The Role of Pharmacists and Emergency Contraception:
An Assessment of Pharmacy School Curricula in the U.S. and the Knowledge, Attitudes,
and Dispensing Practices of Florida Pharmacists.

by

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Dedication

To those in the past, present, and future working for reproductive health and freedom.
Acknowledgments

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Emergency contraception is a safe and effective form of contraception that is
75%-89% effective in preventing pregnancies within 120 hours of unprotected
intercourse. Emergency contraception is a type of hormonal contraception, containing
high doses of estrogen and progestin (ethinyl estradiol plus levonorgestrel) or progestin
only (levonorgestrel). Wider access to emergency contraception has the potential to
decrease the number of unintended pregnancies and abortions in the U.S. The Food and
Drug Administration (FDA) has previously denied any over-the-counter (OTC) access to
emergency contraception and only recently approved it for OTC status for women 18
years old and over; therefore, pharmacists continue to play a critical role in providing
access to emergency contraception. For example, pharmacists can answer women’s
questions, dispel misconceptions, advise medical colleagues, and provide important
information about the medication to clients. Although emergency contraception is a safe
and effective medication, many pharmacists and pharmacies throughout the U.S. have
either refused to fill prescriptions of emergency contraception or have refused to carry
and stock emergency contraception. Pharmacists’ perceptions and practice affect
whether women have access to this form of contraception and whether pharmacies carry
this medication. In addition, pharmacists’ behavior, professional conduct, and ethical
practice and training have major implications for public health and access to care for
women, children, and families.

This study has two purposes: First, because the attitudes and dispensing practices
among pharmacists may be related to their understanding of the medication, a review of
pharmacy school curricula in the U.S. was conducted, and involved (a) an assessment of
course content related to emergency contraception and (b) an analysis of how this content
is perceived by pharmacy students. The second purpose of the study is to assess
emergency contraception knowledge, attitudes, subjective norms, perceived behavioral
control, and dispensing practices of pharmacists and to determine if pharmacists’
external contraception knowledge, attitudes, subjective norms, and perceived
behavioral control are predictive of their dispensing practices. To reach these ends, a
mixed-methods study design was employed using mixed methods data analysis
techniques including coding methods, univariate, bivariate, and logistic regression.
Chapter One: Introduction

Statement of the Problem

The prevalence of unintended pregnancy among women in the United States is disturbingly high. Indeed, it is the highest among all industrialized nations (Grimes, 2002). Approximately half of all pregnancies in the United States are unintended, with 48% of all women aged 15-44 having at least one unintended pregnancy throughout their lifetime (Henshaw, 1998). Unintended pregnancies result in consequences that have a profound effect on the physical, mental, social, economic, and developmental well-being of women, children, and their families (Misra, 2001).

Unintended pregnancy can be life-changing for all involved. Of the estimated 50% of pregnancies in the U.S. that are unintended (approximately three million annually), almost half (47%) result in abortion, 40% result in an unplanned birth and 13% result in miscarriage (Brown & Eisenberg, 1995). Although in the U.S. the medical risks involved with abortion are relatively small, the psychological impact and the emotionally taxing decision process can be great (Major et al., 2000).

In general, women with unintended pregnancies are more likely to receive insufficient or delayed prenatal care, participate in unhealthy pregnancy behaviors like smoking and drinking (Hellerstedt et al., 1998), and give birth to low birth weight infants (Brown & Eisenberg, 1995) than women with intended pregnancies. Likewise, women with unintended pregnancies are more likely to have a preterm delivery (Orr, Miller,
James, & Babones, 2000), report higher rates of maternal depression (Brown & Eisenberg, 1995), and have a greater rate of infant mortality (Brown & Eisenberg, 1995) than women with intended pregnancies. Furthermore, women with unintended pregnancies have a greater risk of physical abuse and violence and are less likely to achieve educational, financial, and careers goals (Brown & Eisenberg, 1995) than women with intended pregnancies, all of which can result in poor pregnancy, birth, and health outcomes.

If 40% of unintended pregnancies result in an unplanned birth in the U.S., 21% of all pregnancies (both intended and unintended) will result in an unplanned birth. Children from these pregnancies are more likely to exhibit poor health and development and for many reasons are more likely to live apart from one or both parents, usually the father (Brown & Eisenberg, 1995). Children who live with only one parent, usually the mother, score lower on standardized tests, have lower grade point averages, more erratic school attendance, behavioral problems, and consequently are more likely to drop out of high school, never attend college, or drop out of college, if attended, as compared with children from similar social class backgrounds and living arrangements (Brown & Eisenberg, 1995).

The potentially negative health outcomes associated with unintended pregnancy coupled with the disturbingly high rates of unintended pregnancy in the U.S. should highlight the need for careful scrutiny of this public health problem. Healthy People 2010 is a set of health objectives for the nation to works towards throughout the first decade of this century. Healthy People 2010 objectives are developed through scientific knowledge and build on objectives pursued over the past two decades. Through Healthy
People 2010, the field of public health has identified a priority to decrease the rate of unintended pregnancies from 70% to 30% by year 2010 (US Department of Health and Human Services (DHHS), 2000).

Of the 50% of the pregnancies in the United States that are unintended, half are a result of contraceptive failure (Henshaw, 1998). The high rate of unintended pregnancy in this group highlights the need for additional methods of birth control. While waiting for additional forms of birth control to be developed, a currently effective yet underutilized method of preventing unintended pregnancy, emergency contraception, is available.

Emergency contraception is a type of hormonal contraception, containing high doses of estrogen and progestin (ethinyl estradiol plus levonorgestrel) or progestin only (levonorgestrel). This medication is 75%-89% effective in preventing pregnancies when taken within 72 hours (3 days) after sexual intercourse (American Medical Women’s Association (AMWA), 1996; Kaiser Family Foundation, 2000). Recent studies conducted on the Yuzpe regimen of emergency contraception show that the 72 hour window may be restrictive and have extended effectiveness up to 120 hours (5 days); however the earlier a woman accesses emergency contraception, the more effective the medication will be (ACOG News Release, 2003; Ellertson et al., 2003).

There is one dedicated product currently on the market that is packaged as emergency contraception in the U.S. called Plan B, a progestin-only form of contraception and is orally administered where one pill is taken within 120 hours of unprotected intercourse and a second pill is taken 12 hours later. However, there are 20 other forms of birth control pills that the FDA has said are safe and effective to use as
emergency contraception (Princeton University & Reproductive Health Professionals, 2006). These pills and their dosing regimen are shown in Appendix A.

Post-coital contraception is typically taken orally in pill form although the insertion of an intrauterine contraceptive device (IUD) by a trained medical provider can be used as post-coital contraception as well (Princeton University & Reproductive Health Professionals, 2006). Emergency contraception is not effective if the woman is already pregnant (Trussell, Duran, Shochet, & Moore, 2000) and is a safe form of contraception approved by the FDA in 1997 (FDA Federal Register, 1997), with no known contraindications (Grimes & Raymond, 2002).

This form of contraception is important in that, unlike most forms of contraception, it is effective post sexual intercourse; it can be used as a back-up method of birth control when other birth control methods are not used appropriately, a condom slips or breaks, a pill is forgotten, or in cases of rape. This post-coital feature of emergency contraception is where it received its nickname as the “morning after pill” because it is effective after sexual intercourse. Because half of all unintended pregnancies are a result of contraception failure (Henshaw, 1998), and because this back-up method of birth control that can be used post sexual intercourse but before pregnancy, it is ideal for sexually active individuals.

According to the American College of Obstetrics and Gynecologists (ACOG), wider access and acceptability of emergency contraception could reduce the number of unintended pregnancies by half (ACOG, 2001) and could prevent one million abortions annually (Trussell, Steward, Guest, & Hatcher, 1992). However, it is within the first 24 hours after unprotected intercourse that emergency contraception is the most effective in
preventing pregnancy (Downing, 2001); therefore, access is a critical issue for this type of contraception. Women who have to wait for a doctor’s appointment or for the workweek to begin may delay treatment and thus decrease the efficacy of the medication, or may not be able to procure the medication at all. Because most pharmacies are open late hours and are open on weekends, when most typical doctor’s offices and clinics are not (Boonstra, 2002), pharmacies have been suggested as critical venues for emergency contraception distribution (Van Riper & Hellerstedt, 2005).

There are three main barriers to emergency contraception access that seem to perpetuate a lack of awareness and utilization of this method of birth control. First, there are certain misunderstandings in the public’s perception that surround emergency contraception. Second, health care providers and professionals do not prescribe it or neglect to inform women of its availability and third, inadequate education is provided to women about emergency contraception.

Misunderstandings in the public’s perception surround emergency contraception. One common myth is that emergency contraception acts as an abortificant (Jackson, Schwarz, Freddman, & Darney, 2003) or that it is the same as RU-486, a medical abortion (Grimes & Raymond, 2002). These misconceptions represent one way in which the definitional lines become blurred when abortion and emergency contraception are discussed. Please see Appendix B for the package inserts of both Plan B and RU-486.

Health care providers and professionals may make emergency contraception difficult to obtain, primarily due to the misconceptions discussed above. Women who are seeking these contraceptive pills may be forced to go through long appointments, unnecessary procedures such as physical exams, pregnancy tests and pelvic exams and
pay high prices (Trussell et al., 2000). In addition, physicians refuse to prescribe it; many pharmacies refuse to stock it; and many pharmacists will not fill prescriptions of emergency contraceptive pills (Henderson, 2000). In fact, up until March 3, 2006, Wal-Mart pharmacies refused to stock emergency contraceptive pills. This policy was particularly troublesome because Wal-Mart is the “world’s largest retailer and the nation’s fifth largest distributor of pharmaceuticals” (AMWA, 1996, p. 1) and in the case of some rural and poorer areas, may be the only pharmacy in town. Therefore, a policy decision made by a private pharmacy can directly limit access and eliminate choice to one of the most vulnerable populations (AMWA, 1996). Although long overdue, Wal-Mart has finally begun carrying the medication due to claims that were filed against them for refusing to fill prescriptions and from pressure from women’s rights groups (CNN.com, 2006; Wal-Mart news releases, 2006).

Lastly, what Henderson (2000) calls the “paucity of prospective information provided to reproductive age women” (p. 2) refers to the inadequate education women receive about emergency contraception. If women have no knowledge about emergency contraception, they cannot be expected to ask for it. Part of the reason that women have an inadequate knowledge base regarding emergency contraception is that clinicians do not inform women of this option on a regular basis (Trussell et al., 2000), and pharmaceutical companies fail to adequately market it (Cates & Raymond, 1997).

These barriers to emergency contraception are troubling and should be examined in greater detail. Because time is such a critical factor in terms of access and effectiveness of emergency contraception, strategies to improve access to emergency contraception have been primarily focused on collaborative drug therapy agreements with
pharmacists or through advocating for emergency contraception to go over-the-counter (OTC). Collaborative drug therapy agreements with pharmacists refer to pharmacists’ prescribing privileges for specific medications while following a set protocol. Currently 44 states in the U.S. allow these types of agreements with pharmacists for certain medications. Expansion access programs such as these allow non-physicians to prescribe and distribute emergency contraception while working in conjunction with physicians and advanced registered nurse practitioners, thereby expanding the range of providers (Gardner, Hutchings, Fuller, & Downing, 2001).

In total, nine states allow pharmacists to dispense emergency contraception without a doctor’s prescription under specific circumstances while following particular guidelines (Alan Guttmacher Institute (AGI), 2006). Of those nine, seven states (Washington, California, Alaska, Hawaii, New Hampshire, Massachusetts, and Vermont) currently have collaborative drug therapy agreements where women can acquire emergency contraception without a prescription from pharmacies under doctor-pharmacist agreements, and three states (California, Maine, and New Mexico) allow pharmacists to dispense emergency contraception without a prescription under a state-approved protocol. In addition, only one state, Illinois, has mandated that pharmacies that stock emergency contraception must fill prescriptions of the medication (AGI, 2006; Tanne, 2005).

Conversely, while eight states have expanded access programs for emergency contraception, eight states have adopted restrictions (AGI, 2006). Four states (Arkansas, Georgia, Mississippi, and South Dakota) allow pharmacists to refuse to fill prescriptions of contraception including prescriptions of emergency contraception. Two states
(Indiana and Texas) added language under their Medicaid coverage that excluded emergency contraception services, and two states (Arkansas and North Carolina) restricted emergency contraceptives from their contraception coverage mandate (AGI, 2006).

History of Emergency Contraception

A brief review of emergency contraception in the U.S. may provide further background on this important issue (see Appendix C for a graphic representation of its history). Emergency contraception pills have been administered to women since the 1960s. Packets of birth control pills were typically cut up to dispense the required dose to women with instructions for use to avoid pregnancy after sex. These pills were initially administered by feminist clinics, college health clinics, and a few Planned Parenthood clinics (Castle & Coeytaux, 2000).

In 1996, one year prior to the FDA approval of emergency contraception, a national campaign was created and sponsored by the Reproductive Health Technologies Project and Princeton University to connect consumers and clinicians to useful information on emergency contraception through an emergency contraception hotline (1-888-NOT-2-LATE), an emergency contraception website (not-2-late.com), and announcements and advertising in the media (radio, television, and outdoor events) (Ellertson, Shochet, Blanchard, & Trussell, 2000). The national website and hotline are still active today connecting consumers to providers at the local level anywhere in the U.S.

Almost three decades after emergency contraceptive pills were first administered to women, on February 25, 1997, the FDA approved six brands of oral contraceptives to
be used as emergency contraception and deemed them both safe and effective when used in prevention of a pregnancy (FDA Federal Register, 1997). Even after this approval, there was no dedicated, labeled product manufacturer of emergency contraception until September 1998 and therefore few marketing efforts were initiated before this time.

In 1997, the State of Washington began an innovative program where collaborative prescription agreements allowed pharmacists to prescribe emergency contraception to women (Wells et al., 1998). This two year project was funded by the Packard Foundation, operated by the Program for Appropriate Technology in Health (PATH) and worked in collaboration with the Washington State Board of Pharmacy, Washington State Pharmacists Association, University of Washington Department of Pharmacy and Elgin/DDB (a public relations firm that has worked with the Reproductive Health Technologies Project) (Wells et al., 1998). Their goals were to educate pharmacists, facilitate prescriptive protocols, help link clients with prescribers, increase awareness of emergency contraception to women, and to evaluate the effectiveness of the project.

The Washington State project evaluators estimate that after the first four months of program initiation, 207 unintended pregnancies and 103 abortions have been prevented through this service (Wells et al., 1998). In addition, program evaluation demonstrated an increase in prescriptions written per week and an increase in the number of calls inquiring about the medication after the initiation of this program (Wells et al., 1998). This project has demonstrated that pharmacist collaborative prescription agreements such as this one can play a vital role in making emergency contraception available and thus decreasing unintended pregnancy and abortion in the U.S.
In September 1998, Gynetics marketed Preven™, the first dedicated emergency contraception product for women. In July 1999, Women’s Capital Corporation marketed Plan B™, the first progestin-only form of emergency contraception.

Throughout this period, not only were researchers and pharmaceutical companies supporting the need for increased access to emergency contraception through advanced supply or OTC access, but many organizations in the field were supporting making emergency contraception more readily available. The American College of Obstetrics and Gynecologists (ACOG) have endorsed making emergency contraception available OTC (2001) and the American Medical Association (AMA) has disseminated policy statements in support of expanding access to emergency contraception to make the pills “more readily available” (2002).

In 2001, a petition was filed by the Center for Reproductive Rights to the FDA on behalf of over 70 organizations, including medical, public health, and others in support of emergency contraception for OTC access (CRR, n. d.). In 2003, Women’s Capital Corporation, the makers of Plan B (a type of emergency contraception), filed a second petition to the FDA in support of OTC emergency contraception.

On December 16, 2003, the FDA’s Reproductive Health Drugs Advisory and Nonprescription Drugs Panel supported making Plan B available OTC by a 27-4 vote—a major success for public health and reproductive rights advocates in the United States. However, on May 6th, 2004, the FDA struck down the recommendation from its own committee. The rejection was based on the assumption that there was not enough evidence that Plan B could be used safely by adolescent women under 16 years of age without provider supervision.
The FDA rejection letter states that “before this application can be approved, you would have to provide data demonstrating that Plan B can be used safely by women under 16 years of age without the professional supervision of a practitioner licensed by law to administer the drug” (Galson, 2004, p. 2). The letter also stipulated that alternatively, more information could be provided to support Plan B as a prescription only product for women under 16 years of age and a nonprescription product for women over 16 years of age.

After this decision was handed down by the FDA, the makers of Plan B submitted an application for OTC access to emergency contraception for women 16 years and older. Many feel that because unintended pregnancy among adolescent women is a concern in the U.S., it is imperative that they too are provided with access to safe contraceptive choices and that they are not excluded from future emergency contraception OTC policies. In fact, teens younger than 18 years old have the highest percentage (82-83%) of unintended pregnancy in the U.S. (Henshaw, 1998) and the U.S. has the highest teen pregnancy rate of all industrialized nations (Feijoo, 2001).

For years, the FDA was criticized for dragging its feet in granting any proposals for OTC access despite the fact that it fit all of the requirements for an OTC drug, and then on August 24, 2006 to the surprise of many, the FDA approved OTC access for Plan B. However, the approval of OTC access is for women 18 years and older with prescriptions required for those 17 years old and under (FDA News, 2006). Plan B is to be stocked and held at pharmacies behind the counter so that it may be dispensed with a prescription for those less than 18 years of age or by proof of age for those over 17 years of age (FDA News, 2006).
Need for the Study

Although the decision by the FDA to approve OTC access to emergency contraception for women over 17 years of age is a step forward, it is not enough. Whether emergency contraception is dispensed through a prescription to women less than 18 years of age or OTC to women over 17 years of age, pharmacists will continue to play a crucial role in access to this medication. For women over 17 years of age requesting emergency contraception OTC, pharmacists may be the first contact to a health care professional for these women as Stacie Garnett from the Emergency Contraception Network stated the day emergency contraception went OTC, “Training for pharmacists will be more important than ever as they become the first contact for women seeking EC” (S. Garnett, personal communication, August 24, 2006).

