

## Physicians' Intention to Educate About Emergency Contraception

Patricia J. Kelly, PhD; Marjorie R. Sable, DrPH, MSW; Lisa R. Schwartz, MSPH; Eleanor Lisbon, MD; Matthew A. Hall, PhD

**Background and Objectives:** *Our objective was to examine the intention of academic primary care physicians to educate women about emergency contraception (EC) and whether differences in their intention varies with patient situation, knowledge and attitudes about EC, gender, or specialty. **Methods:** As part of a larger cross-sectional survey about intention to prescribe EC with 96 faculty physicians from one Southern and three Midwestern universities, we analyzed factors associated with intention to educate patients about EC. Physicians were from departments of family medicine, obstetrics-gynecology, and pediatrics. **Results:** The main outcome variable was intention to educate about EC. Attitudes and perceived peer expectations on educating about EC predicted physicians' intentions to provide EC education to their patients. Neither knowledge about EC nor physician demographics predicted intention to educate. Almost one in five respondents were reluctant to provide education to sexually active adolescents. Physicians who had high intention to educate were more likely than others to believe that educating about EC enhances a woman's reproductive options and that EC education reduces unintended pregnancy and abortion. Providers with low intention to educate were more likely to consider EC education to be inconvenient and to take too much clinic time. **Conclusions:** To maximize training programs, physicians' attitudes, beliefs, and professional expectations should be examined when designing and initiating educational interventions.*

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After several years in political limbo with the US Food and Drug Administration, emergency contraception (EC) in the form of Plan B recently received approval for over-the-counter (OTC) sale to persons over the age of 18.<sup>1</sup> A large part of the policy debate now shifts to ensuring that women have knowledge of and access to Plan B. Ideally, women's knowledge about Plan B will increase as a result of both patient advertising by the manufacturer and education by health care providers.

Information about post-coital contraception has been available to women's health providers since 1974, when Yuzpe described the contraceptive effectiveness of taking two doses of combined estrogen/progestin contraceptive pills as a "morning after" pill.<sup>2</sup> Many physicians, however, remained unaware about EC

until the mid-1990s.<sup>3</sup> Knowledge among health care providers increased with the introduction of Preven in 1998 and Plan B in 1999, products targeted specifically at post-coital contraception.<sup>4-5</sup> Despite this gain in professional awareness, women's knowledge about and ready access to EC still varies, with many women and men still lacking knowledge about the existence of post-coital contraception.<sup>6-8</sup>

Previous studies have described physician knowledge and prescribing practices about EC and their demographic correlates.<sup>4,5,7,9-11</sup> While the shift of Plan B to OTC status makes physician prescribing practices less critical for adult women, physicians' intentions to educate women of all ages about this method remains an important issue. In this paper, we examine physicians' intentions to educate their sexually active female patients of childbearing age about EC. We extracted data from a study analyzing intention to prescribe EC and analyzed the relationship of physicians' practice variables, knowledge, attitudes, and peer expectations with their intention (high, medium, and low) to educate patients about EC.

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From the School of Nursing, University of Missouri-Kansas City (Dr Kelly); School of Social Work, University of Missouri-Columbia (Dr Sable); University of Missouri-Columbia (Ms Schwartz); Department of Family Medicine, University of Kansas (Dr Lisbon); and Child Health Corporation of America (Dr Hall).

## Methods

We conducted a cross-sectional, written survey of faculty physicians at three university teaching hospitals in the Midwest and one university teaching hospital in the South to determine the influence of attitude, perceived social norms, and knowledge of and intention to prescribe and to educate about EC. The theoretical framework and results of the intention to prescribe analysis are reported elsewhere.<sup>12</sup> Eligible study participants were faculty from primary care departments (family medicine, obstetrics-gynecology, and pediatrics). All physician faculty members who saw women of childbearing age were asked to participate via direct request from investigators or through surveys left in office mailboxes. The Institutional Review Boards approved the study at all four universities with a waiver of written consent.

### Instrument

The instrument was developed through interviews with clinicians. The goal of the original survey was to examine physician intention to prescribe EC. Anticipating change in EC status to OTC, we included intention to educate patients about EC as an additional outcome variable. Key questions on EC knowledge are listed in Table 1, on beliefs about educating about EC in Table 2, and on intention to educate on EC in Table 3. The dependent variable for the study, physician intention to educate patients about EC, was assessed by a composite score of responses to questions describing five clinical

situations in which education about EC might be appropriate. Each situation was answered with a 7-point Likert scale format ranging from 1 (not at all) to 7 (very much), and possible total scores ranging from 5–35.

