



Exploring emergency contraception prescribing by pharmacists in California^{☆,☆☆}



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ARTICLE INFO

Article history:

Received 30 April 2019

Received in revised form 27 August 2019

Accepted 29 August 2019

Keywords:

Emergency contraception

Pharmacist

Prescribing

Community pharmacy

ABSTRACT

Objective: To understand knowledge, current practices, barriers and facilitators for pharmacists prescribing emergency contraception (EC).

Study Design: We conducted a cross-sectional survey among California community pharmacists. We distributed the online survey, consisting of 34 close-ended questions, to members of the California Pharmacists Association via its email listserve.

Results: We collected a survey response rate of 7%. Although 95% of respondents were aware of the statewide protocol allowing pharmacists to prescribe EC, only 36% of respondents reported prescribing EC in the previous year. Prescribing practices within the past year differed by type of pharmacy. We found no correlation between EC knowledge and prescribing practices. The most frequently reported facilitators of EC prescribing by pharmacists were the statewide protocol, a continuing education training program, and patient need or demand for EC. The most reported barriers to prescribing EC were lack of payment for pharmacist patient care services by insurers, increased responsibility or liability concerns, and time constraints. When asked about their intention to prescribe in the upcoming year, responses differed based on whether or not their pharmacies currently stocked EC.

Conclusion: This exploratory study identifies key facilitators, such as the statewide protocol, and key barriers, such as lack of payment by insurance companies for pharmacist services.

Implications: The findings of this study could guide future multi-component implementation strategies such as academic detailing that specifically address concerns about increased responsibility, liability and time constraints. In addition, payment for pharmacist services could be addressed at a policy level since this was a barrier to pharmacist EC prescribing.

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1. Introduction

Levonorgestrel emergency contraception pills (LNG EC), introduced in 1999, became the first dedicated EC pill product to be sold over-the-counter in 2006 [1]. In 2010, the FDA approved ulipristal acetate emergency contraception (UPA EC), a progesterone agonist/antagonist; UPA EC is still available only by prescription [1]. UPA

EC is more effective than LNG EC in certain situations, such as when UPA EC is used 3 to 5 days after unprotected intercourse and among women with a higher Body Mass Index [2]. Despite this, UPA EC is not widely available and its use remains low due to limited provider knowledge, prescribing, availability in pharmacies, and consumer awareness in the absence of direct-to-consumer advertising [3]. A 2016 mystery-caller study of 533 pharmacies nationwide found only 10% of pharmacies had UPA EC in stock [4].

Due to a lack of availability of UPA EC in community pharmacies, women may need to order online and pay out of pocket and it may be cost prohibitive. If women only have access to UPA EC via online ordering, they may delay use, possibly becoming ineligible to use UPA EC within the efficacious time window [5]. Women who lack internet access or a mailing address face additional challenges. Pharmacist EC prescribing is one approach that can reduce barriers by granting access to both oral EC methods directly in

[☆] The authors report no conflict of interest.

^{☆☆} Dr. Rafie is a member of the Clinical Advisory Board for Afaxys Inc. This study was funded by University of California, San Diego, Altman Clinical and Translation Research Institute (grant #03758). Findings of this study were presented at the EC Jamboree 2018.

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community pharmacies and allowing women to utilize their insurance since the Affordable Care Act requires health plans to cover the cost of prescription and non-prescription contraception when prescribed for women. Some states mandate private and public insurance coverage of over-the-counter EC but California is not one of those states [6]. In California, EC must be prescribed for insurance coverage [7].

In California, trained pharmacists who have completed one hour of continuing education may prescribe LNG EC (since 2004) and UPA EC (since 2013) [3,7]. However, we know little about pharmacists' EC knowledge and prescribing practices. In 2013, a study in western Massachusetts revealed that pharmacy staff often provided incorrect information regarding UPA EC [8]. We also do not know if pharmacists' EC knowledge or having EC stocked at their pharmacies affect their prescribing practices.