In addition, for women who seek emergency contraception by prescription, pharmacists can either aid or inhibit the doctor/patient relationship. Some pharmacists have refused to fill prescriptions of emergency contraception. When a doctor writes a patient a prescription for emergency contraception, it is the intention of the doctor to give the patient the medication. If the patient then takes her prescription to a pharmacist to fill the prescription and the pharmacist refuses to do so, the pharmacist is therefore inhibiting this doctor/patient relationship. For example, in 2004, a pharmacist in Texas would not fill a rape survivor’s prescription for emergency contraception, citing moral objections for the refusal (Reuters, 2004). In October 2005, a pharmacist in Missouri who works at a local Target store refused to fill a prescription of emergency contraception. Other reports of pharmacist refusal have come from Ohio and New Hampshire (Cantor & Baum, 2004).
In addition to pharmacists refusing to fill prescriptions of emergency contraception, some pharmacies refuse to stock this medication. Pharmacists’ knowledge, attitudes, and dispensing practices of emergency contraception may have an affect on whether women have access to emergency contraception and whether pharmacies carry the medication. Lack of access to emergency contraception can result in unintended pregnancies, which may result in unplanned births or abortions. Therefore, pharmacists’ behavior, professional conduct, and ethical practice and training all have major implications for public health and access to care for women, children, and families.

Purpose of the Study

This study has two purposes: First, because the attitudes and dispensing practices among pharmacists may be related to their understanding of the medication, a review of pharmacy school curricula in the U.S. was conducted, and involved (a) an assessment of course content related to emergency contraception and (b) an analysis of how this content is perceived by pharmacy students. The second purpose of the study is to assess emergency contraception knowledge, attitudes, subjective norms, perceived behavioral control, and dispensing practices of pharmacists and to determine if pharmacists’ emergency contraception knowledge, attitudes, subjective norms, and perceived behavioral control are predictive of their dispensing practices.

This project provides important state-level data for Florida, country-wide data on curricula for the U.S., and helped to identify geographic and demographic trends in pharmacist practices. This research advanced the state of knowledge, aided in formulating baseline data on pharmacists’ knowledge and practice, and provided a venue with which to make recommendations of ways to strengthen pharmacy school curricula.
In addition, this research may work towards the goals of mainstreaming emergency contraception and reducing unintended pregnancy and the need for abortion in the U.S.

Research Questions

Question 1: What do the 91 accredited schools of pharmacy in the U.S. teach about emergency contraception?

   Question 1a: What objectives, course assignments, course readings, and lectures concerning emergency contraception are provided in the required courses at the 91 accredited schools of pharmacy in the U.S.?

   Question 1b: What objectives, course assignments, course readings, and lectures concerning emergency contraception are provided in the elective courses at the 91 accredited schools of pharmacy in the U.S.?

Question 2: How is emergency contraception course content taught at accredited schools of pharmacy as perceived by fourth year pharmacy students at the four accredited schools of pharmacy in Florida?

   Question 2a: What did pharmacy students learn about emergency contraception in their pharmacy school classes?

   Question 2b: How was emergency contraception taught in their pharmacy school classes?

   Question 2c: What are the projected emergency contraception dispensing practices of pharmacy students?

Question 3: What is the relationship among emergency contraception knowledge, attitudes, subjective norms, perceived behavioral control, intention to dispense, and dispensing practices of Florida pharmacists registered with the Board of Pharmacy?
Question 3a: Is emergency contraception knowledge predictive of dispensing practices of Florida pharmacists?

Question 3b: Are attitudes about emergency contraception predictive of emergency contraception dispensing practices of Florida pharmacists?

Question 3c: Are subjective norms about emergency contraception (whether important people such as colleagues, supervisors, corporate headquarters, and peers think they should dispense emergency contraception) predictive of emergency contraception dispensing practices of Florida pharmacists?

Question 3d: Is perceived behavioral control, the perceived ease or difficulty of dispensing emergency contraception, predictive of dispensing practices of Florida pharmacists?

Question 3e: Is intention to dispense emergency contraception predictive of dispensing practices of Florida pharmacists?

Question 3f: Are emergency contraception knowledge, attitudes, subjective norms, perceived behavioral control, and intention to dispense taken together, predictive of emergency contraception dispensing practices of Florida pharmacists?

Assumptions

1. The pharmacists will report their knowledge, attitudes, subjective norms, perceived behavioral control, and dispensing practices accurately.

2. The pharmacy students will report their perceptions about the education they received as well as their perceptions about future dispensing practices accurately.
3. The academic Deans of the accredited schools of pharmacy will report what is covered in their curricula concerning emergency contraception accurately.

Delimitations

The following delimitations are imposed on this study:

1. Results are only generalizable to English literate pharmacists registered with the Board of Pharmacy in the state of Florida.
2. Results from the quantitative data are generalizable to only accredited schools of pharmacy in the U.S.
3. Results from the qualitative data by definition cannot be generalized to all pharmacy students.

Limitations

The following are limitations of this study:

1. Pharmacists who respond to the survey may be motivated to respond due to their attitudes about emergency contraception (both positive and negative attitudes).
2. Results of the study cannot be generalized to all pharmacists in the U.S. or all pharmacy students in the U.S.
3. Results from the study are based upon self-reports which means that reported behaviors and educational instruction may be a proxy for actual behavior and instruction.

Definitions of Relevant Terms

Abortion: Termination of pregnancy before the fetus is viable and capable of extrauterine existence, usually less than 20 weeks of gestation (or when the fetus weighs less than 500g) (Lowdermilk & Perry, 2004).
Birth Control: Practices employed by couples that permit sexual intercourse with reduced likelihood of conception and birth. The term birth control is often used synonymously with such terms as contraception, fertility control, and family planning. Birth control includes abortion to prevent a birth, whereas family planning methods explicitly do not include abortion (Population Reference Bureau, n. d.).

Conception: Union of the sperm and ovum resulting in fertilization; formation of the one-celled zygote (Lowdermilk & Perry, 2004).

Contraception: Prevention of impregnation or conception (Lowdermilk & Perry, 2004).

Depression: An intense and pervasive sadness with severe and labile mood swings (Lowdermilk & Perry, 2004).

Emergency Contraception: A type of hormonal contraception, containing high doses of estrogen and progestin (ethinyl estradiol plus levonorgestrel) or progestin only (levonorgestrel). Emergency contraception is 75%-89% effective in preventing pregnancies when taken within 120 hours (5 days) after sexual intercourse (Planned Parenthood, n. d.).

Family Planning: The conscious effort of couples to regulate the number and spacing of births through artificial and natural methods of contraception. Family planning connotes conception control to avoid pregnancy and abortion, but it also includes efforts of couples to induce pregnancy (Population Reference Bureau, n. d.).

Infant Mortality: Number of deaths per 1000 children 1 year of age or younger (Lowdermilk & Perry, 2004).
**Intended Pregnancy:** Where the pregnancy is reported to have happened at the “right time” or occurring later than desired due to infertility or other problems becoming pregnant (Brown & Eisenberg, 1995; Santelli, et al., 2003).

**Low Birth Weight (LBW):** An infant birth weight of less than 2500g (Lowdermilk & Perry, 2004).

**Miscarriage:** Spontaneous abortion; lay term usually referring to the loss of the fetus (Lowdermilk & Perry, 2004).

**Pharmacist:** A health professional trained in the art of preparing and dispensing drugs (Word Reference, n. d.).

**Pharmacology:** The science of drugs, including their composition, uses, and effects. The characteristics or properties of a drug, especially those that make it medically effective (The Free Dictionary n. d.).

**Pregnancy:** Period between conception through complete birth of the products of conception. The usual duration of pregnancy in the human is 280 days, 9 calendar months, or 10 lunar months (Lowdermilk & Perry, 2004).

**Preterm Birth:** Birth occurring before 37 weeks of gestation (Lowdermilk & Perry, 2004).

**Plan B:** Plan B consists of two white tablets, each contain glevonorgestrel .75mg. The first tablet is taken within 72 hours of unprotected intercourse, and the second tablet is taken 12 hours later (American Pharmaceutical Association (AphA) special report, 2000).

**Preven:** See Yupze Regimen of Emergency Contraception below.

**Unintended Pregnancy:** Unintended pregnancy is classified as either unwanted or mistimed. Unwanted refers to where the current pregnancy occurred when no children or
no more children were desired and mistimed refers to when the woman may have wanted to be pregnant at some point in her life but that the current pregnancy occurred earlier than desired (Brown & Eisenberg, 1995; Santelli, J et al., 2003).

*Yupze Regimen of Emergency Contraception (AKA Preven)*: Preven or the Yupze regimen consists of four blue tablets, each containing ethinyl estradiol 50ug and levonorgestrel .25mg. Two tablets are taken initially, followed by a second dose of two tablets 12 hours later (Apha special report, 2000).
Chapter Two: Literature Review

Review of Related Research

This literature review examines the existing and current literature on emergency contraception and specifically examines the literature on emergency contraception knowledge, attitudes, and dispensing practices of pharmacists. The review begins with a brief overview of emergency contraception including mechanism of action, side effects, contraindications, and teratogenicity. Next, the review focuses on the current level of knowledge and attitudes about emergency contraception among women followed by an exploration of the research conducted on the knowledge, attitudes, and prescribing practices of emergency contraception among health care professionals such as physicians, nurses, and midwives. Because little research has been conducted on pharmacists specifically, examining these relationships among other health care professionals will help inform this study.

Next, the literature review examines the few studies that have been conducted on the relationship between knowledge, attitudes, and dispensing practices of pharmacists. Lastly, this review introduces the reader to the Theory of Reasoned Action and Theory of Planned Behavior and will demonstrate how the concepts from these theories directly inform the hypothesis and research questions of this study.
Overview of Emergency Contraception

Emergency contraception is a type of hormonal contraception, containing high doses of estrogen and progestin (ethinyl estradiol plus levonorgestrel) or progestin only (levonorgestrel). This medication is 75%-89% effective in preventing pregnancies when taken within 72 hours (3 days) after sexual intercourse (American Medical Women’s Association (AMWA), 1996; Kaiser Family Foundation, 2000). Recent studies conducted on the Yuzpe regimen (estrogen and progestin) of emergency contraception show that the 72 hour window may be restrictive and have extended effectiveness up to 120 hours (5 days); however the earlier a woman accesses emergency contraception, the more effective the medication will be (ACOG News Release, 2003; Ellertson et al., 2003).

The mechanism of action of emergency contraception is the same as oral contraceptives that are administered daily. Emergency contraception works through inhibiting events that are necessary for a pregnancy to occur. Emergency contraception can work in a number of ways to inhibit:

1) Ovulation—can suppress luteinizing hormone that is needed for ovulation;
2) Fertilization—can inhibit movement of egg or sperm;
3) Transport—can inhibit the path of the fertilized egg to the uterus; or
4) Implantation—can change the endometrium so that the blastocyst is not able to implant (American Pharmaceutical Association special report, 2000).

Emergency contraception is not effective if the woman is already pregnant and therefore does not disrupt an existing pregnancy (Trussell, Duran, Shochet, & Moore,
2000). It is a safe form of contraception approved by the FDA in 1997 (FDA Federal Register, 1997).

Currently, there is only one dedicated product on the market that is packaged as emergency contraception in the U.S. called Plan B. Plan B is a progestin-only form of contraception and is orally administered and consists of two white pills containing 0.75 mg of levonorgestrel, where one pill is taken within 120 hours of unprotected intercourse and a second pill is taken 12 hours later. In the past, there was a product on the market called Preven (also known as the Yuzpe regimen) that was packaged as emergency contraception; however this product is no longer being manufactured. In addition, there are 20 other forms of birth control pills that the FDA has said are safe and effective to use as emergency contraception (Princeton University & Reproductive Health Professionals, 2006).

Whether a woman uses Plan B or one of the other 20 forms of birth control pills, emergency contraceptives are safe to use with few side effects. Common side effects include: nausea, vomiting, fatigue, breast tenderness, headache, abdominal pain, and dizziness. If these side effects do occur when taking emergency contraceptives, they go away within a few days of treatment (American Pharmaceutical Association (AphA) special report, 2000).

The side effects listed above were much more common with Preven (estrogen and progestin) and studies have shown that these side effects are lessened with the use of Plan B (progestin only). For example, a study conducted by the World Health Organization found that in comparing Plan B to Preven, Plan B caused less nausea (23% vs 51%), less vomiting (6% vs 19%), less dizziness (11% vs 17%), and less fatigue (17% vs 29%) (n.
a., 1998). In addition to these adverse effects, irregular vaginal bleeding can occur after use but the spotting is not serious. In addition, a woman’s menstrual period after using emergency contraception may be lighter or heavier than usual depending on the woman (American Pharmaceutical Association (AphA) special report, 2000).

Contraindications for the use of oral contraceptive combinations as emergency contraception that include ethinyl estradiol (estrogen) include an increased risk of thrombosis and ischemic stroke. However, the British Medicines Control Agency found that over 13 years and approximately four million doses of emergency contraception, only three cases of thromboembolism and three cases of stroke were detected (Vasilakis, Jick, & Jick, 1999). Nonetheless, it is recommended that women with a history of thromboembolic disease or stroke should not use emergency contraception as combined estrogen and progesterone and it has been suggested that perhaps they should use Plan B which is levonorgestrel only (American Pharmaceutical Association (AphA) special report, 2000; Van Look & Stewart, 1998).

Contraindications for Plan B include: being pregnant, undiagnosed abnormal genital bleeding, and an allergy to progesterone. Although being pregnant is listed as a contraindication of emergency contraception, it is listed for the most part because it would not be efficacious during a pregnancy rather than any ill effects that it may have on an established pregnancy. In fact, using oral contraceptives during a pregnancy has not been found to hurt the fetus (American Pharmaceutical Association (AphA) special report, 2000). Overall, emergency contraception is a safe form of contraception with very few side effects and contraindications.
In order for emergency contraception to be used as a physician-prescribed, over-the-counter (OTC), or pharmacist-provided medication, women, men, and health care professionals must know of its availability and must understand how it should be used. Recent research findings have suggested a low but increasing level of knowledge about emergency contraception among patients and health care providers (Conard & Gold, 2004).

Women’s Knowledge

Studies in many countries, including those in Europe, Asia, Africa, Middle East, and North America have assessed women’s level of knowledge of emergency contraception and found that these rates vary greatly. For example, in a study conducted in India where participants were given a paper-based questionnaire, neither the abortion clients surveyed (n=500) nor the college students surveyed (n=110) were familiar with emergency contraception (Tripathi, Rathore, & Sachdeva, 2003). By contrast, a nationally representative population-based study in Switzerland administered a computerized questionnaire to 4,283 sexually active adolescents aged 16 to 20 years old and found that 89% reported having heard of emergency contraception (Ottesen, Narring, Renteria, & Michaud, 2002). Similarly, in the United Kingdom, 78% of the 78 women who filled out a paper-based survey while attending an abortion clinic were familiar with emergency contraception (Mathew & Urquhart, 2005). However, in Iran only 8% of the 250 married women ages 15-48 interviewed knew about emergency contraception (Babaee, Jamali, & Ali, 2003). See Appendix D for a list of emergency contraception knowledge and attitude studies in a comparative context.
Not only do women’s levels of knowledge about emergency contraception vary from place to place, but another striking finding and commonality among the knowledge-based studies is that in most studies, a larger percentage of women report having heard of emergency contraception than the percentage of women who actually understand its correct mechanism of action. For example, although Ottesen et al. (2002) found that 89% of women in Switzerland had heard of emergency contraception, another prospective study that employed a paper-based survey sampled women requesting emergency contraception in Switzerland (n=365) and found that 42% of women incorrectly thought that the pills had to be taken within 24 hours of unprotected intercourse and 13% of the women incorrectly thought that emergency contraception was 100% effective in preventing pregnancy (Nguyen, Bianchi-Demmicheli, & Ludicke, 2003).

Similarly, a U. S. study provided a paper-based survey to 297 Latina women attending family planning clinics in Texas and found that 17% of Spanish-speaking women and 41% of English-speaking Latina women had heard of emergency contraception and 25% incorrectly believed that emergency contraception would end an existing pregnancy (Romo, Berenson, & Wu, 2004). Also in the U.S., 77% of the 158 women surveyed an inner-city emergency department had heard of emergency contraception, although only half of those who had heard of it knew how to use it. In addition, of those who had heard of it, 26% were not aware of the correct timing, 24% were not aware that it was available in the U.S., and 45% were not aware that a prescription was required for use (Abbott, Feldhaus, Houry, & Lowenstein, 2004).

In a similar study, 82% of the 188 women sampled from a Boston community had heard of emergency contraception but only about half of those women knew how
emergency contraception worked (Chuang & Freund, 2005). Also, among a sample of post-partum women from an inner-city public hospital (n=371) in the U.S., 36% of women had heard of emergency contraception and only 7% understood the appropriate timing for use (Jackson, Schwarz, Freedman, & Darney, 2000).

In countries where emergency contraception is available OTC such as Nigeria and Sweden, 58% of the 880 Nigerian female undergraduate students sampled were familiar with emergency contraception but only 18% knew the 72 hour protocol for use and 49% believed that the pills needed to be taken within 24 hours of unprotected intercourse (Aziken, Okonta, & Ande, 2003). In a study conducted in Sweden, 98% of the 800 women studied were aware of emergency contraception but 38% were not aware of the effectiveness of emergency contraception when taken on the first day and 59% were not aware of the effectiveness when taken on the third day (Larsson, Eurenius, Westerling, & Tyden, 2004).

