
Knowledge, attitudes and practices in a group of pharmacists in Puerto Rico regarding emergency contraception

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Background: The recent FDA approval of non-prescription sales of Plan B, an emergency contraceptive method to those 18 years old and over, gives a prominent role to pharmacists in providing timely access to emergency contraception (EC). While this decision affects Puerto Rico, no studies on non-prescription EC in Puerto Rico have been conducted. The purpose of this study is to identify the knowledge, attitudes and practices of a group of pharmacists in Puerto Rico regarding emergency contraceptive pills.

Methods: A cross-sectional descriptive study of a group of pharmacists' knowledge, attitudes, and practices regarding EC was conducted among those who attended the annual convention of the College of Pharmacists of Puerto Rico on August 24-26, 2006.

Results: Slightly more than half of pharmacists

surveyed (51.4%) supported a law that allows them to dispense EC without a prescription. Yet, overall EC knowledge was low given that the average number of knowledge questions answered correctly was 1.8 (SD±1.36) out of 6. Pharmacists who correctly answered knowledge questions about EC, whose pharmacy dispensed EC, and who felt comfortable giving information to a client about EC were significantly more likely to support the non-prescription EC law.

Conclusion: Knowledge about EC was low among the pharmacists that were surveyed, but there was support for a non-prescription EC policy in Puerto Rico. Increased education efforts are needed in this important group of allied health professionals.

Key words: Emergency contraception, Pharmacists, Family planning.

Emergency contraception (EC) refers to several methods of post-coital prevention of pregnancy. There is one EC product in the United States and Puerto Rico known as "Plan B" which consists of two pills of 0.75 mg of levonorgestrel each. In August 2006, the United States Food and Drug Administration (FDA) approved non-prescription sales of Plan B. EC may only be provided by pharmacists in licensed pharmacies, or by other licensed healthcare clinics, and the buyer's age must be verified. The ability to obtain EC without first having to get a prescription is an important public health policy to ensure that women can make the choice to prevent pregnancy in a timely and effective way, given that its effectiveness is limited by the amount of time elapsed

since sexual intercourse and the administration of the contraceptive. The FDA decision has reinforced the role of pharmacists as key providers and access to EC. Data on the knowledge, attitudes and practices of pharmacists regarding EC are important in order to develop the necessary tools to help pharmacists assume this role.

According to the 2002 Behavioral Risk Factor Surveillance System, 84% of women who are at risk for pregnancy in Puerto Rico use contraception (1). However, of those women who use contraception, 19% use the birth control pill, the lowest prevalence for all 50 U.S. states, Guam, and Washington, DC. Puerto Rican women also have the highest prevalence of tubal ligation and the use of the rhythm method, at 46% and 10% respectively. The rate of unplanned pregnancy in Puerto Rico has not been measured, however the Study of Induced Abortion in Puerto Rico in 2001-2002 estimated that 22% of all pregnancies end in abortion, slightly less than the 25% in the United States (2). This study also found that, among women having an abortion, 47% were using a contraceptive method when they became pregnant, 9% had been forced to have sex without their consent at least once, and only 27% had used contraception at first premarital

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intercourse. Despite the significant proportion of women at risk for pregnancy who are using contraception, these data indicate that emergency contraception could still make a significant contribution to the reproductive health of women by preventing unintended pregnancy in the event of a known contraceptive failure, rape, or an instance of sex where contraception was not used but pregnancy was not desired.

Puerto Rico falls under the jurisdiction of the FDA, but there have been no studies assessing EC in Puerto Rico. Previously, a pilot telephone survey of pharmacists in Puerto Rico regarding EC was conducted as part of a research paper for a University of Puerto Rico School of Medicine seminar on Women and Health. It revealed low levels of knowledge among pharmacists in Puerto Rico regarding EC. This study is the first formal evaluation of the knowledge, attitudes, and practices of pharmacists in Puerto Rico regarding EC.

Methods

Study Design:

An 18-item, self-administered questionnaire about the knowledge, attitudes, and practices of pharmacists in Puerto Rico regarding emergency contraception (EC) was distributed to pharmacists attending the annual convention of the College of Pharmacists of Puerto Rico at the Westin Rio Mar hotel in Rio Mar, Puerto Rico from August 24-26, 2006. Some items were adapted from a questionnaire used to survey pharmacists in South Dakota about EC (3) and then translated into Spanish. The questionnaire was pre-tested with four pharmacists and a pharmacy student in Puerto Rico in order to identify survey design problems; it was revised accordingly.