Prior studies focused on EC access and have viewed pharmacists as barriers to, rather than facilitators of, EC use due to pharmacists' misinformation about or ethical objection to EC [9–11]. In this study, however, we explored how pharmacists can facilitate access to EC. The objective of this study was to investigate the characteristics of prescribing pharmacists and to explore the barriers and facilitators of pharmacists prescribing EC.

2. Material and methods

2.1. Respondents and data collection

From June through August 2018, we conducted a cross-sectional survey of community pharmacists across California. Recruitment was conducted through the California Pharmacists Association, which sent three emails to all pharmacists on their listserv. Interested respondents followed a link to an internet-based survey hosted by REDCap [12].

To participate in the study, pharmacists provided their professional license numbers. We utilized the online database of the California Department of Consumer Affairs, to verify that each response was associated with a unique licensed pharmacist. The survey consisted of 34 close-ended questions and took approximately 10–15 min to complete. A \$10 electronic gift card was offered to the first 200 unique respondents as an incentive. This study was approved by the Institutional Review Board at the University of California, San Diego.

2.2. Measures

The survey was designed based on the Practical, Robust Implementation and Sustainability Model (PRISM) framework for dissemination and implementation, translating research into practice. This model evaluates how health interventions interact with recipients to influence program adoption, implementation, maintenance, reach, and effectiveness [13]. Measures for the survey fell into the following domains used by previous studies of pharmacist EC practices: (1) knowledge, (2) attitudes, (3) intention to prescribe, and (4) prescribing practices [14]. Specifically, respondents were asked about both UPA EC and LNG EC effectiveness, mechanisms of action, and drug interactions, as well as their attitudes about EC in general and among specific populations, perceived barriers and facilitators to prescribing EC, availability of EC in their pharmacy, and their current and intended prescribing practices. Furthermore, the survey assessed demographic characteristics of respondents and asked them which clinical tools would be useful in prescribing EC.

2.3. Analysis

We calculated descriptive statistics for all variables of interest. We examined demographic variables overall and by whether or

not the respondent had prescribed EC in the previous year. We used Chi-square tests and t-tests to examine differences in prescribing practice by demographics and to examine differences in intention to prescribe by demographics and prior prescribing practice. We applied a multivariable logistic regression to identify the strongest associations with previous EC-prescribing behavior. We calculated percentages for correct answers on the knowledge questions overall and by prescribing practice and we assessed differences using bivariate logistic regression. Similarly, we assessed attitudes about prescribing with descriptive statistics overall and by prescribing practice. We explored barriers and facilitators for prescribing through descriptive statistics. We performed all analyses using Stata 15 [15].

3. Results

3.1. Respondents

The California Pharmacists Association sent the survey to their email list of 3676 pharmacists. Two hundred forty-eight respondents took the survey. The response rate was 7%. For analysis, we excluded one respondent for entering an invalid license number, 49 respondents for incomplete surveys, and 6 respondents who worked in a closed-door pharmacy or did not work in California, resulting in a final sample of 192 respondents. Pharmacists from chain (38%) and independent (38%) pharmacies were equally represented. See Table 1 for respondent characteristics.

3.2. Current practices and intention to prescribe

Although 95% of respondents were aware of the statewide protocol allowing pharmacists to prescribe EC, only 36% of respondents prescribed EC in the previous year). Our analysis found differences in prescribing practices by type of pharmacy. In the bivariate descriptive analysis, pharmacists in independent pharmacies and those in practice for at least 10 years were more likely to have prescribed EC in the past year compared to those in other types of pharmacies ($p = 0.001$ and $p = 0.01$, respectively).

Over half of respondents intend to prescribe LNG EC in the coming year ($n = 113$, 59%), whereas fewer ($n = 70$, 37%) intend to prescribe UPA EC. Of the respondents who intend to prescribe UPA EC, only 20% are currently prescribing it whereas 60% are currently prescribing LNG EC. Of those who are currently prescribing UPA EC, 82% ($n = 14$) intend to continue to prescribe it.