Although there is a disparity between the percentage of women who have heard of emergency contraception and the percentage of women who understand its mechanism, there is reason to believe that both of these percentages are increasing over time. A study conducted in 1996 in the U.S. recruited women from a hospital-based clinic and drug treatment center (n=133) and then recruited a different sample of women from the same clinic in 2002 (n=139). Both groups of women were interviewed and guided by almost identical questionnaires. The researchers found that between 1996 and 2002, the percentage of clients who had ever heard of emergency contraception grew from 44% in 1996 to 73% in 2002 and comprehension of timing for use increased from 20% in 1996 to 51% in 2002 (Aiken, Gold, & Parker, 2005).
Although overall knowledge about emergency contraception has been increasing over the years, many misconceptions about emergency contraception still remain. One U.S.-based study examined the knowledge and attitudes of emergency contraception among women and men ages 18-21 (n=97) attending a university through the use of a 25-item paper-based questionnaire. This study found that almost half of the participants thought that emergency contraception was the same as RU-486, an abortifacient (Corbett, Mitchell, Taylor, & Kemppainen, 2005). Similarly, another U.S.-based study conducted a telephone survey among students attending Princeton University (n=550) and found that study participants were confused between emergency contraception and RU-486 (Harper & Ellertson, 1995).

It is clear from these studies that although women’s knowledge of emergency contraception varies, more women have heard of emergency contraception than know how to use it. That is, women may be aware that emergency contraception exists; however, they are not aware of the issues of timing, effectiveness, and how to obtain it. This finding demonstrates the need for educational efforts to address these deficits. Educational efforts should not only promote awareness of emergency contraception but should present specific information about the medication such as correct timing for use, availability, level of effectiveness, proper use, and possible side effects.

Women’s Attitudes

Much like knowledge, women’s attitudes towards emergency contraception vary. In many studies, women tended to have positive attitudes about emergency contraception. For example, in the study of Iranian women (n=250) where 8% of women had heard of emergency contraception, 77% of the women surveyed were found to have a positive
attitude about it and reported that they would be willing to use it in the future or tell other people about it after they were informed of what the medication was and how it worked. Because the percentage of women who had heard of emergency contraception was so low, attitude was measured after each participant was read a paragraph explaining what it was and how it worked (Babaee et al., 2003).

Positive attitudes were also found in other studies. Among the Swedish women studied (n=800), 90% agreed that access to emergency contraception is positive (Larsson et al., 2004). Of the 76 women surveyed in an abortion clinic in the UK, 90% of the women said they would consider using emergency contraception in the future (Mathew & Urquhart, 2005). And in the study of women recruited from a U.S. urban hospital and drug treatment center (n=139), over half of the women thought that there may be a future need to use emergency contraception, and of those that perceived a future need, 95% reported that they would use it if needed (Aiken et al., 2005).

Although most studies found positive attitudes towards emergency contraception, two studies found attitudes that were not as positive. In the study conducted in the inner city emergency department in the U.S. (n=158), 51% of women reported that they would think about using emergency contraception if they needed it; however 17% reported moral or religious objections to its use (Abbott et al., 2004). Also, among the university men and women that were surveyed in the U.S. study (n=97), 100% of the women who reported to be unlikely to choose emergency contraception said that they would feel judged or embarrassed if they had to ask for it (Corbett et al., 2005). Unfortunately, the article did not mention how many women reported to be unlikely to choose emergency contraception.
Some researchers conducted further investigations into women’s attitudes about emergency contraception and discovered a relationship between approval of emergency contraception and political and religious views. Harper and Ellertson (1995) found that political and religious affiliations were significant predictors of student attitudes. Specifically, they found that Democrats (86%) were more approving of emergency contraception than Republicans (71%) or Independents (63.5%). Also, highly religious students were less likely to recommend emergency contraception to women than those who were not religious.

Harper and Ellertson (1995) also found a positive correlation between emergency contraception knowledge and attitudes, that is, when the level of knowledge about emergency contraception increased, so did the positive attitudes about its use. In fact, the odds of the favorable attitudes of emergency contraception were 148% higher among participants that understood the side effects when compared to those who did not. This relationship between knowledge and attitudes was also demonstrated among Latina women surveyed in the U.S. (n=297). These researchers found that only half of women who have heard of emergency contraception said that they would be willing to use it in the future and those who did not comprehend the action of emergency contraception were even less likely to say that they would use it in the future (Romo et al., 2004).

In contrast to these findings, the U.S. based study of 371 post-partum women from an inner-city public hospital found that while two-thirds of these women reported a willingness to use emergency contraception in the future, only 7% understood the correct timing for use (Jackson et al., 2000). This finding that willingness to use the medication was high even though comprehension of timing was low seems to conflict with the
previous study that found that the willingness to use emergency contraception decreased as the comprehension of action decreased.

In summary, women’s attitudes about emergency contraception vary. However, in most studies, women held positive attitudes about emergency contraception. In addition, there seems to be little consistency in the relationship between knowledge and attitudes. For example, some studies showed high knowledge and positive attitudes, some studies showed low knowledge and positive attitudes for future use, while other studies showed low knowledge and negative attitudes towards emergency contraception. However, one thing that can be surmised is that education should be provided to women who are willing to use emergency contraception but are unfamiliar with it. It is important to note that in some studies approval of the birth control pill was related to political or religious views. These views may account for the studies that found high knowledge and low attitudes about emergency contraception; however more research is needed to uncover these relationships.

*Healthcare Professionals’ Knowledge, Attitudes, and Practice of Emergency Contraception*

Several studies have assessed healthcare professionals’ knowledge, attitudes, and prescribing practices of emergency contraception. For the purposes of this literature review and study, the research conducted on healthcare professionals is reported separately from the research conducted on pharmacists. This section will focus on studies conducted on all other healthcare professionals except for pharmacists and the next section will focus solely on pharmacists. In addition, the terms health care professionals and providers will be used interchangeably.
Provider Knowledge

Overall, provider studies on knowledge about emergency contraception have found that while most providers have general knowledge about emergency contraception, detailed knowledge is low. For example, one U.S.-based study mailed a questionnaire to 236 pediatricians and 121 surveys were returned. They found that all but one doctor responded that they had heard of emergency contraception but around half of the pediatricians did not know the timing of emergency contraception or that it was FDA-approved (Sills, Chamberlain, & Teach, 2000). See Appendix E for a list of provider knowledge, attitude, and prescribing practice studies in a comparative context.

In another U.S.-based study, 954 pediatricians were mailed a five-page survey and 233 responded. Findings indicated that pediatricians had a lack of detailed knowledge about emergency contraception. For example, 72.9% of respondents could not identify the FDA-approved methods for emergency contraception and roughly 72% of respondents could not identify the correct timing for the drug (Golden et al., 2001).

Low levels of knowledge were also found in a study conducted on 180 family planning providers in Turkey where only half of the providers knew the correct timing and dose interval of emergency contraception. In addition to this lack of detailed knowledge, these providers had major misconceptions about emergency contraception (Uzuner et al., 2005). Over 39% of respondents believed that emergency contraception causes abortion and 31.1% thought that it was harmful for the fetus. In addition, almost 79% of respondents incorrectly thought that pill use may increase unprotected intercourse and 75% thought that use will lead to men giving up on condom use. Interestingly,
female providers had more negative impressions regarding the above statements than male providers (Uzuner et al., 2005).

Another U.S.-based study conducted on 78 providers consisting of family physicians and nurse providers explored provider perceived knowledge and actual knowledge. Among the 78 providers, 96% reported that they were knowledgeable on the indications for use and 78% reported that they understood the protocols for prescribing emergency contraception, although knowledge inaccuracies were found between perceived and actual knowledge. Also, 44% of providers inaccurately thought that emergency contraception was an abortifacient (Wallace, Wu, Weinstein, Gorenflo, & Fetters, 2004).

Another U.S.-based study gave self-administered questionnaires to 102 providers including physicians, registered nurse practitioners, certified nurse midwives, and physician assistants and measured level of knowledge, attitudes, and practices of emergency contraception before and after an educational program. The educational program involved a training of providers through a lecture presentation and a review of a clinical manual. The clinical manual included pertinent information about emergency contraception and each provider was given a clinical manual to keep. At baseline, one-third of the sample did not know the correct timing for emergency contraception. At follow-up, one year later, knowledge about emergency contraception significantly increased. However, at follow-up, providers still maintained limited knowledge about the medication’s side effects and modes of action. Overall this study found that an educational training for providers can help increase knowledge about emergency contraception; however the finding that there were still a few gaps in knowledge suggests
a need for even more education and training (Beckman, Harvey, Sherman, & Petitti, 2001).

In contrast to these studies where the general knowledge is high, some non-U.S. based studies found that even general provider knowledge about emergency contraception was absent. One study conducted in Turkey found low levels of knowledge among 72 health care providers which included general practitioners, nurses, and midwives (Sevil, Yanikkerem, & Hatipoglu, 2006). These researchers used face-to-face interviews as well as paper-based self administered questionnaires. They found that almost one in ten providers surveyed was unfamiliar with the words ‘emergency contraception’ and they concluded that knowledge about emergency contraception among health care providers is inadequate. In addition, a study conducted on the knowledge, attitudes and practice of family planning among community health extension workers (n=232) in Nigeria found an absence of knowledge about emergency contraception (Onwuahafua, Kantiok, Olafimihan, & Shittu, 2005).

Provider Attitudes

In addition to low levels of knowledge and major misconceptions about emergency contraception, several studies identified negative attitudes towards emergency contraception. Golden et al. (2000) surveyed 233 practicing pediatricians and found that 68% of respondents felt uncomfortable prescribing emergency contraception, with inexperience cited as the most common reason (70%). Seventeen percent did not prescribe due to perceived teratogenic effects and 12% did not prescribe due to moral or religious reasons. In addition, 22% agreed that emergency contraception provision
encourages adolescent risk-taking behavior and 52% said they would place restrictions on how many times they would dispense the drug to a patient (Golden et al., 2000).

Another U.S.-based study conducted on 78 providers consisting of family physicians and nurse providers found generally positive attitudes towards prescribing emergency contraception, although the actual rates of prescribing were low. Of the 78 providers studied, 90% thought that the pill was an appropriate topic of discussion at women’s exams and felt that the benefits of emergency contraception outweighed the risks. However, due to fear of repeated pill use, 59% of providers said they would restrict how many times they prescribed emergency contraception to a woman. Also, 14% thought that emergency contraception use would discourage regular contraceptive use, 16% were uncomfortable prescribing emergency contraception for religious or ethical reasons, and 7% said that they would not prescribe emergency contraception under any circumstances (Wallace, et al., 2004).

Interestingly, in a 2001 in the U.S.-based study that surveyed 102 providers and measured levels of knowledge, attitudes, and practices of emergency contraception before and after an educational program, follow-up knowledge and prescribing practices increased while attitudes about emergency contraception showed little change (Beckman et al., 2001). This finding may indicate the difficulty of producing a change in provider attitudes.

Provider Prescribing Practices

In general, research conducted on provider prescribing practices of emergency contraception has shown prescribing frequency among providers to be low, regardless of specialty. That is, most providers have prescribed emergency contraception at one point
or another, but report prescribing the medication less than five times per year (Delbanco et al. 1998; Gold, Schein, & Coupey, 1997; Sills et al., 2000; Chuang, Waldman, Freund, & Ash, 2004). Unlike the low rates of prescribing among U.S. providers, a national study of British health authorities found that the majority of physicians surveyed report that they prescribe emergency contraception a few times per week (Webb & Morris, 1993).

A mail-based survey conducted in the northeast region of the U.S. sought to compare emergency contraception prescribing practices among 282 providers and found that 94% of obstetricians/gynecologists, 76% of family practitioners, and 63% of general internists had ever prescribed emergency contraception. This study found that being female was a positive predictor (OR: 9.6, 95% CI: 3.2-29.1) and the Catholic religion was a negative predictor (OR: .39, 95% CI: .19-.79) for prescribing emergency contraception. In addition, 75% of the physicians surveyed (86% of general internists, 82% of family physicians, and 57% of obstetricians-gynecologists) reported infrequent prescribing of emergency contraception (less than five times a year), regardless of their specialty (Chuang, et al., 2004).

A study conducted in India found a very low level of prescribing of emergency contraception. Researchers found that 84% of gynecologists and 41% of general practitioners were vaguely familiar with emergency contraception, although among those who had some knowledge, most were unsure of how to prescribe it. In fact, 51% of gynecologists and 17% of practitioners reported ever prescribing it (Tripathi et al., 2003).

It is interesting to note that in both of these studies discussed above the prescribing frequency among providers is low; however, women health care providers like gynecologists tended to have a higher level of knowledge and a higher prescribing
frequency of emergency contraception than non-women specific health care providers such as pediatrics or general practitioners.

An additional U.S.-based study conducted on 78 providers consisting of family physicians and nurse providers, also found low prescribing practices (Wallace et. al., 2004). Of the 78 providers studied, 74% reported that they have prescribed emergency contraception in the past, with an average of 3.2 times in the past year.

In a U.S.-based study that surveyed 102 providers and measured level of knowledge, attitudes, and practices of emergency contraception before and after an educational program, at baseline only 7% of providers reported prescribing emergency contraception once a month. At follow-up, prescribing frequency of emergency contraception significantly increased (Beckman et al., 2001). For example, providers who prescribed emergency contraception at least once per year rose from 30% to 49% and providers who reported prescribing emergency contraception at least once a month rose from 7% at baseline to 26% at follow-up. These findings indicate that an educational program may help increase the frequency of provider prescription writing.

Although many of these studies discussed measured knowledge, attitudes, and prescribing practices independently, very few studies have evaluated provider practices in relation to provider knowledge and attitudes. One study found that knowledge about emergency contraception was significantly related to prescribing practice whereas attitudes about emergency contraception were not found to be significant predictors of prescribing it (Sills et al., 2000). For example, two of the knowledge variables, knowledge of the timing of emergency contraception and knowledge that it is FDA-approved, were predictive of emergency contraception counseling and prescribing. In
contrast, none of the attitude variables including, (a) whether they thought emergency contraception causes a risk of congenital malformation, (b) concern about giving or prescribing the medication, (c) whether it should be used in rape cases, or (d) whether a provider thought that the side effects of were serious, were predictive of prescribing writing or counseling. This study suggests that knowledge, not attitudes, is a significant predictor of emergency contraception prescribing. However, another study found just the opposite. Gold et al. (1997) found that four out of the eight negative attitude variables did correlate to failure to prescribe emergency contraception. In addition, another study performed a cross-sectional survey of 96 faculty physicians and found that 42% of physicians intended to prescribe emergency contraception for teenagers, whereas 65-77% of the sample intended to prescribe to other identified groups. This study also found that intention to prescribe was associated with positive attitudes but physicians’ knowledge about emergency contraception was not found to be significant (Sable, Schwartz, Kelly, Lisbon & Hall, 2006). This discrepancy in research findings merits further inquiry into determining the predictors of emergency contraception prescription writing.

**Pharmacists’ Knowledge, Attitudes, & Dispensing Practices of Emergency Contraception**

In the only study of its kind, Van Riper and Hellerstedt (2005) assessed pharmacist knowledge, attitudes, and dispensing practices of emergency contraception among South Dakota pharmacists. A 14-item survey was mailed to all registered pharmacists (n=810) in South Dakota to assess their attitudes, knowledge, and dispensing practices of emergency contraception and 62% responded. Among respondents, only 54% of pharmacists worked in pharmacies that carried emergency contraception. For those that carried the medication, 67% of pharmacists had dispensed emergency
contraception in 2003 but 24% reported that they were not comfortable providing counseling to clients about the medication. Dispensing practices did not vary by gender.

Findings also suggested that there was low knowledge about emergency contraception among South Dakota pharmacists, as 37% were unaware that the medication is similar in its mechanism to oral contraceptives. In addition, 74% of pharmacists either incorrectly agreed or were uncertain about whether emergency contraception can cause birth defects when administered to pregnant women and 85% of respondents either incorrectly agreed or were uncertain about the statement that repeated use of the medication can pose health risks. Only 5% of the sample correctly answered all five of the knowledge questions on the survey (Van Riper & Hellerstedt, 2005). In contrast to dispensing behaviors, knowledge and attitudes about emergency contraception did vary by sex where more female pharmacists opposed making emergency contraception over-the-counter.

One limitation of this study is that the researchers did not include enough questions about attitudes towards emergency contraception and did not question whether the pharmacist had personal or moral objections about dispensing the medication. In addition, this study did not ask questions about knowledge of other contraceptive medications to assess whether there was a lack of knowledge about all contraceptives or just emergency contraception.

Although there have been no other published state-wide studies on the knowledge, attitudes, and dispensing practices of pharmacists, there have been, however, a handful of studies that assessed pharmacists’ knowledge and attitudes about emergency contraception and one study that assessed pharmacists’ knowledge, attitudes, and beliefs...
towards *prescribing* emergency contraception. These five studies will be discussed below in chronological order. Please see Appendix F to view these studies in a comparative context.

In 1999, a study was conducted by the Planned Parenthood of New York City. They conducted a phone survey of 100 retail pharmacists who practiced in New York City and only 3 out of 100 pharmacists surveyed provided correct information about emergency contraception, while 38 pharmacists did not know it was available in the U.S. (Draut, 1999). In their article, Planned Parenthood compiled some interesting quotes provided by pharmacists upon being called and asked about emergency contraception. They are as follows: “…never heard of the morning-after pill…”, “Don’t have it…don’t know anything about it”, “There’s no morning-after pill available in this country.”, “…it’s used to induce periods and it starts contractions..it is abortion”, “It must be taken within one day, that’s why it’s called the morning-after pill.” (p. 2-3).

The second study, conducted by Bennett, Petraitis, D’Anella, and Marcella in 2003, randomly selected pharmacies in Pennsylvania and assessed pharmacist knowledge (accuracy of information provided to client) and availability of emergency contraception through employing “mystery callers”. These mystery callers called the pharmacy and spoke to 315 pharmacists. They asked questions that assessed knowledge and assessed whether the particular pharmacy could dispense emergency contraception that day. The findings from the study indicated that knowledge about and access to emergency contraception was limited. In fact, 30% of the pharmacists surveyed did not provide the correct timing required for emergency contraception administration where 23% thought it needed to be taken within 24 hours and 7% thought it needed to be taken within 48 hours.
In addition, 13% of the pharmacists said that emergency contraception would cause an abortion (Bennett et al. 2003). Sixty-five percent of the pharmacists sampled reported that they would not be able to fill a prescription of emergency contraception that day. Of those who reported that the medication could not be filled that day, 79% said the medication was not in stock, 6% replied that it was against store policy, 7% reported that it conflicted with personal beliefs, and 8% did not provide a reason.

