number of lifetime male partners					
0	13.9	1.1	referent	5.2	N/A
1	21.4	3.5	3.10**	11.2	referent
>1	64.7	3.3	2.91**	9.7	0.44***
Abortion history[c]					
Never	80.7	1.9	referent	5.2	referent
Ever	19.3	4.6	2.47**	18.0	4.04***
Age at first sexual intercourse[d]					
<16	26.7	4.1	referent	10.7	referent
16-20	58.7	2.7	0.64*	10.8	1
>20	14.6	4.5	1.09	3.6	0.32***
Number of births					
0	43.5	4.1	referent	16.2	referent
1or 2	37.5	2.5	0.60*	8.0	0.45***
>2	19.1	1.6	0.38**	3.1	0.17***
Intention for additional births					
No more	51.3	1.8	referent	5.8	referent
More	48.7	4.3	2.38***	15.0	2.87***

Condom[d]					
Never	7.0	3.0	referent	2.1	referent
Ever	93.0	3.4	1.14	10.3	5.43***
Pill, patch, ring – combination hormones					
Never	25.8	2.0	referent	7.2	referent
Ever	74.2	3.4	1.67*	10.2	1.46*
Long-acting contraceptive methods[e]					
Never	91.1	3.0	referent	9.7	referent
Ever	8.9	3.0	0.98	9.7	1
Received Pap or pelvic examination in past year					
No	36.8	1.0	referent	6.7	referent
Yes	63.2	4.2	4.23***	10.9	1.70**
Receipt of EC counseling past year[c]					
No	97.0	0.0	n/a	8.5	referent
Yes	3.0	100.0		46.3	9.32***
Use of EC[d]					
Never	90.3	2.0	referent	0.0	n/a
Ever	9.7	15.8	9.32***	100.0	

* Significant at alpha < 0.05. ** Significant at alpha < 0.01. *** Significant at alpha < 0.001.

a Weighted to reflect the U.S. female civilian noninstitutional population of the United States.

b Includes part-time workers and workers on temporary leave from full-time work for disability, illness, or maternity reasons.

c Due to missing data, denominators for abortion history and receipt of EC counseling in the past year are 4431 and 7353, respectively.

d Age at first sex, condom use and EC use are measured out of all respondents who reported ever having sexual intercourse with a male, N = 6329.

e Includes use of an implant (Implanon or Norplant), or an intrauterine device and/or system (ParaGard or Mirena).

Notes: EC, emergency contraception