Responses regarding intention to prescribe differed based on whether EC was stocked in the pharmacy (LNG EC: $p < 0.001$, UPA EC: $p = 0.001$). Almost all (98%) of those who intend to prescribe LNG EC reported having it in stock. All (100%) of those who did not have LNG EC in stock reported no intention to prescribe, while 65% of those who had LNG EC in stock reported an intention to prescribe. Stocking UPA EC had less of an impact on intention than LNG EC with only 50% of those who intend to prescribe UPA EC in the coming year reported having it currently in stock. A majority (72%) of those who do not have it in stock and 79% of those who didn't know if it was in stock did not intend to prescribe.

3.3. Knowledge

Most (73%) respondents correctly answered that UPA EC is more effective than LNG EC in the 72–120 hour window after unprotected intercourse. We found no difference in EC prescribing practice by any of the knowledge questions (Table 2).

Table 1
Demographic characteristics of pharmacists in California who responded to the online survey in 2018.

Characteristics	Percent Prescribed EC n = 69 (35.9%)	Percent Did not Prescribe EC n = 123 (64.1%)	p-value
Age, y, mean +/- SD	47.3 +/- 14.1 range 28–79	41.9 +/- 12.9 range 23–74	0.4
Female	54	61	0.5
Hispanic	3	7	0.4
Race ^a			
White	45	33	0.04
Black/African American	6	0.8	
Asian	36	50	
Other	6	3	
Region			
Northern California	28	32	0.9
Central California	12	11	
Southern California	59	57	
Location			
Urban	62	46	0.09
Suburban	25	42	
Rural	12	9	
Pharmacy Type			
Community– Chain	39	37	0.001
Community– Independent	54	29	
Compounding pharmacy	2	3	
Hospital outpatient pharmacy	4	11	
Other	2	18	
Job Title			
Staff Pharmacist	51	55	0.1
Pharmacy Manager	30	24	
Pharmacy Owner	17	11	
Other	2	9	
Years Practicing			
Less than 10 years	33	55	0.01
10 to 19 years	22	14	
20 or more years	45	31	

Note: Prescribed was defined as personally prescribed in the last 12 months. Percentages may not total to 100% due to “decline to answer” which were not included in the table.

^a p-value from Fisher exact test.

^b $\chi^2 = 45.76$, $p < 0.001$; age dropped from model because of multicollinearity.

EC = Emergency Contraception.

Table 2

Association between EC knowledge and EC prescribing among pharmacists in California who responded to the online survey in 2018.

	Correctly answered, overall n = 192 %	Correctly answered, among those who prescribed EC n = 69 %
Mechanism for how LNG EC prevents pregnancy	43	43
Length of time UPA EC is effective	60	62
Mechanism for how UPA EC prevents pregnancy	38	46
UPA EC is more effective in women with BMI > 30	47	57
UPA EC is more effective for unprotected intercourse that occurred between 72 and 120 hours ago	73	77
UPA EC has drug interactions with hormonal contraceptives	12	14

UPA EC = Ulipristal acetate Emergency Contraception.

LNG EC = Levonorgestrel Emergency Contraception.

3.4. Attitudes

Almost all respondents (n = 172, 90%) reported feeling comfortable providing EC to women 18 years of age and older while fewer than half (n = 82, 43%) reported feeling comfortable providing to patients under 18 years old. Thirty percent (n = 58) of respondents reported being comfortable providing EC to men and less than 7% (n = 13) of respondents reported being opposed to providing EC for personal or religious reasons.

3.5. Facilitators and barriers

As depicted in Table 3, when asked to indicate the top three items that would be helpful or could facilitate prescribing EC, respondents selected (1) having a statewide board of pharmacy protocol allowing pharmacists to prescribe EC, (2) a continuing education training program, and (3) corporate/company policy. When asked to name the single most important facilitator, respondents again selected the statewide protocol and continuing education training program, followed by corporate/company policy. When asked if a screening questionnaire, clinical guidelines, patient education materials, or marketing materials would be the most useful clinical tool to provide EC, nearly half (n = 91, 47%) selected the screening questionnaire, followed by clinical guidelines (n = 66, 34%).

When asked to indicate the top disincentives or barriers to prescribing EC, respondents indicated (1) lack of payment for pharmacist patient care services, (2) increased responsibility and liability concerns, and (3) time constraints in the pharmacy. When asked to select the single largest barrier, respondents selected the lack of payment for patient care services, followed by increased responsibility and liability concerns, and time constraints in the pharmacy.