A potential limitation of this study is that attitude of the pharmacist was measured by the mystery caller recording the attitude she felt from the pharmacist toward her after the call ended. This variable was measured on a 5-point graded scale, from very unpleasant to most pleasant (Bennett et al., 2003).

The third study, conducted in Indiana, mailed a survey to chief pharmacists (n=948) at 1361 pharmacies and assessed pharmacists’ attitudes towards practice with adolescents (Conard, Fortenberry, Blythe, & Orr, 2003). The study’s main goal was to address pharmacists’ attitudes and practice with adolescents concerning all medications, and although emergency contraception wasn’t the focus of the study, it was included in the list of medications.

One interesting finding from this study was that although the majority of pharmacists dispensed medication to adolescents, 57% reported feeling inadequately trained for handling adolescent-related issues. Another important finding was that 48% of the pharmacists surveyed did not dispense emergency contraception. Age was found to be a significant factor in that pharmacists under 45 years of age were more likely to report dispensing emergency contraception; however no differences were found for sex (Conard et al., 2003).
Of the 59% of pharmacists who have dispensed emergency contraception to adolescents, 83% said that they felt uncomfortable dispensing it. There were no differences in feelings of comfort based on age or sex (Conard et al, 2003). These findings that emergency contraception is unavailable at pharmacies and that pharmacists either don’t dispense or are uncomfortable dispensing emergency contraception to adolescents is of concern in that it places barriers to access to emergency contraception for adolescents.

A fourth study, conducted in Sweden, where emergency contraception is sold both over-the-counter and in clinics and hospitals, assessed attitudes towards emergency contraception and its OTC availability among pharmacists and pharmacy staff (n=237) and nurse-midwives (n=163) through a mail-based survey (Aneblom, Lundborg, Carlsten, Eurenisu, & Tyden, 2004). The reason this study chose to survey pharmacists, pharmacy staff, and nurse-midwives is because these individuals represent the professionals in Sweden that are the main providers and counselors of emergency contraception.

The findings showed that both study groups had positive attitudes towards emergency contraception and towards the OTC administration of emergency contraception; however nurse midwives demonstrated more favorable attitudes than the pharmacist group. In addition, verbal information and counseling to clients on issues of emergency contraception was more commonly reported by the nurse-midwife group than by the pharmacist group and both groups reported that they wanted more collaboration between health care providers (Aneblom et al., 2004).

The fifth study, conducted in New Mexico, sought to describe pharmacists’ knowledge, attitudes, and beliefs towards prescribing emergency contraceptives through
a mail-based questionnaire (Borrego et al., 2006). Of the 1392 questionnaires that were delivered, 555 (40%) were returned but only 523 (38%) could be used. Overall, they found that although New Mexico pharmacists had positive attitudes and beliefs about prescribing emergency contraception, their knowledge about the medication was average. In addition, 40% of the sample had an interest in becoming certified to prescribe emergency contraception in their state-approved emergency contraception prescribing training program.

New Mexico is one of three states (California, Maine, and New Mexico) that allow pharmacists to dispense emergency contraception without a prescription under a state-approved protocol. Pharmacists who had an interest in becoming certified to prescribe emergency contraception were more likely to be male, non-Hispanic, non-Christian, to report liberal or moderate political views, and to say that they had employer approval, time, and privacy at their pharmacy to prescribe emergency contraception.

New Literature

Since the original writing of this literature review, a few pertinent studies have been published and will be addressed here. One study has been published describing the knowledge, attitudes, and practices among pharmacists in Puerto Rico (Fuentes & Azize-Vargas, 2007). Pharmacists attending a national conference were surveyed. Although it was found that emergency contraception knowledge was low among these pharmacists, they were in support of a non-prescription emergency contraception policy.

Another study assessed student pharmacist knowledge and attitudes surrounding emergency contraception (Evans, Patel, & Stranton, 2007). A group of pharmacy students were sent an electronic survey measuring knowledge, attitudes, and
demographics. Researchers found that religious and political views played a role in
determining student attitudes about emergency contraception. They also found that high
levels of knowledge equates to more support and fewer concerns regarding use of
emergency contraception. This study aids in strengthening the results of this study in
terms of need for effective teaching and efficient learning.

Another few provider studies were published since this literature review, one
concerning a cross-sectional survey faculty physicians about intention to educate patients
about emergency contraception at four U.S. universities (Kelly, Sable, Schwartz, Lisbon,
& Hall, 2008), and one study that assessed provider knowledge, attitudes, practice, and
barriers at a military treatment facility in the U.S. (Chung-Park, 2008). The first study
found that attitudes and peer expectations around educating predicted intention to educate
patients about emergency contraception among faculty physicians. The second study
found low knowledge among the sample of providers such that there was a discrepancy
between what providers perceived knowing and actual knowledge. The first study
concludes that attitudes and beliefs should be addressed when creating interventions and
the second study calls for better education among providers.

Summary & Recommendations for Future Research

Women’s Knowledge & Attitudes

Overall, women’s knowledge and attitudes about emergency contraception vary.
In terms of women’s knowledge, more women are aware that emergency contraception
exists; however, they are not aware of the issues of timing, effectiveness, and how to
obtain it. This finding demonstrates the need for educational efforts to address these
deficits. Educational efforts should not only promote awareness of emergency
contraception but should present specific information about the medication such as
correct timing for use, availability, level of effectiveness, proper use, and possible side
effects.

In terms of women’s attitudes towards emergency contraception, most women
had positive attitudes about the medication and these attitudes were not dependent on
level of knowledge. In fact, there was little consistency in the relationship between
knowledge and attitudes of emergency contraception. For example, some studies showed
high knowledge and positive attitudes, some studies showed low knowledge and positive
attitudes for future use, while other studies showed low knowledge and negative attitudes
towards the medication. Future research could examine the relationship between
emergency contraception knowledge and attitudes among women and determine what
causes these inconsistencies. However, one thing that can be surmised is that education
should be provided to women who are willing to use emergency contraception but are
unfamiliar with it. Another interesting finding was that in some studies, approval of the
pill was related to political or religious views. These views may account for the studies
that found high knowledge and low attitudes about emergency contraception; however
more research is needed to uncover these relationships.

*Health Care Professionals’ Knowledge, Attitudes, & Practice*

When comparing the provider studies, it becomes evident there is a paucity of
detailed knowledge about emergency contraception among providers and there are major
misconceptions that seem to persist. It seems that providers, specifically those who work
with women of childbearing age and whose duty it is to care for the health of women,
should have both salient and specific knowledge about emergency contraception.
Unfortunately, these studies show that precise knowledge among healthcare professionals is inadequate. Therefore, these findings suggest that training is needed for healthcare professionals. Healthcare providers need more detailed information about emergency contraception which would most likely increase the rate of knowledge and use by clients, decrease the misconceptions held by providers, and increase provider prescribing frequencies. Future research could test these hypotheses.

Although the knowledge that providers have about emergency contraception is generally consistent in the literature, provider attitudes tend to vary with some reporting positive and some reporting negative attitudes. This finding may be due to the fact that people are different and there may be as many varying attitudes as there are people. However, more research is needed in this area.

Another interesting finding was the gender differences detected in three of the health care provider studies. One study found that women health care providers were more likely than male health care providers to have negative attitudes towards emergency contraception, the second study found that they were more likely than their male counterparts to say that emergency contraception should not go over-the-counter (OTC), and the third study found that being female was a positive predictor of prescribing emergency contraception. The first two studies point towards female providers having more negative attitudes towards emergency contraception than male providers but the third study demonstrates that women providers are more likely to prescribe the medication. These gender differences are noteworthy and should be explored in greater detail.
In general, results from studies show low prescribing rates of emergency contraception among health care providers in the U.S. One study found that being female was a positive predictor and being Catholic was a negative predictor of prescribing emergency contraception. Two other studies found that knowledge was a predictor of prescribing emergency contraception but conflicted on whether provider attitude was a significant predictor of emergency contraception prescription writing. More research is needed to uncover these relationships and inconsistencies and to determine what predicts prescribing practices. Also, given the high abortion rate in this country, efforts should be taken to increase the number of emergency contraception prescriptions that are written which may aid in a decrease in abortion and unintended pregnancy rates in the U.S.

Pharmacists’ Knowledge, Attitudes, & Dispensing Practices

A major finding from the pharmacist studies is that many pharmacies in the U.S. do not carry emergency contraception. This finding is troublesome in that access is certainly limited if pharmacies do not carry the medication. Another major finding is that there are many pharmacists that do not feel comfortable dispensing emergency contraception to adolescents and also do not feel confident in counseling women about emergency contraception. Perhaps future research could test if comfort levels in counseling women and dispensing the medication would increase if knowledge about emergency contraception was increased and misconceptions were dispelled.

Much like the health care provider literature, when viewing the pharmacist studies it becomes apparent that there is a lack of detailed knowledge and understanding about emergency contraception among pharmacists and major misconceptions persist as a result. These studies show that precise knowledge among pharmacists is inadequate
suggesting that training is needed for pharmacists. Pharmacists need more detailed information about emergency contraception which may result in an increased rate of knowledge and use by clients, a decrease in the misconceptions held by pharmacists, increased provider dispensing frequencies, as well as increased comfort in counseling about emergency contraception. Future research is needed to test these hypotheses.

Although studies have shown that the knowledge that pharmacists have about emergency contraception is generally low, more research is needed in determining the attitudes of pharmacists as they tended to vary with some reporting positive and some reporting negative attitudes. In addition, given that there is only one study that measured the self-reported emergency contraception dispensing practices of pharmacists, more research is needed to understand the prescribing practices of pharmacists.

It is also important to note that there is limited research on emergency contraception and pharmacists as there have only been five U.S.-based studies concerning these topics. In addition, no other study except the Van Riper and Hellerstedt (2005) South Dakota study, assessed pharmacists’ attitudes, knowledge, and dispensing practices of emergency contraception. However, Van Riper and Hellerstedt (2005) failed to determine whether pharmacist knowledge and attitudes about emergency contraception predict dispensing practices. The proposed study will be the first to test these relationships.

Given the low levels of knowledge detected among pharmacists in the few studies conducted, it is imperative to find out what pharmacists are learning about emergency contraception in school. Therefore, this study proposes to perform a curricula review of
all 91 accredited schools of pharmacy in the U.S. to determine what is being taught about emergency contraception to pharmacy students.

This study has two purposes: First, because the attitudes and dispensing practices among pharmacists may be related to their understanding of the medication, a review of pharmacy school curricula in the U.S. will be conducted, and will involve (a) an assessment of course content related to emergency contraception and (b) an analysis of how this content is perceived by pharmacy students. The second purpose of the study is to assess emergency contraception knowledge, attitudes, subjective norms, perceived behavioral control, and dispensing practices of pharmacists and to determine if pharmacists’ emergency contraception knowledge, attitudes, subjective norms, and perceived behavioral control are predictive of their dispensing practices.

*The Theory of Reasoned Action*

The theory that will guide this research, the Theory of Planned Behavior (TPB), is an extension of the earlier Theory of Reasoned Action (TRA) which was developed by Ajzen and Fishbein (1980; Fishbein & Ajzen, 1975). The Theory of Reasoned Action was first introduced in 1967 (Fishbein, 1967), and is based on the assumption that people are rational beings who make informed decisions based on available information. Thus, the theory is called the Theory of *Reasoned* Action because it assumes that people consider the implications of their actions before deciding whether to perform a particular behavior (Ajzen & Fishbein, 1980).

The Theory of Reasoned Action’s primary purpose is to both predict and understand behavior. The Theory also postulates that behavioral intention is the most important predictor of behavior. That is, people typically behave in line with their
intentions. Therefore, a secondary purpose of the TRA is to understand the determinants of intentions. Following in line with the theory, behavioral intention is determined by two factors, (a) personal attitudes toward the behavior and (b) social influence or subjective norms. Personal attitudes toward a behavior refer to a person’s judgment in performing the behavior. For example, whether a person believes performing a behavior is good or bad is a personal judgment towards a particular behavior. Social influence or social norms, the second determinant of intention, refers to the perceived social pressures to perform or not perform a particular behavior. In general, a person intends to perform a behavior when they have a positive attitude towards the behavior and when they perceive that important people think they should engage in the behavior (Ajzen & Fishbein, 1980). See Figure 1 for a graphic representation of the Theory of Reasoned Action.

The TRA also postulates that both attitude and social norms play a role in behavioral intention; however the relative weights of these factors in terms of influencing intention differ from person to person (Ajzen & Fishbein, 1980). For example, take two women who are deciding whether or not to use birth control pills. Both women have the same attitudes and social norms towards using the pill; they both want to use the pill (attitude towards behavior) but feel social pressure not to use the pill (social norms), however, one woman decides to use the pill and the other does not. This difference could be because one woman places more emphasis on her attitudes to determine her intention to use the pill and the other woman places more emphasis on social pressures to determine her intention to use the pill. Either way, both of their attitudes and perception of social pressures were the same but the relative weights of the attitudes and social factors varied and thus the behavior was different (Ajzen & Fishbein, 1980).
The Theory of Planned Behavior

The Theory of Planned Behavior (TPB), which was developed after the Theory of Reasoned Action (TRA), includes an additional construct, *perceived behavioral control*. Whereas the Theory of Reasoned Action was developed to deal with volitional behaviors, the Theory of Planned Behavior was developed to incorporate behaviors that are not altogether volitional. For example, a smoker may intend to quit smoking but when tries to quit, is unable to do so. Control over behavior is thus viewed on a continuum with one extreme including something such as voting for a particular candidate in a voting booth where the selection is performed at will and the other extreme includes actions like sneezing or decreasing one’s blood pressure where people have limited control (Ajzen, 1988). Although these examples are extremes, the point is that many factors can interfere with the relationship between intention and behavior.

Ajzen’s Theory of Planned Behavior was developed in an attempt to present a conceptual framework that addresses this incomplete volitional control (Ajzen, 1985; Ajzen & Madden, 1986; Schifter & Ajzen, 1985). The TPB postulates that there are three (rather than the two addressed in the TRA) determinants of intention. The two that were addressed in the Theory of Reasoned Action, (a) attitude toward behavior and (b) 

![Figure 1. Theory of Reasoned Action](image-url)
subjective norms, are still present and then a third determinant, (c) perceived behavioral control is addressed in the Theory of Planned Behavior. Perceived behavioral control refers to how difficult or easy the behavior is to perform and according to Ajzen, this difficulty or ease of the behavior is “assumed to reflect past experience as well as anticipated impediments and obstacles” (1988, p. 132). See Figure 2 for a graphic representative of the Theory of Planned Behavior. In general, there is a direct positive relationship between the three determinants. That is, as attitude and subjective norms towards the behavior become more favorable, the perceived behavioral control becomes greater and the intention to perform a particular behavior increases as a result (Ajzen, 1988).

*Figure 2. Theory of Planned Behavior*

There are two important features of perceived behavioral control. The first is that it has motivational implications for intentions. That is, individuals who do not have the resources or the opportunities to perform a behavior and not likely to develop strong
behavioral intentions even though they may have favorable attitudes toward the behavior and feel that people important to them would approve of the behavior. This is why there is a straight line from perceived behavioral control to intention shown in figure 2, because attitude and subjective norm may not mediate the relationship between perceived behavioral control and intention (Ajzen, 1988).

The second important feature of perceived behavioral control is that it may have a direct link to behavior as shown in figure 2. Perceived behavioral control can help predict behavior or it can bypass behavioral intention altogether which reflects the idea that perceived behavioral control can be a measure for actual control. Therefore, perceived behavioral control can predict behavior through intentions and can also predict behavior directly as a proxy measure for actual control (Ajzen, 1988).

This third determinant of intention is particularly relevant to the proposed study because a pharmacists’ emergency contraception dispensing practices may vary based on the perceived difficulty or ease of dispensing the medication. That is, emergency contraception dispensing practices of pharmacists may not be under their volitional control and therefore this third determinant of intention may be relevant for the study. For example, if a pharmacist does not want to fill a prescription of emergency contraception but perceives that if she or he refuses that they may be fired, the pharmacists may decide to dispense the medication anyway.

Taking from the concepts, assumptions, and propositions of the TPB, it is hypothesized that if pharmacists intend to dispense emergency contraception then they will have a positive attitudes towards dispensing the medication and will perceive that important people think they should dispense the medication. In addition, there will be a
positive relationship between attitudes, subjective norms, and perceived behavioral control. For example, if positive attitudes towards dispensing are high and if subjective normative beliefs are high (perception that important people think they should dispense the medication), than perceived control over the dispensing will also increase. As a result, the intention to dispense emergency contraception will increase which will increase the actual behavior of dispensing. Likewise, if pharmacists do not intend to dispense emergency contraception, they will have negative attitudes towards dispensing the medication and will perceive that important people think they should not dispense emergency contraception. In addition, if the attitudes and subjective norms are low, the perceived control over dispensing the medication should also be low. This way, the intentions to dispense will be low and the actual behavior of dispensing emergency contraception will be low as a result. See Figure 3 for a graphic representation of how this theory may be applied to the research study.

Although the Theory of Planned Behavior does not explicitly include knowledge as a predictor of behavior, it will be included in this study. Ajzen (1988) states, “at the most basic level of explanation, behavior is assumed to be a function of salient information, or beliefs, relevant to the behavior” (p. 132). The theory follows that attitude toward a behavior is determined by beliefs about that behavior. Therefore if a person thinks that a certain behavior will lead to favorable outcomes, then the person will have a positive attitude toward the behavior and likewise, a person thinks that a certain behavior will lead to a negative outcome, then the person will have negative attitudes toward performing the behavior. In addition, a few of the provider studies found that
knowledge, not attitudes, were predictive of emergency contraception prescribing practices and therefore, knowledge will be added to the model as shown in Figure 3.