The main independent variables were attitude toward educating about EC, the physicians' perceived peer expectations about educating women about EC, and knowledge about EC. Attitude was evaluated by the sum of three items on a Likert-type scale (range of +3 to -3) that education about EC was good/bad, positive/negative, and beneficial/harmful; summary scores ranged from +9 to -9. Perceived peer expectations were measured by participant response on a 7-point Likert scale statement that "Most of the people or groups that are important to me think that I should/should not educate women about EC." Each situation was answered with a 7-point Likert scale format ranging from definitely should = +3 to definitely should not = -3. Knowledge was measured by the composite score of five questions (possible range=0–5) based on the current literature about EC mechanism of action, side effects, and when to prescribe.<sup>2</sup> For the analysis we also included the practice variables of specialty, board certification, and years in practice.

### Analysis

Categorical variables (eg, knowledge questions that were scored as correct or incorrect) were summarized overall and by specialty using frequencies and percents. These variables were compared across specialties

using the chi-square test. Continuous variables were summarized overall and by specialty using means, standard deviations, and ranges. Comparisons between the specialties were made using generalized linear models. To test our hypothesis that knowledge, attitude, and perceived peer expectations would predict intention to educate about EC, we included these covariates, along with demographic and practice covariates, in a multivariable generalized linear model for intention to educate. For the multivariable generalized linear models, the outcome variable—intention to educate about EC—was a continuous variable with scores ranging from 5–35.

To aid interpretations, we also classified the physicians' intention to educate into one of three categories: low intention (score <25), medium intention (score ≥25 and ≤34), and high intention (score=35). This allowed us to compare the mean scores of their beliefs about educating EC. Univariate and multivariate comparisons across these

Table 1

### Knowledge About Emergency Contraception (EC) by Specialty

Item	Overall % Correct	OB-GYN n=29	Family Medicine n=50	Pediatrics n=17	P Value
How serious are the common side effects?	97.8 <sup>a</sup>	96.6	92.0	82.4	NS
If a woman takes EC and still becomes pregnant, there is at least a 50% chance that the baby will be born with a birth defect.	93.4 <sup>b</sup>	96.6	90.0	70.6	<.05
If used properly, EC pills work to prevent pregnancy X % of time.	90.1 <sup>c</sup>	93.1	84.0	76.5	NS
The best theoretical understanding of the mechanism of action for EC pills is . . .	82.4 <sup>d</sup>	58.6	58.0	52.9	NS
Pills are effective if taken within (# hours).	62.7 <sup>e</sup>	86.2	54.0	29.4	<.001

a. Not serious but uncomfortable (nausea, vomiting) or none

b. False

c. At least 75% of the time

d. Previous attachment of a fertilized egg or delays ovulation

e. 72 hours or within 5 days, as per most recent World Health Organization guidelines

NS—not significant

Table 2  
Beliefs About Educating About Emergency Contraception (EC), by Specialty

	<i>Overall Score n=96</i>	<i>OB-GYN n=29</i>	<i>Family Medicine n=50</i>	<i>Pediatrics n=17</i>	<i>P Value</i>
	<i>Mean (SD)</i>	<i>Mean (SD)</i>	<i>Mean (SD)</i>	<i>Mean (SD)</i>	<i>Mean (SD)</i>
Beliefs about EC education (range -3 to +3)					
Enhances a woman's reproductive options	1.8 (1.5)	1.7 (1.5)	1.8 (1.8)	2.2 (1.0)	NS
Reduces the number of unintended pregnancies	1.9 (1.4)	2.0 (1.2)	1.6 (1.7)	2.0 (1.5)	NS
Reduces number of abortions	1.8 (1.5)	1.8 (1.5)	1.6 (1.7)	1.9 (1.2)	NS
Causes frequent use of EC	-0.6 (1.9)	-0.4 (1.9)	-1.5 (1.4)	0.2 (1.9)	<.01
Encourages unprotected sex	-0.7 (1.9)	-0.9 (1.9)	-1.1 (1.8)	0.2 (1.9)	NS
Discourages consistent use of contraception	-0.8 (1.9)	-0.8 (1.9)	-1.2 (1.5)	0.1 (2.1)	NS
Takes too much time in clinic	-1.4 (1.6)	-1.4 (1.5)	-1.4 (1.6)	-1.3 (1.9)	NS
Is inconvenient for me	-1.4 (1.7)	-1.4 (1.7)	-1.6 (1.7)	-1.1 (1.8)	NS

NS—not significant

groups were made using generalized linear models. All analyses were performed using SAS v.9.0 (SAS Institute, Cary, NC), and a *P* value of <.05 was considered significant.