Pharmacists were recruited in the exhibition area of the convention and as they exited convention sessions. Registered pharmacists who currently worked, at least part of the time, in a pharmacy in Puerto Rico were invited to participate. Pharmacists in Puerto Rico must be members of the College of Pharmacists of Puerto Rico in order to be able to practice. There are a total of 3,145 pharmacists who are members of the College of Pharmacists of Puerto Rico according to data obtained in a conversation with Lcda. M. Morales, executive director of the organization (January 16, 2007). Lcda. Morales also reported that the annual convention of the College of Pharmacists of Puerto Rico was attended by 850 members. A total of 367 surveys were collected, which represented 43% of attendees. Thirty-five surveys were excluded from analysis because of either incomplete data or because the participant did not work in a pharmacy.

The institutional review board of the University of

Puerto Rico Medical Sciences Campus approved the study protocol as #9080106 on July 3, 2006.

Data and Analysis:

Demographics: Pharmacists were asked to report their sex, the number of years they had been a registered pharmacist, and in which of Puerto Rico's 78 municipalities they practiced. Using U.S. Census data on the population density of each municipality, a dichotomous variable was created that categorized reported municipalities as either "urban" or "non-urban." "Urban" municipalities were those that "have a population density of at least 1,000 people per square mile," as per the U.S. Census Bureau definition (4). They were also asked whether they worked in a retail chain pharmacy, retail community pharmacy, private hospital pharmacy, public hospital pharmacy, or Department of Veterans Affairs Hospital pharmacy. For analysis this item was re-coded into a trichotomous variable of chain, community, and hospital pharmacies.

Practices: Data were collected on whether the pharmacy they worked in currently sold any method of contraceptive, and if so, if it sold EC. If not, the pharmacist was asked to indicate which of a list of reasons were reasons why his or her pharmacy did not sell EC. Those pharmacists whose pharmacy did provide EC were asked to estimate the number of prescriptions for EC they had prepared in the past three months. All pharmacists were asked to indicate whether or not customers had asked them for EC in the last three months.

Pharmacists were asked their main source of continuing education credits in the past 5 years and whether or not they would be interested in taking a continuing education credit course about EC. They were also asked whether or not the pharmacy they worked in would be willing to display information about EC or if their pharmacy already did so.

Knowledge: There were six questions evaluating knowledge about EC. Two multiple-choice items gave closed-ended answer choices. Pharmacists were asked if EC pills works by either "provoking an early abortion," "preventing pregnancy," "regulating menstruation," or "not sure". Pharmacists were asked if the mechanism of action of EC pills was most like "spermicide," "condom," "birth control pills," "misoprostol (Cytotec)," "none of these," or "not sure." Both multiple-choice items were recoded into dichotomous variables by categorizing responses as either "correct" or "incorrect". Responses of "not sure" were coded as incorrect.

Four knowledge items asked pharmacists to choose if they "agree," "neither agree nor disagree," or "disagree" with the following statements: "Using EC repeated times can harm one's health," "Increasing access to EC causes

women to stop using other forms of contraception,” “If a pregnant woman takes EC it can cause the baby to be born with birth defect,” and “Emergency contraception pills are effective up to 120 hours after sex.” These four items were recoded into dichotomous variables by categorizing responses as either “correct” or “incorrect.” Responses of “neither agree nor disagree” were coded as incorrect.

Attitudes: Pharmacists were asked how comfortable they felt giving a client information about EC (from “very comfortable,” to “very uncomfortable” and not applicable) which was re-coded into a dichotomous variable. After reading a short paragraph explaining collaborative practice agreements that allow pharmacists to dispense EC without a prescription, respondents were asked to indicate how strongly they agree or disagree with the establishment of a law in Puerto Rico that would allow pharmacists to dispense EC without a prescription. Responses were re-coded into a dichotomous variable of either support or opposition for such a law.

Bivariate analyses were conducted to determine if difference existed in pharmacists’ attitudes concerning access to EC without a prescription by several demography, knowledge, and attitudinal variables. Chi-square, analysis of variance, and t-tests were used to analyze the data and significance was defined at a p-value of $\leq .05$. SPSS version 11.0 for Mac was used to analyze the data.