*Figure 3: Modified Theory of Planned Behavior Applied to Research Study

*EC=Emergency Contraception
Chapter Three: Methods

This chapter describes the methods that were used to conduct this study and has been divided into eight sections: (1) purpose of the study, (2) research questions, (3) overview of study design, (4) pharmacy school curricula review, (5) pharmacy student focus groups, (6) pharmacist questionnaire, (7) data collection, and (8) data analysis.

Purpose of the Study

This study has two purposes: First, because the attitudes and dispensing practices among pharmacists may be related to their understanding of the medication, a review of pharmacy school curricula in the U.S. was conducted, and involved (a) an assessment of course content related to emergency contraception and (b) an analysis of how this content is perceived by pharmacy students. The second purpose of the study was to assess emergency contraception knowledge, attitudes, subjective norms, perceived behavioral control, and dispensing practices of pharmacists and to determine if pharmacists’ emergency contraception knowledge, attitudes, subjective norms, and perceived behavioral control are predictive of their dispensing practices.

This project provided important state-level data for Florida, national data on curricula for the U.S., and helped to identify geographic and demographic trends in pharmacist practices. Since no other studies have been conducted on these variables and on this topic, this research advances the state of knowledge, aided in formulating baseline data on pharmacists’ knowledge and practice, and provided a venue with which to make
recommendations of ways to strengthen pharmacy school curricula. In addition, this research works towards the goals of mainstreaming emergency contraception and reducing unintended pregnancy and the need for abortion in the U.S.

Research Questions

After a thorough review of the literature on emergency contraception knowledge, attitudes, and dispensing practices, a review of behavioral theories, and an understanding of the future recommendations suggested in the existing literature, the following research questions emerged:

Question 1: What do the 91 accredited schools of pharmacy in the U.S. teach about emergency contraception?

Question 1a: What objectives, course assignments, course readings, and lectures concerning emergency contraception are provided in the required courses at the 91 accredited schools of pharmacy in the U.S.?

Question 1b: What objectives, course assignments, course readings, and lectures concerning emergency contraception are provided in the elective courses at the 91 accredited schools of pharmacy in the U.S.?

Question 2: How is emergency contraception course content taught at accredited schools of pharmacy as perceived by third or fourth year pharmacy students at the four accredited schools of pharmacy in Florida?

Question 2a: What did pharmacy students learn about emergency contraception in their pharmacy school classes?

Question 2b: How was emergency contraception taught in their pharmacy school classes?
Question 2c: What are the projected emergency contraception dispensing practices of pharmacy students?

Question 3: What is the relationship among emergency contraception knowledge, attitudes, subjective norms, perceived behavioral control, intention to dispense, and dispensing practices of Florida pharmacists registered with the Board of Pharmacy?

Question 3a: Is emergency contraception knowledge predictive of dispensing practices of Florida pharmacists?

Question 3b: Are attitudes about emergency contraception predictive of emergency contraception dispensing practices of Florida pharmacists?

Question 3c: Are subjective norms about emergency contraception (whether important people think they should dispense emergency contraception) predictive of emergency contraception dispensing practices of Florida pharmacists?

Question 3d: Is perceived behavioral control, the perceived ease or difficulty of dispensing emergency contraception, predictive of dispensing practices of Florida pharmacists?

Question 3e: Is intention to dispense emergency contraception predictive of dispensing practices of Florida pharmacists?

Question 3f: Are emergency contraception knowledge, attitudes, subjective norms, perceived behavioral control, and intention to dispense taken together, predictive of emergency contraception dispensing practices of Florida pharmacists?
Overview of Study Design

This research study employed a mixed methods study design involving both survey and focus group methods. The study involved three major research questions with sub-questions included within each of the three main questions. Each major research question contains three separate methods crafted to address each individual but related research question. Question #1 was addressed through a brief web-based survey emailed to the Academic Deans of the 91 accredited schools of pharmacy in the U.S. Question #2 was addressed through focus groups with third and fourth year Doctor of Pharmacy (Pharm. D.) students at the four accredited schools of pharmacy in Florida and Question #3 was addressed through a mixed-mode survey administered to a randomly selected group of pharmacists registered with the Florida Board of Pharmacy.

Taken together, findings demonstrated what is intended to be taught to pharmacy students, what is actually being learned by pharmacy students, and how practicing pharmacists’ perceptions of emergency contraception are associated with their dispensing practices. This research study examined both the education and practice of pharmacists.

All activities were approved by the University of South Florida Institutional Review Board. All records were stored in locked filing cabinets in a locked room. It was assumed that all study participants in this study including Deans, practicing pharmacists, and fourth year pharmacy students were able to both read and speak English and were able to complete the questionnaires presented to them without aid.

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Pharmacy School Curricula Review

Target Population & Sampling Frame

The first research question, what do the 91 accredited schools of pharmacy in the U.S. teach about emergency contraception, was addressed through a short web-based survey to the Deans at the 91 accredited schools of pharmacy in the U.S. The target population is Academic Deans at accredited schools of pharmacy in the U.S. In this case, the target population, the sampling frame, and the sample are the same because the survey will act as a census. Academic Deans were chosen as the target population for this research question as they are the individuals who are most knowledgeable and responsible for their school curricula. In addition accredited schools of pharmacy were chosen as the target population because students must graduate from an accredited school of pharmacy in order to become a licensed pharmacist in the U.S.

Sampling Plan

The following four letters were constructed and emailed to all 91 Deans: (a) a pre-notice, (b) an abbreviated informed consent form, (c) a cover letter and questionnaire, and (d) a thank you/reminder letter. Please see Appendix G for a copy of the Academic Dean email pre-notice, Appendix H for a copy of the abbreviated informed consent form, Appendix I for a copy of the Academic Dean cover letter and questionnaire, and Appendix J for a copy of the Academic Dean thank you/reminder letter.

In addition to the survey and the informed consent form, all three letters, a pre-notice, cover letter, and thank you/reminder, were added to the survey process as recommended by the Dillman tailored design method (Dillman, 2000). According to Dillman, the pre-notice email message should be delivered two to three days before the
questionnaire is emailed out. The pre-notice has been shown to be important for email surveys as it alerts the recipient that the survey will be arriving shortly and to not discard it when it does arrive (Dillman, 2000).

After the pre-notice is delivered, the questionnaire followed a few days later. Dillman (2000) suggests that a brief cover letter should be included directly before the survey. It has been shown that brevity for the cover letter is best as people are more likely to read an email that is shorter given the mass quantities of email that people have to sift through on a daily basis (Dillman, 2000). In addition to a pre-notice and cover letter, all email contacts were personalized as studies show that an individual is more likely to respond to an email addressed directly to them rather than a mass email, group, or listserve mailing (Dillman, 2000).

In addition to a pre-notice and cover letter, the third letter that should be included in an online survey is a thank you/reminder email. This email is designed to both thank individuals as well as remind them to fill out the survey. Attached to the thank you/reminder letter is a replacement electronic questionnaire. Providing a replacement questionnaire with the follow-up thank you/reminder letter has been shown to increase survey response rates (Dillman, 2000).

A link to the web-based survey was emailed to all 91 Deans. Email addresses were retrieved from school websites or by phone. The web-based survey was held on the University of South Florida Ultimate Surveyor program. Ultimate Surveyor is an electronic survey response program. It was employed to ensure confidentiality so that the Academic Deans felt more comfortable providing accurate and truthful information about their programs. Because this survey is electronic, a waiver of consent was requested and
granted from the IRB as well as a waiver of written documentation. According to the IRB, a one page document including the basic elements provided in a longer informed consent form is all that is required for a study of this nature.

The survey asked Dean’s questions pertaining to the curricula offered in their Pharm. D. programs, identified appropriate course numbers and titles, and requested an electronic copy of every syllabus in both required and elective courses that included objectives, course assignments, course readings, and/or lectures concerning emergency contraception. These syllabi were retrieved, reviewed, totaled, and summarized by the research investigator. The gathered data was entered into an EXCEL spreadsheet for analysis and reporting purposes. Names of the particular schools and Academic Deans were kept confidential and were not linked to the data. In addition, where applicable, curricula information was searched for and retrieved from the school websites to amplify and cross check the information provided by the Academic Deans. Course content is assumed to be up-to-date, however it will only be as up-to-date as the faculty that create the content and syllabi for the courses.

To more fully understand the feasibility of this survey, five Academic Deans from schools of pharmacy in the U.S. were contacted by email prior to sending out the actual survey. The email explained the study and inquired as to whether they would respond to a survey of this nature. Three out of five Academic Deans reported that they would respond to a survey of this nature, yielding a 60% response rate. The response from these emails provided an estimate of the feasibility of this survey.

The Academic Deans survey was piloted to the Academic Dean of the USF College of Public Health, and she said that she would complete it if it was sent to her;
however it is not known how Academic Deans for schools of pharmacy will respond. A 30% return rate was expected from the Academic Deans (N=24). This percentage was estimated from a review of email surveys which both reviewed and estimated response rates of email surveys over time (Sheehan, 2001). In addition, preparations were made to use curricula information provided on their school websites to search for emergency contraception course content had we not received a good response rate from Deans.

**Pharmacy Student Focus Groups**

**Target Population & Sampling Frame**

The second research question, *how is emergency contraception course content taught at accredited schools of pharmacy as perceived by fourth year pharmacy students at the four accredited schools of pharmacy in Florida*, was answered through focus groups conducted at all four accredited Schools of Pharmacy in Florida: Florida Agricultural and Mechanical University, Nova Southeastern University, Palm Beach Atlantic University, and University of Florida. These focus groups provided insight into how the curricula in pharmacy schools are operationalized and perceived by pharmacy students.

For this research question, the target population was fourth year Pharm. D. students at accredited schools of pharmacy in the U.S. The sampling frame was fourth year Pharm. D. students at the four accredited schools of pharmacy in the Florida and the samples for the focus groups were created through non-probability quota sampling.

**Focus Group Discussion Guide**

A focus group topical guide was created by an expert panel to (a) understand what pharmacy students learned about emergency contraception in their pharmacy school
classes, (b) discover how they were taught about emergency contraception in their pharmacy school classes, and (c) find out what their projected emergency contraception dispensing practices will be upon becoming a pharmacist.

The topical guide was developed prior to the focus group discussions by the researcher and panel of experts. The panel of experts consisted of pharmacy faculty, recent pharmacy school graduates, practicing pharmacists, and a focus group expert. A list of topic areas was generated that began with non-threatening issues leading into more specific questions. Topical areas and probing questions for the focus groups included but were not limited to the following:

- **Knowledge** (What do you know about emergency contraception? Where did you learn this information? What did you learn about emergency contraception in your pharmacy classes? Which classes talked about emergency contraception? Were these classes required or offered as an elective? How does what you learned in course instruction vary from what you learned or what you know from outside of class?)

- **Instruction** (What were you taught about emergency contraception in your pharmacy classes? How were you taught about emergency contraception? What kinds of methods of instruction taught you about emergency contraception (e. g. lectures, class discussions, course readings, assignments)?

- **Practice** (How do you feel about dispensing emergency contraception? Do you feel any differently about dispensing emergency contraception than you do dispensing any other medications? Where do your feelings about dispensing come from? Do you think you will dispense the medication upon becoming a pharmacist? What do you think about the recent move to allow emergency contraception to be administered over-the-counter for women over 17 years of age? Does this change in administration status change your views about emergency contraception? Have your classes discussed the dispensing issues surrounding emergency contraception? Have your classes brought up the new over-the-counter status of emergency contraception?)
The qualitative methods employed in this study best address the issue of cognitive understanding or perceptions of course instruction on emergency contraception in their pharmacy school classes because qualitative research is able to capture complex human behaviors such as cognitive processes. Partnering the Academic Deans survey with the findings from the pharmacy student focus groups allowed for an enhanced understanding of pharmacy school curricula in the U.S. Not only did this study review emergency contraception pharmacy school curricula but these focus groups provided insight into how the curriculum is operationalized or translated to the pharmacy students it aims to teach.

A limitation of focus group data in general, and this research question in particular is that the information received from the pharmacy students is based solely on self-reporting, meaning that what pharmacy students report learning about in their classes may not be reflective of actual classroom instruction. No two students will learn the same way or remember the same material exactly the same and therefore eliciting pharmacy students’ perceptions about what they learned or were taught in pharmacy school is subjective. However, the focus groups provided an accurate picture of what these pharmacy students remember learning about emergency contraception and how they remember being taught this information.

**Sampling Plan**

Each of the four accredited schools of pharmacy in Florida were contacted and asked if focus groups could be conducted at their institutions. In addition, space to conduct the focus groups was requested. One focus group per institution was conducted, equaling a total of four focus groups. Both flyers as well as an email were disseminated
to pharmacy students in an attempt to recruit study participants. If a school of pharmacy
did not have a listserv of pharmacy students to email, then only flyers were used for
recruitment. Flyers were placed into students’ mailboxes and places in convenient
locations around the school. The flyer and email announced the focus group date and
time and students had the ability to contact the researcher either by email or phone to sign
up to participate. All four schools participated in the dissemination of the flyer to aid in
the recruitment of students (see Appendix K for a sample of the recruitment flyer).

The researcher held one focus group at each of the four institutions and each focus
group attempted to recruit 8-10 students. If more than 10 students applied for any one
focus group, the first 10 students to make contact with the researcher were recruited for
the focus group. Individuals were excluded from the study if they were first or second
year students and if they were not working towards their Pharm. D. degree. These
criteria were selected because the Pharm. D. degree is the only degree that allows
students to become practitioners or pharmacists in various practice settings and this study
sought to understand the relationships between emergency contraception practices and
pharmacists. In addition, first and second year Pharm. D. students were excluded from
this study because they may not have had the course instruction that the focus groups
explore. The Pharm. D. degree is typically a four year and full-time program where the
first three years are dedicated to course work and then the last year is dedicated to an
advanced pharmacy practicum where the students apply their classroom training to
clinical settings such as hospitals, outpatient facilities, and community clinics. Therefore,
third and fourth year Pharm. D. students were chosen so that they will have already had
most of the course instruction for their degree which makes them able to answer the focus group questions.

Study participants who met the eligibility criteria were asked to sign an informed consent form prior to participation in the focus group. Please see Appendix L for a copy of the focus group informed consent form. Students were given a $10 gift certificate to Starbucks for their participation. Gift certificates were provided to study participants in an envelope directly before the focus group discussions. Participants received compensation before participation to show that they could leave the study at any time for any reason, as waiting until the end of the focus group to distribute the gift certificate could appear coercive.

Focus groups were conducted for approximately one hour and were tape recorded. Participants sat in a circle for the focus group discussions. Two personnel were present throughout the focus group discussions, a moderator and a note taker. The moderator was the researcher and the note taker was an individual who has at least an undergraduate degree and was screened by the researcher to ensure that the individual can take notes. In addition, the note taker was trained by the researcher to understand the focus group topical guide and how to take notes properly.

In total, 21 third and fourth year Pharm. D. students participated in the focus group discussions (8 from UF, 4 from FAMU, 5 from PBA, 4 from NOVA). Study participants met in a closed room, refreshments were served, and participants read and signed the informed consent form prior to participation in the focus group. After informed consent was procured, the paper and pencil survey was administered. Focus groups were conducted for approximately one hour and were tape recorded. Participants
sat in a circle at a table for the discussions. Two study personnel (a moderator and note-taker) were present throughout the focus group discussions. After each focus group, the note taker presented a summary of the main ideas that had been identified in each question and asked if participants had any changes or additions they would like to make to the summary; when changes or additions were made, this information was included. Debriefing between the note-taker and the moderator occurred directly after each focus group discussion.

All data, audiotape, notes, and any other pertinent materials collected during focus groups were kept confidential. The materials were stored in locked filing cabinets and no personal identifiers were used. It should be noted that a limitation of the focus groups is that there was a high potential for leading and researcher bias since the moderator was also the researcher. In order to reduce this bias, the moderator stayed close to the topical guide created by the panel of experts. In addition, the process of self-reflexivity was performed where the researcher becomes aware of her own beliefs and how these beliefs may be impacting the interaction and interpretation of the research.

Pharmacist Questionnaire

Target Population & Sampling Frame

The third research question, what is the relationship among emergency contraception knowledge, attitudes, subjective norms, perceived behavioral control, and dispensing practices of Florida pharmacists registered with the Board of Pharmacy, was addressed through a 58-item, mixed-mode (paper or web-based) questionnaire administered to a randomly selected group of Florida pharmacists. This research
question will determine what variables, if any, are predictive of pharmacist emergency contraception dispensing practices.

The target population for this research question was all pharmacists in Florida and the sampling frame was all pharmacists registered with the Florida Board of Pharmacy. Although national organizations such as the American Pharmaceutical Association (AphA) have an impact on pharmacies and pharmacists, most pharmacists are regulated more by state law and by their local state Board of Pharmacies. Therefore, although the target population was all pharmacists in the U.S., it is better to perform research on a state-by-state basis because state policies and regulations vary from state-to-state. The target sample was 552 Florida pharmacists that were randomly selected from all pharmacists (N= 29,896) registered with the Florida Board of Pharmacy. The determination of the target sample size of pharmacists (N=552) for this study is discussed in the power analysis section below.

Power Analysis—Sample Size

Target sample size (N) is determined by a confluence of factors including the significance criterion (α), statistical power, and population effect size (ES). In statistical modeling, the relationships between these four factors are a function of each other (Cohen, 1992). The significance criterion (α) equals the acknowledged risk of falsely rejecting the null hypothesis also referred to as Type I error. Typically α is set at .05 and therefore in this study, α will set at .05 as well (Cohen, 1992).