4. Discussion

This exploratory study aimed to understand California pharmacists' EC prescribing practices, attitudes about, knowledge of, and

Table 3

Facilitators and barriers to implementation of EC prescribing by pharmacists in California who responded to the online survey in 2018.

	Most Important n (%)	Top 3 Reported n (%)
Facilitators ^a		
Statewide Board of Pharmacy protocol allowing pharmacists to prescribe EC	81 (42)	120 (63)
Continuing education training program	39 (20)	94 (49)
Corporate/company policy	29 (15)	46 (24)
Patient need or demand for EC	22 (12)	69 (36)
My desire to practice at the top of my license	11 (6)	53 (28)
Personal support of access to EC	6 (3)	37 (19)
Other	4 (2)	4 (2)
Barriers ^b		
Lack of payment for pharmacist patient care services	60 (31)	107 (56)
Increased responsibility and liability concerns	32 (17)	85 (44)
Time constraints in the pharmacy	31 (16)	76 (40)
Lack of knowledge/training about EC	28 (15)	74 (39)
Lack of patient demand	14 (7)	55 (29)
Corporate/company policy	15 (8)	30 (16)
Other	9 (5)	11 (6)
Lack of supply of EC in my pharmacy	3 (2)	18 (9)

^aIndividual facilitators are not mutually exclusive; top facilitator is mutually exclusive.

^bIndividual barriers are not mutually exclusive; top barrier is mutually exclusive. EC = Emergency Contraception.

intentions to prescribe oral EC (LNG EC and UPA EC), as well as barriers and facilitators to prescribing EC. Older pharmacists and those with more years in practice were more associated with prescribing EC. This finding may be due to new pharmacists not perceiving a need for an EC prescription since LNG EC has been available over-the-counter since 2006. Many pharmacists who are not currently prescribing EC intend to prescribe it in the next year. We found a positive relationship between intention to prescribe and whether EC was currently stocked in the pharmacy. These findings indicate an opportunity and need to provide multi-level support for pharmacists so that intention to prescribe results in actual prescribing.

Since respondents reported that having a statewide protocol expanding pharmacist scope of practice as the biggest facilitator of prescribing EC, other states interested in improving access to EC could consider creating similar statewide EC protocols. In addition, this study found the biggest barrier to prescribing EC is lack of payment for pharmacist services. Pharmacist advocacy efforts and changes at the policy level could influence changes in payment practices. If legislation is used to expand the pharmacist scope of practice to include prescribing EC, then requiring payment for that service from government and commercial health plans may ensure equitable access and program success.

This study also provides guidance into which implementation strategy might be the most beneficial to address the barriers to pharmacists prescribing EC. One potential implementation strategy to explore is academic detailing, an educational face-to-face outreach method to address barriers at various system levels. Academic detailing targeting pharmacists has been effectively used for other implementation studies [16]. This strategy would increase knowledge about EC among pharmacists and address overcoming barriers to prescribing EC such as time constraints, liability concerns, and leadership support.

The results of this study should be taken into consideration with some limitations. First, the response rate was low. However, we had good representation from chain and independent pharmacists. Additionally, respondents were from California, limiting the generalizability of the results to other states. This study explored pharmacist prescribing UPA EC; prior studies have focused on LNG EC. It also utilized a Dissemination and Implementation framework to understand the barriers and facilitators of pharmacists prescribing EC. Future, larger, studies on pharmacists prescribing EC are needed to further understand barriers and facilitators.

This study provides insight into demographic and knowledge factors that may influence pharmacists prescribing EC and their intentions to prescribe EC in the future. Future qualitative research, gathering more in-depth information regarding the barriers and

facilitators of EC prescribing practices among pharmacists, could further inform intervention, implementation, and policy efforts.

Acknowledgements

We would like to thank the San Diego County Pharmacists Association for the invaluable partnership. We would also like to thank Alice Richman PhD, MPH who gave us permission to adapt her EC survey instrument.

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