Results

Demographics:

The majority of pharmacists were female (81%) and worked in an urban municipality (76%). The median number of years as a registered pharmacist was 19, with 43% working in retail community pharmacies, 26% in retail chain pharmacies, and 27% in either private, public, or Department of Veterans Affairs hospitals.

Practices: Seventy-eight percent of pharmacists worked in a pharmacy that sells some type of contraception, but only 29% worked in pharmacies that dispensed EC.

Among pharmacists whose pharmacy did not sell EC, the most commonly given reasons why were lack of demand (49%), management or administrative decision (22%), and conscientious objection or religious reasons (31%). Two respondents indicated that their pharmacy did not sell EC because they didn’t know about EC and one said it was because it was not on the formulary.

Forty-eight percent of all pharmacists had been asked by someone in the past three months how to obtain EC and 17% had filled at least one prescription for EC in the past three months. Of those whose workplace did dispense EC slightly more than half (58%) had filled at least one prescription for it in the past three months. Fifty-two percent of pharmacists indicated that their pharmacy

would be willing to have available information (e.g. brochures) about EC.

The most common sources of continuing education credits were conferences (76%) and journal articles (10%).

Knowledge: Of the six knowledge items, only 12% of respondents answered more than 3 correctly. The average number answered correctly was 1.8 (SD± 1.36). Forty-seven percent of pharmacists did not know that preventing pregnancy was how emergency contraception pills worked. Sixty-one percent did not know that the mechanism of action of emergency contraception pills was most like birth control pills. Eighty-five percent of pharmacists did not know that repeated use of EC does not cause health problems (5). Seventy-one percent of pharmacists did not know that increasing access to EC does not cause women to stop using other forms of birth control (6,7).

Seventy-four percent of pharmacists did not know that EC is not a teratogen (8). Finally, 82% of pharmacists did not know that EC is still effective up to 120 hours after sexual relations (9,10).

Attitudes: More than half of pharmacists (51.4%) supported the establishment of a law in Puerto Rico that allows them to sell EC without a prescription. No statistical difference in attitude of non-prescription sales was found by respondents’ sex or geographic location (urban vs. rural).

Respondents who supported non-prescription sales had an average of 7.8 years more experience as a registered pharmacist than those who did not support it ($p < .01$). Several other independent variables were associated with being significantly more likely to support a non-prescription EC policy in Puerto Rico, which were working in community retail and hospital pharmacies (compared to working in a chain retail pharmacy) ($p < .01$), working in a pharmacy that dispensed EC ($p < .05$), and feeling comfortable giving information to a client about EC ($p < .01$). Those who worked in a pharmacy that sold some type of contraception were significantly less likely to support non-prescription sales than those who did not ($p < .01$).

Pharmacists who answered knowledge items correctly were more likely to support non-prescription sales of EC, and in three of these items the association was statistically significant (see Table 1).

Overall, 49% of pharmacists felt comfortable in giving information to a client about EC and 21% had never had to give information to a client about EC. Ninety-three percent of all pharmacists were interested in a continuing education credit course about EC.

Table 1. Association between demographic, practice, and knowledge variables of support of non-prescription sales of EC