Statistical power is the probability of rejecting the null hypothesis when it is false. If the null hypothesis is false, failing to reject it is an error. This error, failing to reject a false null hypothesis, is referred to as Type II error. The probability of committing a
Type II error ($\beta$) is 1-power. Cohen (1992) recommends target power of .80 for general use as a value smaller than .80 represents excessive risk of Type II error. Conversely, power larger than .80 would require an N that would possibly be unattainable given the resources of the researcher (Cohen, 1992).

Population effect size is the most difficult of all four components to determine. Effect size is the degree to which the null hypothesis is false. Cohen (1992) has proposed criteria for small, medium, and large effect size values based on a given statistical test. Since the proposed research sought a medium effect size and for most of the statistical tests employed in this research, an effect size of .30 will be adequate. An effect size of .30 is able to detect an effect that can be visible to the naked eye of an observer (Cohen, 1992). This effect size is adequate for this research.

Given these three pieces of information, $\alpha=.05$, statistical power=.80, and ES=.30, both Cohen’s power tables of N for small, medium, and large effect sizes as well as a power analysis program (performed in SAS) were employed in order to determine sample size (N). First, it was necessary to determine the correct statistical tests to use. Given the research questions and the levels of measurement of the survey questions, three statistical tests were identified: Chi-square, significant tests of a sample r, and logistic regression. Once the statistical tests were defined, the sample size required to get adequate power for a medium ES could be determined. Each statistical test yielded a different N and the test with the largest N was chosen as the appropriate sample size. Please see Table 1 for sample size (N) determined by the statistical test with a medium ES.
Table 1. Sample Size (N) for Medium ES at Power = .80 for \( \alpha = .05 \)

<table>
<thead>
<tr>
<th>Test</th>
<th>Measure</th>
<th>Sample Size (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sig r</td>
<td>( r = .30 )</td>
<td>( n = 85 )</td>
</tr>
<tr>
<td>Chi-square (6df)</td>
<td>( w = .30 )</td>
<td>( n = 151 )</td>
</tr>
<tr>
<td>Logistic Regression</td>
<td>tolerance=.5</td>
<td>( n = 331 )</td>
</tr>
</tbody>
</table>

In order to find the sample size for Chi-square and significant tests of a sample r, Cohen’s power tables were employed (1992). However, in order to determine the sample size required for logistical regression, a power analysis was performed in SAS (SAS Institute Inc, Cary, NC). The SAS program code used is a test of a single predictor in a logistic model.

Tolerance is the extent to which the predictor variable is independent of the other predictors. Tolerance set at 1 means that the predictor is completely independent of the other predictor variables and if tolerance is smaller than 1, it means that the predictor variable is related to the other predictors, and therefore a larger sample size is needed. Tolerance was tested from 1 to .5. These values are represented in Table 2 below.

Table 2. Sample Size Required for Each Level of Tolerance (1 to .5) in Logistic Regression, \( \alpha = .05 \).

<table>
<thead>
<tr>
<th>( \pi )</th>
<th>OR</th>
<th>Tolerance</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1</td>
<td>2</td>
<td>1</td>
<td>166</td>
</tr>
<tr>
<td>0.1</td>
<td>2</td>
<td>0.9</td>
<td>184</td>
</tr>
<tr>
<td>0.1</td>
<td>2</td>
<td>0.8</td>
<td>207</td>
</tr>
<tr>
<td>0.1</td>
<td>2</td>
<td>0.7</td>
<td>237</td>
</tr>
<tr>
<td>0.1</td>
<td>2</td>
<td>0.6</td>
<td>276</td>
</tr>
<tr>
<td>0.1</td>
<td>2</td>
<td>0.5</td>
<td>331</td>
</tr>
</tbody>
</table>

The model was set for power at .80, \( \alpha = .05 \), and was set for the smallest odds ratio that is cared about finding (OR=2) if the predictor is unrelated to the other predictors. It is preferred that a tolerance of .5 is unique meaning that half of the variability of each
predictor is independent of the other predictors. This is why a sample size of 331 was chosen as this sample will maintain enough power to detect any differences. However, in determining any sample size, response rates must be taken into consideration. Because there is not a known response rate of pharmacists in existing literature, an expected response rate was calculated by taking the mean of response rates from the other pharmacist studies discussed in the literature review. Borrego et al (2006) had a 40% return rate, Van Riper & Hellerstedt (2005) received a 67% response rate, and Conard et al (2003) had a 75% response rate. Taking the mean of these three studies, a response rate of 60% is expected for this survey which means that a sample of 552 pharmacists will be required.

Sampling Plan

The power analysis determined that a target sample size of 331 would maintain enough power to detect any differences and a response rate of 60% was established based upon response rates from other studies that surveyed pharmacists. Therefore, it was determined that 552 surveys should be mailed out to procure a sample of 331.

The sample was selected through a simple random sampling method. First, information on all pharmacists who were registered with the Florida Board of Pharmacy was downloaded from the Department of Health webpage (N=29,896) in EXCEL format. Both active and inactive pharmacists living in Florida and outside of Florida were contained in these files. Inactive pharmacists as well as pharmacists living outside of Florida were sorted out of the total, leaving 17,310 pharmacists who were active and who lived in Florida. A random number table was employed to generate 552 random numbers from 1 to 17,310. The numbers in a number table are listed through a pure random
process which allows any number the equal chance of being placed in any position. After the beginning number was selected, this random sampling technique chose 552 pharmacists as participants for this study. This procedure is described in Neuman (2003) as one way to approximate randomness and thus be able to yield a sample that is representative of the total population. Finally, contact information on each of the 552 pharmacists was removed from the larger list and was entered into an additional EXCEL spreadsheet which made up the sample.

A sample of 552 pharmacists was randomly selected for participation in this study. Each pharmacist was mailed (a) a pre-notice postcard, (b) an abbreviated informed consent form, (c) a cover letter, (d) a questionnaire with an envelope with return postage included, and (e) a thank you/reminder postcard as suggested to improve response rates by the tailored design method (Dillman, 2000). Please see Appendix M for a copy of the pre-notice postcard, Appendix N for a copy of an abbreviated informed consent form, Appendix O for a copy of the cover letter, Appendix P for a copy of the questionnaire, and Appendix Q for a copy of the thank you/reminder postcard.

Three separate mailings occurred for this portion of the research study, one for the pre-notice, one for the actual questionnaire, and one for a thank you/reminder mailing with online survey-mode option. Postal addresses of all pharmacists registered with the Florida Board of Pharmacy were obtained from the Florida Department of Health website. The pre-notice letter was mailed to pharmacists a few days before the questionnaire was mailed. The pre-notice alerts the pharmacist to be on the look out for an important survey that will be arriving within the near future and indicates that a response would be appreciated. The pre-notice should be brief and personalized and is
not meant to provide detail about the study but just to provide notice of the upcoming request to complete a survey (Dillman, 2000).

A few days after the pre-notice was mailed, another mailing was sent out which will included the informed consent form, cover letter, paper-based questionnaire, and a return envelope. The return envelope was addressed and real stamps were used instead of a business reply as using stamps has been shown to improve study response rates (Dillman, 2000). The cover letter was no longer than one page and included pertinent information about the study. The cover letter explained why the study is important. Because this survey is a mail survey with follow-up internet survey option, a waiver of consent was requested and granted from the IRB as well as a waiver of written documentation. According to the IRB, a one page document including the basic elements provided in a longer informed consent form is all that is required for a study of this nature.

Regardless of whether the study participant returned the questionnaire, they received a thank you/reminder postcard approximately one week after the delivery of the questionnaire. The main purpose of this postcard is to jog the memories of the individuals and increase the study response rate (Dillman, 2000). Included in the thank you/reminder postcard was a link to the same survey on-line. Each participant may choose to fill out the paper-based survey they received in the second mailing or an on-line version they received a link to in the follow-up post-card. Like the Academic Dean survey, the pharmacist web-based survey was held on the USF Ultimate Surveyor program. If pharmacists choose to complete their survey online, the informed consent
form was the same as the paper-based informed consent except that participants clicked
the check box at the bottom of the screen signifying consent to participate in the study.

According to Dillman (2000), the type of mixed-mode format where one mode is
used at first contact and then another mode is used at final contact only to prompt the
completion of a survey, will improve coverage and reduce non-response rates. Dillman
(2000) notes, “introducing a new mode at this stage of the data collection may allow
information to be collected that will improve coverage…it is also likely it improve
response rates to the other mode significantly” (p. 222). In addition, potential
measurement differences that are found in other mixed-mode situations may be avoided
by introducing another survey mode this way (Dillman, 2000).

This type of mixed-mode survey design was chosen for this study as it improves
response rates while limiting measurement differences found in other mixed survey
modes. It was originally thought desirable to send respondents a choice between a paper
and pencil survey and an online version; however in practice this has not shown to
increase response rates (Dillman, 2000). Therefore, the current mixed-mode survey
design with the first mode being paper-based and the follow-up or final mode being
online was chosen for this research study.

Originally, it was thought that a comparison of critical variables to estimate non-
respondent bias could be performed. That is, answers from first responders were going to
be compared to answers from those who responded after the follow-up post card to
measure any differences in the two groups. However, due to the low number of
responders from the follow-up postcard (n=8), this type of bias could not be estimated.
In an additional attempt to understand the characteristics of non-responders, the Florida
Board of Pharmacy was contacted to see if they collect basic demographic information on Florida pharmacists. However, they do not, meaning that the demographic information from the responders cannot be compared to the demographic information of non-responders and therefore the characteristics of the non-responders cannot be known.

The pharmacist survey was developed, piloted, and tested for readability, reliability, and validity among a group of pharmacists. The questionnaire inquire about six main variables, (1) level of knowledge about Plan B, (2) personal attitudes held about Plan B and about Plan B dispensing, (3) perceived social pressures around issues of dispensing, (4) perceived behavioral control over the behavior of dispensing Plan B, (5) intention or likelihood of dispensing Plan B, and (6) emergency contraception dispensing practices. In addition to questions that measure these six variables, the instrument will include questions on basic demographics and background such as age, gender, ethnicity, marital status, religious and political party affiliation, type of pharmacy, and length of time in practice.

*Data Collection*

*Instrument Development*

To guide the questionnaire development and focus group topical guide for this study, interviews were conducted with a panel of experts in which practicing pharmacists were asked general questions about being a pharmacist, their schooling and curricula, and their emergency contraception knowledge, attitudes, subjective norms, and perceived behavioral control. Please see Appendix R to review the questions and responses from the expert interviews.
It is from these interviews as well as from the literature review and the theoretical underpinnings of the Theory of Planned Behavior, that instruments were developed for this study. The literature review in particular brought three important studies to light that were influential in the creation of the pharmacist questionnaire. Permission was requested to utilize parts of instruments that were employed in these studies. Questions were selected from these three studies and combined to form one questionnaire however some questions were taken and altered to fit the proposed study. The pharmacist survey instrument was developed from the surveys used in the following three studies:

1) The most influential study in terms of survey development assessed pharmacist knowledge, attitudes, and dispensing practices of emergency contraception among South Dakota pharmacists. A 14-item survey was mailed to all registered pharmacists (n=810) in South Dakota to assess their attitudes, knowledge, and dispensing practices of emergency contraception and 62% responded (Van Riper & Hellerstedt, 2005). Many of the practice and workplace as well as knowledge and attitudes questions were taken and adapted from the survey instrument employed in the pharmacist survey.

2) Another U.S.-based study examined emergency contraception knowledge, attitudes, and behaviors among women and men ages 18-21 (n=97) attending a university through the use of a 25-item paper-based questionnaire (Corbett, Mitchell, Taylor, & Kemppainen, 2006). Although this questionnaire was read to aid in the development of ideas
for the pharmacist survey, the only questions taken from this instrument were the demographic questions.

3) A third study performed a cross-sectional survey of 96 faculty physicians from four universities to measure prescribing intention of emergency contraception (Sable, Schwartz, Kelly, Lisbon, & Hall, 2006). Many of the prescribing practice and perceived behavioral control questions were taken from the survey instrument, adapted, and employed for use in the pharmacist survey.

The pharmacist survey was piloted among a group of pharmacists not eligible for participation in the Florida pharmacist survey. The Academic Deans survey was piloted among the Academic Dean of the USF College of Public Health as she was not eligible for the pharmacy school curricula review. The feedback from this pilot was helpful in not only adjusting the survey but also for understanding the feasibility of the survey. After reviewing the survey, the Academic Dean of the USF College of Public Health indicated that she would respond to the survey if it had been emailed to her. In order to better understand the feasibility of the Academic Deans survey, five Academic Deans were randomly selected and sent an email asking if they would respond to a three item questionnaire of this nature. The final pharmacist and Academic Dean surveys were developed from the feedback provided through the pilots.

Both instruments, the pharmacist questionnaire and the Academic Dean questionnaire, were tested for validity and reliability. The focus group topical guide will be discussed in greater detail later in the paper. Reliability refers to the dependability or consistency of the instrument and validity implies truthfulness and refers to how well the
construct and measure fit together (Neuman, 2003). There are three types of reliability that are of concern: stability reliability, representative reliability, and equivalence reliability.

Stability reliability is a measure of dependability across time. That is, will this instrument yield the same answers over varying time periods? Stability reliability can be measured through a test-retest method where the instrument is re-administered to the same group of people to see if the same results are produced multiple times (Neuman, 2003).

Representative reliability is dependability across different groups of individuals. It answers the question; will the instrument yield the same answers when administered to different groups? Representative reliability can be measured through a subpopulation analysis in which the instrument is measured among different groups of people such as people of varying ages, sexes, and ethnicities. The instrument is said to have representative reliability if the groups maintain the same error rate (Neuman, 2003).

Equivalence reliability is dependability when multiple indicators are used to measure a construct. It answers the question; does the construct yield consistent findings across the various indicators or survey items? Cronbach’s alpha is a statistical measure that can determine equivalence reliability. Cronbach’s alpha is a numerical coefficient of reliability ranging from 0 to 1 and the higher the score, the more reliable the scale. A reliability coefficient of .7 is viewed as acceptable; however some literature has accepted lower coefficients (Nunnaly, 1978).

Not only will the test-retest method, a subpopulation analysis, and Cronbach’s alpha be employed to test for reliability but other ways to increase reliability include: (a)
conceptualizing constructs clearly, (b) employing multiple indicators, and (c) running pilot tests (Neuman, 2003).

Validity or more specifically, measurement validity indicates how conceptual and operational definitions fit with each other. The greater the fit, the more measurement validity is achieved. Validity answers the question: does the indicator measure the construct it is trying to measure? There are two types of measurement validity that are of concern for this study: face and construct validity. Face validity is a consensus measure of validity which demonstrates that people agree that the indicator measures the construct. Face validity answers the question; do people think that there is a fit between the definition and the method of measurement? Construct validity is employed when measures have multiple indicators. Construct validity answers the question, are the various indicators consistent? Face validity was measured through a survey pilot test and construct validity was calculated through factor analysis procedures, all of which will be discussed in the results section below.

Measures

There are six main constructs measured in the survey of pharmacists, (1) knowledge (2) attitudes, (3) subjective norms, (4) perceived behavioral control, (5) intention to dispense, and (6) dispensing practices. Each of these six constructs is measured by multiple indicators or survey questions. All independent, dependent, and socio-demographic variables, survey questions, response options, and variable level of measurement are represented in Appendix S.

1) The first construct, knowledge, is measured by 10 separate questions and is measured on the nominal level. Knowledge is operationalized through a
comprehension of emergency contraception effectiveness, number of pills dispensed in Plan B packaging, mechanism of action, and health risks. Individual variables include: # of pills in package, hours of effectiveness, mechanism of action, timing for effectiveness, comprehension about OTC sales, health risks, birth defects, and abortifacient.

2) The second construct, attitudes, is measured by 8 separate questions and is measured at the nominal and ordinal levels. An attitude is defined by Ajzen (1988) as “…a disposition to respond favorably or unfavorably to an object, person, institution, or event.” (p. 4). Therefore survey questions about attitudes measure self-reported feelings or beliefs that are positive and negative about emergency contraception use and dispensing. Variables include: feelings about benefits and risks, beliefs about maintenance of contraception, feelings about promiscuity, feelings about prescribing and religion/ethics, feelings about repeated use, feelings about comfort level in dispensing, feelings about dispensing to adolescents, feelings about dispensing for clients, beliefs about lifetime use of emergency contraception.

3) The third construct, subjective norms, refers to the perceived social pressures to perform or not perform a particular behavior. Subjective norms are measured through 6 questions that query about how the participant perceives what important people think about emergency contraception dispensing and is measured at the interval level. Variables include: partners/colleagues perception of emergency contraception dispensing, professional organization perception of emergency contraception dispensing, boss perception of
emergency contraception dispensing, and close friends and family perception of emergency contraception dispensing. Additionally, two questions were asked regarding their pharmacy culture (i.e. if there is anyone who refuses to dispense the medication at their pharmacy and if there is a policy in place at their pharmacy if someone refuses to dispense Plan B).

4) The fourth construct, perceived behavioral control is measured by 4 questions and refers to how difficult or easy the behavior is to perform and in this case, the behavior is emergency contraceptive dispensing. Therefore, perceived behavioral control is measured by four questions that inquire about the ease or difficulty involved in dispensing emergency contraception and is measured at the ordinal level. Variables include: perceived ease of counseling clients, perceived ease of dispensing, perceived ease of refuse to dispense, perceived ease of educating clients.

5) The fifth construct, intention or likelihood to dispense Plan B, is measured by 8 questions that query pharmacists about their intention to dispense Plan B to varying groups of people. For example, pharmacists answer whether they are likely or unlikely to dispense Plan B to women who are raped, women who have experienced a problem with their birth control method etc. to test for differences in intention to dispense based on the situation of the woman requesting the medication. Intention to dispense is divided by OTC and by prescription to account for any differences.