## Results

After one follow-up attempt, the overall response rate was 70%, with a total of 96 physicians from four university settings responding to our survey. The sample included 52.1% from family medicine, 30.2% from obstetrics and gynecology, and 17.7% from pediatrics. Participants had a mean of 15.8 years in practice (range=1–50). Ninety-seven percent of the respondents were board certified; 61.5% were male. The mean age of participants was 46.9 years (range=29–79).

Respondents had medium knowledge about EC, with a mean score of 3.76 (standard deviation [SD]=1.30, range 0–5). Obstetrician-gynecologists scored significantly higher (mean=4.3, SD=1.0, range=0–5) than did family physicians (mean=3.8, SD=1.1, range=0–5) or pediatricians (mean=3.1, SD=1.8, range=0–5) (*P*<.01). Table 1 presents the results of key knowledge questions.

The mean score for general attitude about EC education was 7.0 (SD=3.6, range -9 to +9) and did not differ significantly by specialty (data not shown). The mean score for the constructed variable of physicians' perceived peer expectations was 1.8 (SD=1.5, range=-3 to +3); there were no differences by specialty (data not shown).

Mean scores on specific beliefs about providing EC education by specialty are shown in Table 2. Only the belief that "Educating about EC causes frequent use of EC" differed by specialty; family physicians disagreed more with this statement than obstetricians; pediatricians slightly agreed with it.

The mean score for physicians' intentions to educate patients about EC was 31.5 (SD=6.7, range 5–35). For four of the five clinical situations, the majority (73%–83%) of physicians responded "very much" regarding the extent to which they intended to educate about EC. For the specific situation of educating sexually active teens about EC, however, only 60% reported "very much." Nine physicians agreed "very much" with the statement that their opposition to EC precluded educating about it, and five others reported a neutral or slight agreement with this statement. These results are presented in Table 3.

Table 4 presents the mean scores for physicians' beliefs about the outcomes of EC education by their level of intention to educate about EC. Physicians who had high intention to educate (score=35) were more likely than both medium intenders (score=26–34) and low intenders (score=<25) to believe that educating about EC enhances a woman's reproductive options. High and medium intenders were each more likely than low intenders to believe that EC education reduces unintended pregnancy and abortion. High and medium intenders were more likely than low intenders to disagree with the statements that EC education is

Table 3

## Intention to Educate About Emergency Conception (EC) for Five Situations (n=93)

	<i>Very Much</i> 7	6	5	<i>Neutral</i> 4	3	2	<i>Not at all</i> 1	<i>Total</i>
	%	%	%	%	%	%	%	# (%)
Women who specifically ask	82.8	8.6	3.2	1.1	0.0	0.0	4.3	93 (100)
Women experiencing incest or rape	82.8	8.6	4.3	0.0	0.0	0.0	4.3	93 (100)
Method problem/condom break	73.1	10.8	6.5	1.1	2.2	0.0	6.5	93 (100)
Sexually active teens	60.2	7.5	12.9	4.3	4.3	3.2	7.5	93 (100)
Woman who has unprotected sex and makes request	79.6	6.5	5.4	3.2	0.0	0.0	5.4	93 (100)
My oppsition precludes educating	10.1	0.0	1.1	4.5	1.1	2.3	80.9	89 (96)

Table 4

## Mean Score of Beliefs About Emergency Contraception (EC) by Level of Intention to Educate About EC (Range -3 to +3)

<i>Beliefs About EC</i>	<i>High Intenders</i> n=53	<i>Medium Intenders</i> n=30	<i>Low Intenders</i> n=10	<i>High Versus Low</i> P Value	<i>High Versus Medium</i> P Value	<i>Medium Versus Low</i> P Value
Enhances a woman's reproductive options	2.28	1.34	0.50	<.001	<.01	NS
Reduces unintended pregnancy	2.30	2.03	-0.60	<.001	NS	<.001
Reduces the number of abortions	2.17	1.79	-0.40	<.001	NS	<.001
Causes frequent use of EC	-1.00	-0.28	0.50	<.05	NS	NS
Encourages unprotected sex	-1.02	-0.32	-0.30	NS	NS	NS
Discourages consistent use of contraception	-1.25	0.03	-0.50	NS	<.01	NS
Takes too much time in clinic	-1.64	-1.17	-0.50	<.05	NS	NS
Is inconvenient for me	-1.74	-1.28	0.00	<.01	NS	<.05

NS—not significant

inconvenient for them; high intenders were more likely than low intenders to disagree that EC education takes too much time in clinic.