	Total N (%)	Supports EC N (%)	Does not support EC N (%)
Demographics			
Sex			
Male	48 (19.5)	28 (58.3)	20 (41.7)
Female	198 (80.5)	99 (50.0)	99 (50.0)
Type of pharmacy employed in			
Community retail **	110 (47.2)	65 (59.1)	45 (40.9)
Chain retail	64 (27.5)	17 (26.6)	47 (73.4)
Hospital**	59 (25.3)	37 (37.3)	22 (62.7)
Location of pharmacy employed in			
Urban	182 (74.9)	94 (51.6)	88 (48.4)
Non-urban	61 (25.1)	33 (54.1)	28 (45.9)
Mean years as a registered pharmacist**	18.9 (SD±12)	22.1	14.3
Pharmacy practices			
Pharmacy employed in dispenses some method of contraception**	198 (81.1)	94 (47.5)	104 (52.5)
Pharmacy employed in does NOT dispense method of contraception	46 (18.9)	32 (69.6)	14 (30.4)
Pharmacy employed in dispenses EC*	70 (37.8)	40 (57.1)	30 (42.9)
Pharmacy employed in does NOT dispense EC	115 (62.2)	47 (40.9)	68 (59.1)
Comfortable giving information about EC to client**	131 (65.2)	81 (61.8)	50 (38.2)
Not comfortable giving information about EC to a client	70 (34.8)	24 (34.3)	46 (65.7)
EC Knowledge			
Knows that EC prevents pregnancy*	129 (54.7)	77 (57.1)	52 (40.3)
Does not know that EC prevents pregnancy	107 (45.3)	46 (43.0)	61 (57.0)
Knows mechanism of EC is most like birth control pills	95 (40.8)	57 (60.0)	38 (40.0)
Does not know mechanism of EC is most like birth control pills	138 (59.2)	66 (47.8)	72 (52.2)
Knows repeated use of EC is safe	38 (16.3)	25 (65.8)	13 (34.2)
Does not know repeated use of EC is safe	195 (83.7)	96 (49.2)	99 (50.8)
Knows that increased access to EC does not cause women to stop using other methods of contraception**	72 (30.4)	50 (69.4)	22 (30.6)
Does not know that increased access to EC does not cause women to stop using other methods of contraception	165 (69.9)	73 (44.2)	92 (55.8)
Knows that EC is not a teratogen**	60 (26.0)	42 (70)	18 (30)
Does not know that EC is not a teratogen	171 (74.0)	79 (46.2)	92 (53.8)
Knows EC is effective up to 120 hours after sex	43 (18.7)	21 (48.8)	22 (51.2)
Does not know that EC is effective up to 120 after sex	187 (81.3)	100 (53.5)	87 (46.5)

* p<0.05

** p<0.01

Discussion

The purpose of this study was to identify the knowledge, attitudes, and practices in a group of Puerto Rican pharmacists regarding emergency contraceptive pills. Less

than a third of pharmacists worked in a pharmacy that dispensed EC, however more than half said their pharmacy would display information about EC, and almost all were interested in continuing education about EC.

Knowledge about EC was very low among pharmacists

in this study. Similar studies in New Mexico (11) and South Dakota (3) regarding EC reported low levels of knowledge about certain aspects of EC. In South Dakota, 37% did not know that the mechanism of EC is most like birth control, versus 61% in this study. Seventy-four percent of pharmacists in South Dakota and 68% in New Mexico did not know that EC is not a teratogen versus 74% in this study. Eighty-five percent of pharmacists in the South Dakota study did not know that repeated use of EC does not “pose health risks”, which is the same percent of pharmacists responding incorrectly in this study. Fifty-three percent of pharmacists in New Mexico did not know that EC can prevent pregnancy up to 120 hours, versus 85% of pharmacists in Puerto Rico. In the South Dakota study only 5% of respondents answered all three knowledge items correctly versus less than 1% in this study who answered all six correctly. The New Mexico study found remarkably higher overall knowledge levels among their respondents, with an average of more than 70% correct in a questionnaire of 14 knowledge items about EC.

Although this study was designed before the FDA decision allowing non-prescription provision of EC, we chose to retain pharmacists’ attitude on non-prescription EC sales as the main outcome measure because it could still affect their or their pharmacy’s decision to carry EC. Pharmacists who had been pharmacists longer, correctly answered EC knowledge questions, whose pharmacy dispensed EC, and who felt comfortable giving information to a client about EC were significantly more likely to support a non-prescription sales policy in Puerto Rico. This could suggest that increasing pharmacists’ knowledge and familiarity with EC may increase their support for its non-prescription availability. We did not, however, ask pharmacists who did not support a non-prescription EC law what their specific concerns were regarding it. It is not clear why pharmacists who work in retail community and hospital pharmacies are more likely to support non-prescription EC access than those in retail chain pharmacies. Several retail chains pharmacies have corporate policies with regards to EC dispensation that require a pharmacist who refuses to refer the patient to another in-store or nearby pharmacist and that the order is still filled within a timely manner. Such policies may influence pharmacists’ opinions about increased access to EC.