6) The sixth construct, dispensing practices, is measured by 13 questions that query pharmacists about their emergency contraception dispensing practices
in general and by prescription and over-the-counter to varying groups of people. Variables are measured on both the nominal and ordinal levels and include: pharmacy stock of birth control products, pharmacy dispensing of emergency contraception, ever filled a prescription, # of prescriptions filled in past 12 months, likelihood of dispensing over-the-counter to various groups, and likelihood of dispensing by prescription to various groups. However, in the analysis, dispensing practices are only measured by two questions that ask pharmacists if they have ever dispensed Plan B by prescription or OTC.

In addition to these measures, demographic information such as age, gender, ethnicity, marital status, religious and party affiliation, type of pharmacy, and length of time in practice will be collected on study participants and these variables are measured on the nominal, ordinal, and ratio levels. The first five constructs, knowledge, attitudes, subjective norms, perceived behavioral control, and intention to dispense are the independent variables and dispensing practices is the dependent variable. See Figure 4 below for a graphic representation of these variables. This design will aid in understanding which independent variables, if any, predict emergency contraception dispensing practices of pharmacists.
Reliability and Validity Measures

The pharmacist survey was developed, piloted, and tested for readability, validity, and reliability among a group of pharmacists. After the pilot and tests, the survey was finalized as a 58 item questionnaire.

Validity: Face, Content, and Construct

The pharmacist survey was piloted among a panel of experts (n=5) including practicing pharmacists, pharmacy faculty, and pharmacy students for face and content validity. Participants were asked to rate each question on the instrument as to whether it looks as if it is measuring the designated topic (face validity) and were asked to provide comments on how to fix questions that were given low ratings. In addition, participants were asked if there were important aspects of each question of the designated topic that the instrument was not measuring (content validity). See Appendix T for a sample
review guide that was distributed to measure face and content validity. It was from this pilot among a panel of experts that the pharmacist questionnaire was fully developed (see appendix N for the finalized pharmacist survey).

Construct validity of scores was measured by exploratory factor analysis. Survey questions naturally divided into the predefined construct areas of knowledge, attitudes, subjective norms, perceived behavioral control, and dispensing practices. Factor analysis was conducted separately for each construct area to see if content area questions are only measuring that one factor. Factor analysis was performed using SAS statistical packaging (SAS Institute Inc, Cary, NC). Eigenvalues (the proportion of variance determined by each factor) were used to help decide on the number of factors (via the scree plot). In addition, squared multiple correlations were used as prior communality estimates, principal factor analysis was used to extract factors, and an oblique rotation was employed. A scree test was also used to determine meaningful factors and an item was said to load on a factor if the pattern coefficient was above .30.

Knowledge: The eigenvalues and scree plot suggested that one factor was present among the 10 questions aimed at measuring knowledge of emergency contraception (Questions 22-31) as only one factor maintained an eigenvalue over 1. The factor represented 22.5% of the total item variance in the set of questions. Given the criteria of .30, all variables loaded at .30 or higher except for questions 24 and 25 (see Table 3). However, after a closer look at questions 24 and 25 in the survey, it was determined that they would need to stay in the analysis as they measured understanding of the mechanism of action and percentage of effectiveness, both of which are critical to knowledge of the medication.
Table 3. Factor Pattern matrix for Knowledge Items

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q22. Number of pills in Plan B package</td>
<td>0.52</td>
</tr>
<tr>
<td>Q23. Timing of administration</td>
<td>0.64</td>
</tr>
<tr>
<td>Q24. Mechanism of action</td>
<td>0.28</td>
</tr>
<tr>
<td>Q25. Percentage of effectiveness</td>
<td>0.20</td>
</tr>
<tr>
<td>Q26. Who can sell Plan B to consumers</td>
<td>0.53</td>
</tr>
<tr>
<td>Q27. How to sell OTC to women (in advance of need)</td>
<td>0.38</td>
</tr>
<tr>
<td>Q28. How to sell OTC to men</td>
<td>0.55</td>
</tr>
<tr>
<td>Q29. Plan B can cause birth defects (True/False)</td>
<td>0.50</td>
</tr>
<tr>
<td>Q30. Plan B can act as an abortifacient (True/False)</td>
<td>0.58</td>
</tr>
<tr>
<td>Q31. The sooner a woman takes Plan B, the more effective it will be (True/False)</td>
<td>0.37</td>
</tr>
</tbody>
</table>

Attitudes: The eigenvalues and scree plot suggested that one factor was present among the 8 questions aimed at measuring attitudes about emergency contraception (Questions 32-39) as only one factor maintained an eigenvalue even over 0. The factor represented 86.6% of the total item variance in the set of questions. All items maintained very high loadings on the one factor with the lowest loading at 0.75 and the highest at 0.99 (see Table 4).

Table 4. Factor Pattern matrix for Attitude Items

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q32. Easy availability of Plan B will discourage regular contraceptive use</td>
<td>0.99</td>
</tr>
<tr>
<td>Q33. Easy availability of Plan B promotes promiscuity</td>
<td>0.89</td>
</tr>
<tr>
<td>Q34. I feel uncomfortable dispensing Plan B because of my religious/ethnical beliefs</td>
<td>0.99</td>
</tr>
<tr>
<td>Q35. Repeated use of Plan B is wrong</td>
<td>0.81</td>
</tr>
<tr>
<td>Q36. I feel comfortable dispensing Plan B to adult women</td>
<td>0.99</td>
</tr>
<tr>
<td>Q37. I feel comfortable dispensing Plan B to adolescents (teens &lt;18 yrs old)</td>
<td>0.99</td>
</tr>
<tr>
<td>Q38. I feel comfortable dispensing Plan B to men</td>
<td>0.99</td>
</tr>
<tr>
<td>Q39. Should Plan B be offered to women who are raped in all hospital emergency rooms, regardless of hospital affiliation?</td>
<td>0.75</td>
</tr>
</tbody>
</table>

Subjective Norms: Much like knowledge and attitudes, the eigenvalues and scree plot suggested that one factor was present among the 4 questions aimed at measuring
subjective norms (Questions 40-43) as only one factor maintained an eigenvalue over 0. The factor represented 78.5% of the total item variance in the set of questions. As demonstrated in Table 5, all items maintained very high loadings on the one factor ranging from 0.83 to 0.94.

Table 5. Factor Pattern Matrix for Subjective Norm Items

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q40. My partners/business colleagues think I should dispense Plan B</td>
<td>0.94</td>
</tr>
<tr>
<td>Q41. The professional organization I am most active in recommends that I dispense Plan B</td>
<td>0.83</td>
</tr>
<tr>
<td>Q42. My supervisor thinks that I should dispense Plan B</td>
<td>0.86</td>
</tr>
<tr>
<td>Q43. My close friends and family think I should dispense Plan B</td>
<td>0.91</td>
</tr>
</tbody>
</table>

Perceived Behavioral Control: The eigenvalues and scree plot suggested that one factor was present among the 4 questions aimed at measuring perceived behavioral control (Questions 46-49) as only one factor maintained an eigenvalue over 0. The factor represented 96.5% of the total item variance in the set of questions. All items maintained very high loadings on the one factor ranging from 0.93 to 1.00 (see Table 6).

Table 6. Factor Pattern Matrix for Perceived Behavioral Control Items

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1 Pattern Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q46. How easy is it for you to counsel clients about Plan B</td>
<td>1.00</td>
</tr>
<tr>
<td>Q47. How easy is it for you refuse to dispense Plan B</td>
<td>0.93</td>
</tr>
<tr>
<td>Q48. How easy is it for you educate clients about Plan B</td>
<td>1.00</td>
</tr>
<tr>
<td>Q49. How easy is it for you dispense Plan B</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Dispensing Practices: Dispensing practices includes the two separate constructs of actual dispensing practices and intention to dispense emergency contraception. Actual dispensing practices of emergency contraception is measured by two items (Questions 8 and 11). Question 8 asks if a respondent has ever filled a prescription of Plan B and question 11 asks if they have ever sold Plan B OTC. Because the variable, actual
dispensing practices, is only measured by two questions, factor analysis does not conceptually make sense. Instead, a cross tabulation, Pearson Chi-Square test of association, and Phi coefficient statistic was run to determine the relationship between the two questions. The Chi-Square test revealed a direct and significant relationship (Chi-Square value 91.33, p<0.001) between the two questions. The Phi coefficient which is the measure of association between the two variables was significant (Phi=0.585, p<0.0001). These findings provide enough evidence to combine them into one construct measuring actual dispensing practices.

As for intention to dispense emergency contraception, the eigenvalues and scree plot suggested that one factor was present among the 8 questions aimed at measuring this construct (Questions 14-21) as only one factor maintained an eigenvalue over 0. The factor represented 80.5% of the total item variance in the set of questions. All items maintained very high loadings on the one factor ranging from 0.70 to 1.00 (see Table 7).

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q14. Likelihood of dispensing OTC to women who have experienced incest or rape</td>
<td>0.73</td>
</tr>
<tr>
<td>Q15. Likelihood of dispensing OTC to women who have experienced a problem with their birth control method</td>
<td>0.99</td>
</tr>
<tr>
<td>Q16. Likelihood of dispensing OTC to women who request the method after having unprotected sexual intercourse</td>
<td>0.71</td>
</tr>
<tr>
<td>Q17. Likelihood of dispensing OTC to a person other than the ultimate consumer of the product such as parents or a boyfriend</td>
<td>0.98</td>
</tr>
<tr>
<td>Q18. Likelihood of dispensing by prescription to women who have experienced incest or rape</td>
<td>0.99</td>
</tr>
<tr>
<td>Q19. Likelihood of dispensing by prescription to women who have experienced a problem with their birth control method</td>
<td>1.00</td>
</tr>
<tr>
<td>Q20. Likelihood of dispensing by prescription to women who request the method after having unprotected sexual intercourse</td>
<td>1.00</td>
</tr>
<tr>
<td>Q21. Likelihood of dispensing by prescription to sexually active teens under age 18</td>
<td>0.70</td>
</tr>
</tbody>
</table>
In summary, exploratory factor analysis provides evidence of construct validity of scores for the pharmacist survey.

Reliability: Stability and Equivalence

Reliability refers to the dependability or consistency of an instrument and validity implies truthfulness and refers to how well the construct and measure fit together (Neuman, 2003). There are two types of reliability that are of concern: stability and equivalence reliability.

Stability reliability is a measure of dependability across time. That is, will this instrument yield the same answers over varying time periods? Stability reliability was measured through a test-retest method where the instrument was re-administered to the same group of people to see if the same results were produced multiple times (Neuman, 2003). The pharmacist survey was administered online to a group of 18 pharmacists at one point in time and then again about one week later. The sample of pharmacists who participated did not practice pharmacy in Florida, so not to impact study results. Survey data were stored in an EXCEL database and were analyzed using SPSS statistical analysis software (SPSS 16.0, SPSS Inc., Chicago). Percentage agreements and Pearson product-moment correlation coefficients were calculated to measure the relationship between the variables over the two time periods. Percentage agreements measure the proportion of all occasions at which the variables agree across time and are primarily used with nominal level data. A percentage of 80% or higher was deemed as acceptable. Pearson product-moment correlation coefficients (represented as \( r \)) assess the relationship between variables and range from -1 to zero to +1 and are typically employed with ratio or interval levels of measurement. A correlation of -1 demonstrates a perfect negative linear
relationship, 0 means that there is no relationship, and +1 demonstrates a perfect positive linear relationship between variables. A Pearson correlation of 0.60 or higher was deemed as acceptable.

The survey was tested and was found to have acceptable reliability of scores. The results support dependability of scores that will be procured from the survey. The results are discussed below and have been categorized by survey construct: background characteristics, dispensing practices, knowledge, attitudes, subjective norms, and perceived behavioral control.

**Background Characteristics.** Background characteristics are comprised of 13 variables including gender, age, ethnicity, years in practice, type of pharmacy, marital status, religion, religiosity, political affiliation, employment status, pharmacy school attended, year of graduation, and job title. Percentage agreement tests were performed on all 13 variables. A Table depicting the results for the demographic variables is provided below.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percentage Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>100%</td>
</tr>
<tr>
<td>Age</td>
<td>83%</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>100%</td>
</tr>
<tr>
<td>Years in practice</td>
<td>83%</td>
</tr>
<tr>
<td>Type of pharmacy</td>
<td>100%</td>
</tr>
<tr>
<td>Marital status</td>
<td>100%</td>
</tr>
<tr>
<td>Religion</td>
<td>94%</td>
</tr>
<tr>
<td>Religiosity*</td>
<td>72%</td>
</tr>
<tr>
<td>Political affiliation</td>
<td>100%</td>
</tr>
<tr>
<td>Employment status</td>
<td>100%</td>
</tr>
<tr>
<td>Pharmacy school attended</td>
<td>94%</td>
</tr>
<tr>
<td>Year of graduation</td>
<td>100%</td>
</tr>
<tr>
<td>Job title</td>
<td>94%</td>
</tr>
</tbody>
</table>

*Did not meet the 80% cut off value.*
All variables except for one (religiosity) met the percentage agreement cut off value of 80%. The percentage agreement for religiosity was 72% in that five out of the eighteen participants changed their answer over time. The question on religiosity asked, *How would you describe yourself (choose only one)*. The answer choices were 1) Religious, 2) Spiritual, 3) Religious and spiritual, 4) Undecided, 5) None of the above, and 6) Prefer not to respond. Of the five respondents that changed their answer from one administration to the other, the first respondent changed their answer from *religious* to *prefer not to respond*, two participants changed from *religious and spiritual* to *religious*, one changed from *none of the above* to *religious and spiritual*, and the last respondent changed from *prefer not to respond* to *none of the above*. The inconsistency in the answers of these five participants seems to be a result of the personal nature of the question.

**Dispensing Practices.** Dispensing practices is measured by 17 questions of which percentage agreements were performed on nine questions and Pearson correlations were performed for the other eight questions. Of the nine that received percentage agreements, the questions queried about pharmacy stocking of condoms, spermicide, oral contraceptive pills, stocking of Plan B, dispensing of Plan B and inquired about how many times within the past year that they dispensed it both OTC and by prescription (see questions 5-13 in pharmacist survey Appendix N). All nine questions received percentage agreements above the 80% cut off value and are therefore reliable. In fact, all but two questions received 100% agreements across the two survey administrations. The two questions that received less than 100% agreements were the open ended questions
querying about how many times they have sold Plan B OTC and by prescription in the past 12 months and yielded 88% and 83% agreements, respectively.

Pearson correlations were run on the eight questions measuring dispensing practices. Specifically, these questions measure to what extent pharmacists are likely to sell Plan B OTC or dispense Plan B by prescription to women in varying circumstances such as women who were raped, women who had a problem with their birth control method etc. (see questions 14-21 on the pharmacist survey Appendix N). These questions employ a 4-point Likert scale ranging from very unlikely to very likely. Correlations were run for each individual item at time one and time two. In addition, the responses were combined to create a new variable and the combined variable was run at time one and time two. All individual questions received a Pearson correlation of $r=0.686$ or higher, demonstrating a positive relationship and all analyses were significant at the p=0.01 level. In addition, the combined score for dispensing practices yielded a Pearson correlation coefficient of $r=0.820$, with significance at the p=0.01 level.

Knowledge. Knowledge of emergency contraception is measured by 10 questions querying on the basic properties and mechanisms of action of Plan B as well as questions that measure if pharmacists have knowledge around issues of dispensing Plan B OTC (see questions 22-31 in pharmacist survey Appendix N). For knowledge, each item was awarded one point if the participant responded correctly and zero if they responded incorrectly. The points were added up for each participant yielding a knowledge score for each participant at time one and time two. Then, Pearson correlations were run on these knowledge scores. The Pearson Correlation was $r=0.849$, demonstrating a positive relationship and was significant at the p=0.01 level.
**Attitudes.** Attitudes is measured by eight questions querying about how pharmacists personally feel about dispensing and about women using Plan B (see questions 32-39 in pharmacist survey Appendix N). Seven of the questions are Likert scale questions (questions 32-28) and therefore employed Pearson correlations and one of the questions is a nominal level question (question 39) and therefore a percentage agreement was calculated. Of the seven questions employing a 4-point Likert scale, responses ranged from completely disagree to completely agree. First scores had to be adjusted such that a higher score demonstrated a more positive attitude towards Plan B. The response scale for these items was reflected. After this process, correlations were run for each individual item at time one and time two. In addition, the responses were combined to create a new variable and the combined variable was run at time one and time two. All individual questions received a Pearson correlation of $r=0.727$ or higher, demonstrating a positive relationship and all analyses were significant at the $p=0.01$ level. In addition, the combined score for attitudes yielded a high Pearson correlation coefficient of $r=0.950$, with significance at the $p=0.01$ level. The one nominal level question received a percentage agreement of 100% and is reliable.

**Subjective Norms.** The construct subjective norms is measured by six questions pertaining to the way people, groups, and pharmacy policy may be associated with pharmacist dispensing of Plan B (see questions 40-45 in pharmacist survey Appendix N). Pearson correlations were run on four of the questions measured on a 4-point likert scale (interval data) and percentage agreements were calculated for the other two questions that were measured at the nominal level. For the analysis of the four likert scale questions (questions 40-43), the answers were combined and Pearson correlations were calculated.
The Pearson Correlation was 0.820 and were significant at the \( p=0.01 \) level, demonstrating a positive relationship. The two questions that were measured at the nominal level (questions 44-45) maintained 100% agreement between time one and time two.

*Perceived Behavioral Control.* Perceived behavioral control is measured by four questions on a 4-point likert scale depicting how difficult or easy it is to dispense Plan B (see questions 46-49 in pharmacist survey Appendix N). Questions queried about how difficult or easy it is to counsel and educate clients, to dispense and refuse to dispense Plan B. Responses to the questions were added up and Pearson correlations were calculated. The Pearson Correlation was 0.831, demonstrating a positive relationship and all analyses were significant at the \( p=0.01 \) level.

In summary, the statewide pharmacist survey was found to have stability reliability and thus these results support dependability of scores that will be procured from the survey.