The more positive the attitude held by physicians about educating about EC, the greater the intention to educate their patients about the method ( $\beta=0.83$ ,  $P<.001$ ). Perceived peer expectations also predicted intention to educate patients about EC. The more the physicians perceived that their professional referents approved or sanctioned their educating patients about

EC, the greater was their intention to do so ( $\beta=1.59$ ,  $P<.001$ ). Neither demographic characteristics of participants (including specialty) nor their knowledge about EC predicted their intention to educate patients about EC in the model.

### Discussion

In this study, we sought to examine physicians' intentions to educate women about the use of EC by women and factors associated with their intentions. We found

that the majority of academic primary care physicians in the sample did intend to educate patients about EC. Their attitudes and perceptions of peer expectations about EC education appeared to influence their intentions more than did their knowledge about EC.

These findings have implications as we design physician education programs to increase the use of EC. Program goals might shift to include clarifying attitudes as well as increasing knowledge. In lieu of exclusive lecture-based material to increase knowledge, programs should consider activities that encourage participants to exchange opinions about scientific findings and clinical scenarios. Program structure might vary based on a preliminary, nonjudgmental determination of intention to educate about EC. Physicians with high intention to educate can be provided with reinforcement about educating all sexually active women of reproductive age. Programs for those with medium intention to educate can include small-group discussion to clarify values, distinguish between professional responsibilities and personal values, and amplify recent research findings about the lack of association between having EC in hand and sexual risk behaviors.<sup>13,14</sup> Educational programs for physicians who have low intention to educate women about EC can include strategies for making their practices and attitudes known to staff and patients in a positive way to facilitate a better match between patient needs and provider practices.

### Limitations

Our study used a convenience sample of physicians from four academic health centers. Potential bias exists in the current analysis and that of the original study because of the 70% response rate; physicians who had strong opinions about EC may have disproportionately elected to participate or not to participate.

The results are not generalizable to all academic physicians, as we only studied three specialties, and the results cannot be generalized to nonacademic physicians. Nevertheless, academic faculty can affect behaviors of physicians in training, and this study offers insights into their perspectives on educating about EC. It is possible that including other primary care providers such as nurse practitioners or physician assistants may have produced different results.

The limited response rate may have biased the sample with respondents who have strong opinions, either pro or con, about the subject. Another limitation of this and all surveys that rely on self-report of behavior is that self-report may differ from actual practice. Further, the study was conducted before the FDA approved OTC sale of EC among adult women, which may influence patient education efforts among providers.

### Conclusions

Educating women about EC during a clinic visit was more likely to be considered inconvenient and time-consuming for providers who had low intention

to educate. It is possible that the inconvenience factor is heightened for those individuals not disposed toward the method. When comparing results from the published study on prescribing intentions for EC,<sup>12</sup> there was a greater proportion of individuals with high intention to educate than to prescribe EC, perhaps reflecting those with moral concerns about the method. Further, peer influence appeared to be greater for educating about EC than for prescribing it. We interpret these results to suggest that providers for whom prescribing EC represents a conflict of values disregard peer pressure to prescribe it, focus on it as an imposition, but nevertheless may educate women about the method.

A small but important study finding is that 18% of physicians in our sample were reluctant or unwilling to provide education about EC to sexually active adolescents. Since adolescence is a period when risk taking related to sexual activity is widespread, ideally physicians could work with teens to avoid the consequence of unplanned pregnancy through ready access to and availability of EC. Educational efforts with current and future physicians can direct attention to the role of sexuality and experimentation in adolescent development and the importance of counseling without moral undertones.<sup>15</sup>

Education during physicians' patient encounters remains an important source of accurate reproductive health information for all sexually active women of reproductive age, whether a method is prescribed or available OTC. Indeed, women would reap substantial benefits if education about EC were as routine and widespread as education about condoms. Education about EC coupled with advance prescription of EC for women under age 18, or in states where Medicaid or other insurance will cover, can make an important contribution to efforts to prevent unplanned pregnancies. Physician practice will be a central part of these efforts.

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*Corresponding Author:* Address correspondence to Dr Kelly, University of Missouri-Kansas City, School of Nursing, 2220 Holmes Street, Kansas City, MO 66103. 816-235-2617. Fax: 816-235-1701. kellypj@umkc.edu.

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