Other studies surveying pharmacists about EC have been done in the United States, however, this was the first nation-wide survey of pharmacists in Puerto Rico about emergency contraception. This study is important because Puerto Rico lacks the presence of mainstream advocacy groups, such as NARAL Pro-choice America

and the National Organization for Women, which have taken on education and awareness roles regarding EC like in many regions of the United States. Instead, smaller groups within Puerto Rico, such as Profamilia, Taller Salud, and Saludpromujer have made these public education efforts. In Puerto Rico, there is a strong political and cultural influence from the Catholic Church, which, while not unique in and of itself (in the United States there are strong religious influences on its political processes and culture as well), it still may affect pharmacists’ opinions toward EC and its availability. For instance, it is revealing how the Department of Health of Puerto Rico reacted to the FDA decision by causing public confusion about its applicability in Puerto Rico. The press reported on September 7, 2006 that the Department of Health questioned whether the legal age of adulthood in Puerto Rico, 21 years old, would make a difference in how EC was distributed (12), a polemic that took over four months to resolve (13). The FDA decision, however, makes no reference to legal adulthood and; it only states that “consumers 18 years and older” may purchase it without a prescription (14). Despite these factors, pharmacists in Puerto Rico appear to support non-prescription provision of EC at rates comparable to or higher than in some surveys conducted in other regions. In the South Dakota study, 84% disagreed with “over-the-counter EC access”, and in a small study in Pittsburgh, Pennsylvania (15), 70% disagreed with non-prescription EC sales, versus the 51% pharmacists that did support non-prescription sales in this study.

Participation bias could affect the validity of these results. For example, pharmacists with very strong negative or positive attitudes about EC may have been more likely to agree to take the survey compared to those with more moderate views. Also, the sampling frame consisted of only those pharmacists in Puerto Rico who had the means and inclination to attend the national convention. Current administrative data on the geographic, pharmacy type, and gender distribution of pharmacists in Puerto Rico were not available, so it was not possible to determine if our sample is representative of the population pharmacists.

Conclusion

Many pharmacists do not only dispense drugs, but also serve as on-the-spot health consultants for their patients whether they be asking about interactions between medications, wondering about over-the-counter medicines, or looking for family planning options. Because of this role, it is imperative that pharmacists be able to provide accurate medical information to patients about EC as well

as dispense it. EC is highly safe and effective and with the leadership of pharmacists, it presents an opportunity to fill a gap in the reproductive health needs of Puerto Rican women.

Pharmacists are now the primary providers dispensing EC because of the recent FDA decision to permit its sale without a prescription to those 18 and over. The low levels of knowledge about EC among the group of pharmacists in Puerto Rico revealed in this study indicate a need for increased educational efforts. Some strategies to increase knowledge about EC among pharmacists are the inclusion of EC in pharmacy school curricula, continuing education credit opportunities, and public information and awareness campaigns. Educational effort should also be targeted to pharmacy owners and managers, as "management or administrative decision" was one of the top three reasons pharmacists indicated that their pharmacy did not sell EC. Implementing these efforts should be feasible as most pharmacists in this study supported non-prescription sales of EC and more than 90% were interested in a continuing education course on this contraceptive method. The authors intend to use these results to guide the development of EC education modules for pharmacists in Puerto Rico.

Resumen

Contexto: La reciente aprobación por parte de la Administración de Drogas y Alimentos de Estados Unidos de la venta sin receta del medicamento Plan B, un método de anticoncepción de emergencia para personas de 18 años o más, confiere un rol prominente a los /las farmacéuticos en proveer acceso a tiempo a la anticoncepción de emergencia. Esta decisión también incluye a Puerto Rico, sin embargo, hasta la fecha no se había realizado ningún estudio sobre la venta sin receta de la anticoncepción de emergencia en Puerto Rico.

Métodos: En agosto del 2006 se administró una encuesta tipo cuantitativa para explorar el conocimiento, opiniones y prácticas sobre anticoncepción de emergencia a un grupo de farmacéutico/as que asistieron a la convención anual del Colegio de Farmacia de Puerto Rico.

Resultados: Más de la mitad de las/los farmacéuticos encuestados (51.4%) apoyaron una ley que les permitiría despachar la AE sin receta. Sin embargo, el número promedio de preguntas de conocimiento sobre contestado correctamente fue de 1.8 (SD±1.36) de un total de 6. Aquellos/as farmacéuticos que contestaron correctamente más preguntas de conocimiento sobre AE, cuyas farmacias despachan AE y que se sintieron cómodos/as en ofrecer información a sus clientas sobre AE, mostraron más inclinación a apoyar la legislación de

AE sin receta. **Conclusión:** El conocimiento sobre AE entre los/las farmacéuticos encuestados fue bajo, pero la mayoría apoyó la política de AE sin receta en Puerto Rico. Es preciso incrementar los esfuerzos educativos sobre la AE.

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