Equivalence reliability assesses how well variables measure a latent construct. Cronbach’s alpha is a statistical measure that can determine equivalence reliability. This measure is a numerical coefficient of reliability ranging from 0 to 1 and the higher the score, the more reliable the scale. A reliability coefficient of .70 is typically viewed as acceptable (Nunnaly, 1978). Reliability analysis through Cronbach’s alpha was performed on the four constructs that contained interval and ordinal level data (attitudes, subjective norms, perceived behavioral control, and dispensing practices) and all coefficients exceeded the acceptable value of .70. In fact, all reliability coefficients exceeded .90. Given that the construct of knowledge is based on nominal level data in
which a composite knowledge score was calculated for each individual, it did not make sense to assess scale reliability through Cronbach’s alpha. Instead, the equivalence reliability measure for knowledge will rely on the stability reliability measure and high Pearson correlation that was determined through the test-retest method. However, for the other four constructs, reliability estimates were .98 for attitudes, .94 for subjective norms, .99 for perceived behavioral control, and .95 for dispensing practices. Therefore, the variables are measuring each construct and the scale is shown to have equivalence reliability. In sum, reliability tests resulted in adequate values and the statewide pharmacist survey was found to have stability and equivalence reliability.

*Data Analysis*

Because the proposed research is employing a mixed methods study design, the data analysis for this proposal included both qualitative and quantitative techniques. Although the first main research question, *what do the 91 accredited schools of pharmacy in the U.S. teach about emergency contraception*, is answered through an electronic survey of Deans, the responses from this survey only required basic descriptive statistics (frequencies, mean, median, mode) and categorization into typologies. Frequency calculations measure numbers and percentages of schools that teach about emergency contraception and a typology categorizes and quantifies the courses that teach this content.

The second major research question, *how is emergency contraception course content taught at accredited schools of pharmacy as perceived by third or fourth year pharmacy students at the four accredited schools of pharmacy in Florida*, was explored through focus groups with pharmacy students and this information required qualitative
analysis techniques. In addition, the third major research question, *what is the relationship among emergency contraception knowledge, attitudes, subjective norms, perceived behavioral control, and dispensing practices of Florida pharmacists registered with the Board of Pharmacy*, was measured through a survey of a random sample of pharmacists and required quantitative analysis techniques. Therefore, both the qualitative data analysis methods used to analyze the focus group data and the quantitative data analysis methods used to analyze the pharmacist survey are outlined below.

**Qualitative Data Analysis Plan**

Qualitative data includes focus group transcripts, observation notes, debriefing session notes, participant demographic information, and any other pertinent documents. Ethnograph version 5 computer software program was used to help with coding, and thematic and content analysis. The reason an ethnographic computer program was chosen is because it can handle project data files in multiple forms such as transcripts, field notes, and any other text based documents. In addition, Ethnograph has a large storage capacity that will be good to use with focus group transcripts.

An editing type of qualitative analysis was employed where the editor begins with the text and then from this text develops codes, themes, and concepts. Preliminary and thematic analyses were employed to create a range of themes, typologies, propositions and concepts. A coding template was developed where categories were created from questions and from the topical guide. Each code was defined in the code book including the parameters involved in assigning the code. Later, the data was checked against the code template to see if it fit. The codes were adjusted and new codes were added as they emerge.
Open coding, axial coding, and selective coding allowed for data reduction and categorization of data into themes. Open coding is the first look at the collected data where themes are located and assigned initial codes or labels. Open coding brings themes within the data to the surface. Axial coding is the second look at the data where the researcher already has an organized set of initial codes and focuses more on the coded themes than on the data. In axial coding, the initial codes are reviewed and examined to establish linkages between themes and raise new questions. Selective coding is the last look at the data. With selective coding, the researcher scans the data and previous codes and looks to compare and contrast cases. Selective coding is performed when all or most of the data is collected.

Analytic memos were written and kept throughout the coding process. Analytic memos are thoughts or ideas written down throughout the coding process. The memos contain thoughts and reflections about the data, coding, and coding process. Each code contained a separate memo discussing the theme. The purpose of an analytic memo is to provide a bridge between the raw data and abstract or theoretical thinking.

In order to check for coding consistency, trustworthy or consistency checks were performed where the data was reviewed several times to ensure consistency of the coding system. In addition, a single coder performed most of the analysis but another coder analyzed at least 10% of the data to ensure consistency of the data and inter-rater reliability. The second coder was trained to understand the codebook prior to coding and analysis. The same limitation of having the researcher as the moderator of the focus groups exists in having the researcher analyze the data for the focus group discussions; however employing two people for qualitative coding limited the researcher bias. After
initial data analysis was performed, the analysis moved into an interpretive, theory development, and discussion phase.

*Researcher Bias*

Researcher bias exists in any type of research; however researcher behavior can limit the amount of bias that is present. Neuman (2003) identifies six categories of interviewer bias that can be applied to focus groups and focus group moderators. The six categories include: 1) errors by the respondent, 2) unintentional errors by the interviewer, 3) intentional errors by the interviewer, 4) bias by interviewer’s expectations of respondents, 5) lack of interviewer probing, and 6) influence on responses due to interviewer behavior.

In order to limit these biases, the focus group moderator became familiar with conducting focus groups and became aware of the potential biases and methods for bias reduction. The first category of bias as outlined in Neuman (2003), errors by the respondent, includes errors made because of the presence of others such as lying, misunderstanding, or embarrassment. This bias was avoided through the moderator creating an open atmosphere where participants felt comfortable sharing their thoughts, feelings, and experiences and where the moderator was clear in stating the focus group questions and in explaining how the focus group worked. The second category of bias, unintentional errors by the interviewer, includes the interviewer reading questions out of order, mis-recording respondent answers, and misreading questions. In order to reduce this bias, the focus group moderator became familiar with conducting focus groups, including becoming familiar with the focus group topical guide and the order of the questions. In addition, the moderator employed a note-taker and a tape recorder to aid in
reducing any unintentional error by the moderator. The third bias, intentional errors by the interviewer, includes changing answers on purpose or omitting questions on purpose. In order to minimize this bias, the moderator stayed close to the focus group topical guide.

The fourth bias, bias by interviewer’s expectations of respondents, includes the moderator expectations about a respondent’s answer based on appearance or perceived living situation (Neuman, 2003). To reduce this bias, the moderator worked to remain neutral and refrain from making value judgments about the participants. The fifth bias, lack of interviewer probing, was reduced through the moderators understanding how and when to probe properly. In addition, the moderator developed potential probes to be included in the topical guide, should they be needed. The six and final bias, influence on responses due to interviewer behavior, includes changes in respondents answers based on moderators tone, comments, appearance, or reactions. In order to reduce this bias, the moderator remained neutral and open to all responses and avoided passing verbal or non-verbal judgment to the responses given by participants in the focus group discussions.

And last, in order to obtain a greater understanding of researcher bias in general, a detailed journal of research perceptions, biases, and beliefs was kept throughout the qualitative research process so that potential bias could be determined, understood, and reduced.

**Trustworthiness**

Trustworthiness in qualitative research is much like validity and reliability in quantitative research. According to Lincoln and Guba (1985), the basic question addressed by trustworthiness is, “How can an inquirer persuade his or her audiences that
the research findings of an inquiry are worth paying attention to?” (p. 290).

Trustworthiness establishes confidence in the research findings, applicability of findings to other contexts, consistency in findings if research was conducted on similar subjects, and neutrality of the researcher so that the findings are determined by participants, not by researcher bias (Lincoln & Guba, 1985). Lincoln and Guba (1985) discuss four criteria by which trustworthiness can be operationalized in research: 1) credibility, 2) transferability, 3) dependability, and 4) confirmability. These four criteria were employed in the proposed research and will be discussed in greater detail below.

The first criteria, credibility, determines if the data reflects reality. In qualitative research, the researcher assumes multiple realities and then attempts to represent them (Hoepfl, 1997). Credibility is met through the richness of the information collected and can be measured in a number of ways including triangulation, allowing others to analyze raw data, and member checks. Obtaining a second coder aided in establishing credibility as well as performing member checks with focus group participants (Lincoln & Guba, 1985). After each focus group, the note taker presented a summary of the main ideas that had been identified in each question and asked if participants had any changes or additions they would like to make to the summary; when changes or additions were made, this information was included. Debriefing between the note-taker and the moderator occurred directly after each focus group discussion. These steps aided in increasing the credibility of this study.

The second criteria, transferability, examines whether research findings are applicable to similar situations or in other contexts (Lincoln & Guba, 1985). In order to establish transferability, the proposed research study maintained detailed notes and
journaling. In addition, the researcher will ensure that the code book, focus group topical
guide, and results of the study be made available to the public so that the study may be
transferred to varying contexts if warranted.

The third criteria, dependability, determines if the results stay consistent over time
and across varying researchers. Lincoln and Guba (1985) propose one method that they
term “inquiry audit” (p. 317) where consistency is met through employing additional
researchers that review the process and product of the research. Therefore, dependability
was met in this study by employing an additional researcher to aid in the process of the
research and in the data analysis. An additional researcher was present throughout the
focus group discussions, debriefing sessions, and provided feedback on the focus group
topical guide. An additional coder analyzed at least 10% of the data to ensure
consistency of the data and inter-rater reliability. The second coder was trained to
understand the codebook.

The fourth criteria, confirmability, refers to the neutrality of the researcher’s
interpretations in qualitative research. Lincoln and Guba (1985) suggest that to meet
confirmability, an audit trail must be generated that includes 1) raw data; 2) analysis
notes; 3) reconstruction and synthesis products; 4) process notes; 5) personal notes; and
6) preliminary developmental information (p. 319-320). In order to meet the
confirmability criteria, a tape recorder was employed to record the focus groups, field
notes were written, a note-taker was employed, debriefing sessions I after each focus
group, a code book was employed, and detailed notes (journal) of a personal nature were
maintained that included ideas, thoughts, biases, motivations, predications, and
expectations. These steps discussed above attributed credibility, transferability,
dependability, and confirmability to the qualitative research employed in this study so that the study maintained overall trustworthiness.

Quantitative Data Analysis Plan

Univariate & Bivariate Analyses

Quantitative data analyses were performed primarily using SPSS statistical software (SPSS 16.0, SPSS Inc., Chicago), although SAS statistical software (SAS Institute Inc, Cary, NC) was used in the factor analysis. First, frequency distributions were performed on all categorical level variables to determine response distributions and means and standard deviations were calculated for all continuous variables. These procedures identified any outliers or non-meaningful responses that were recoded if necessary. In addition, for continuous variables, response patterns emerged which sometimes called for collapsing of data based on the distribution.

Next, bivariate analysis was performed to test associations between all socio-demographic variables (age, gender, ethnicity, marital status, religious and party affiliation, type of pharmacy, pharmacy school and year attended, and length of time in practice) and pharmacist dispensing practices. Because the criterion variable, dispensing practices, is measured at both the nominal and ordinal level and the socio-demographic variables are measured on the nominal, ordinal, and ratio levels, three statistical tests were performed to detect bivariate associations: Chi-Square tests, Kruskal-Wallis Tests, and Spearman Correlations.

A Chi-Square test of independence is the appropriate statistic to use when both variables are assessed at the nominal level to determine if there is a relationship between the two variables. The Kruskal-Wallis test is appropriate in bivariate analysis with an
ordinal-level criterion variable and a nominal level predictor variable. Spearman correlations are recommended when there is an ordinal-level predictor variable and an ordinal-level criterion variable. This test yields the correlations between two variables and will determine the strength of the relationship between two variables (Hatcher & Stepanski 1994).

Bivariate associations were also be explored between (a) knowledge and dispensing practices, (b) attitudes and dispensing practices, (c) subjective norms and dispensing practices, (d) perceived behavioral control and dispensing practices, and (e) intention to dispense and dispensing practices. Chi-Square tests and Kruskal-Wallis tests were used to assess the relationships between knowledge and dispensing practices, attitudes and dispensing practices, subjective norms and dispensing practices. Kruskal-Wallis tests were used to assess the relationships between perceived behavioral control and dispensing practices and intention to dispense and dispensing practices (Hatcher & Stepanski 1994).

**Multivariate Analyses**

Logistic regression models were constructed to discover whether emergency contraception knowledge, attitudes, subjective norms, perceived behavioral control, and intention to dispense taken together or separate, are predictive of pharmacists’ dispensing practices. The dependent variable, dispensing practices, was measured by two survey questions and was grouped to create dichotomous yes/no variable.

Logistic regression is the appropriate statistical test to use when the dependent variable is dichotomous and when there is a single dependent variable with multiple predictor or independent variables. In addition, logistic regression should be employed
when the criterion variable is nominal or ordinal and when the predictor variables are at the nominal, interval, or ratio level (Hatcher & Stepanski 1994).

There are five independent variables, knowledge, attitudes, social norms, perceived behavioral control, and intention to dispense. Knowledge consists of 10 questions and is measured at the nominal level. A knowledge score ranging from 1-10 was created for each study participant based on how many questions they get correct. Therefore, knowledge was put into the regression model as a continuous variable. Attitude consisted of 8 separate questions and was measured at the nominal and ordinal levels. The 7 ordinal level likert scale questions were treated as continuous variables when put into the model. For the other question, it will be collapsed into categories to create a nominal level variable. Subjective norms consisted of 6 questions and were measured at the ordinal and nominal levels. The 4 likert scale questions were treated as continuous variables when put into the model and the two nominal level questions were collapsed into categories and run at the nominal level. Perceived behavioral control consisted of 4 questions and was measured at the ordinal level. Because the 4 questions are likert scale questions, they were treated as continuous variables when put into the model. Intention to dispense Plan B consisted of 8 likert scale questions measured at the ordinal level and were entered into the model as a continuous variable.

In constructing logistical regression models, specific steps should be taken. Approximately six models will be created to detect (1) if knowledge is predictive of dispensing practices, (2) if attitudes are predictive of dispensing practices, (3) if subjective norms are predictive of dispensing practices, (4) if perceived behavioral control is predictive of dispensing practices, (5) if intention to dispense is predictive of
dispensing practices, and (6) if all variables taken together are predictive of dispensing practices. Also, the socio-demographic variables were entered into each model to act as control variables. With each model, appropriate diagnostics were run to test for collinearity.

The Wald F statistic is the measure in logistic regression that tests the null hypothesis: that none of the predictor variables are related to the log odds of the criterion variable. In addition, the Wald F will measure the models’ goodness of fit. In logistic regression, pseudo R-Square is used to measure the strength of association between the variables. The significance between knowledge, attitudes, subjective norms, and perceived behavioral control in predicting dispensing practices was measured by odds ratios and 95% confidence intervals. A p-value of less than .05 was employed as a measure at which to reject the null hypothesis.

Linking Datasets

Three different yet intimately related datasets were produced upon completion of this research. Data was procured from 1) the curriculum review survey, 2) focus group discussions with pharmacy students, and 3) the state-wide pharmacist survey. Taken together, findings demonstrated what is intended to be taught to pharmacy students, what is actually being learned by pharmacy students, and how practicing pharmacists’ perceptions of emergency contraception are associated with their dispensing practices.

In essence, this research examines both the education and practice of pharmacists by following the natural progression of pharmacists from education to subsequent practice. It examines the emergency contraception curricula and course content intended to teach future pharmacists, surveys pharmacy students to understand how this course
content translates into learned knowledge and projected dispensing behavior, and then
lastly it surveys the practicing pharmacists to understand their emergency contraception
knowledge, attitudes, and actual dispensing practices. In total, this research study
employs a mixed methods design to offer a completed picture of pharmacists and
emergency contraception from education to practice.
Chapter Four: Results

Introduction

Chapter four has been partitioned into three sections based on each research question. Thus, Section 1 discusses the pharmacy school curriculum review and answers research question 1, Section 2 describes the pharmacy student focus group discussions and answers research question 2, and Section 3 describes the statewide pharmacist survey and answers research question 3.

Research Questions

Question 1: What do the 91 accredited schools of pharmacy in the U.S. teach about emergency contraception?

    Question 1a: What objectives, course assignments, course readings, and lectures concerning emergency contraception are provided in the required courses at the 91 accredited schools of pharmacy in the U.S.?

    Question 1b: What objectives, course assignments, course readings, and lectures concerning emergency contraception are provided in the elective courses at the 91 accredited schools of pharmacy in the U.S.?

Question 2: How is emergency contraception course content taught at accredited schools of pharmacy, as perceived by fourth year pharmacy students at the four accredited schools of pharmacy in Florida?
Question 2a: What did pharmacy students learn about emergency contraception in their pharmacy school classes?

Question 2b: How was emergency contraception taught in their pharmacy school classes?

Question 2c: What are the projected emergency contraception dispensing practices of pharmacy students?

Question 3: What is the relationship among emergency contraception knowledge, attitudes, subjective norms, perceived behavioral control, intention to dispense, and dispensing practices of Florida pharmacists registered with the Board of Pharmacy?

Question 3a: Is emergency contraception knowledge predictive of dispensing practices of Florida pharmacists?

Question 3b: Are attitudes about emergency contraception predictive of emergency contraception dispensing practices of Florida pharmacists?

Question 3c: Are subjective norms about emergency contraception (whether important people such as colleagues, supervisors, corporate headquarters, and peers think they should dispense emergency contraception) predictive of emergency contraception dispensing practices of Florida pharmacists?

Question 3d: Is perceived behavioral control, the perceived ease or difficulty of dispensing emergency contraception, predictive of dispensing practices of Florida pharmacists?

Question 3e: Is intention to dispense emergency contraception predictive of dispensing practices of Florida pharmacists?
Question 3f: Are emergency contraception knowledge, attitudes, subjective norms, perceived behavioral control, and intention to dispense taken together, predictive of emergency contraception dispensing practices of Florida pharmacists?

Section I: Pharmacy School Curricula Review

The first research question was addressed through a web-based survey of Deans of accredited schools of pharmacy in the U.S. As of April 2007, there were 91 accredited schools of pharmacy in the U.S. In this case, the target population, the sampling frame, and the sample are the same because the survey acts as a census. The Deans of all 91 schools were sent an electronic survey via Ultimate Survey querying them about emergency contraception course content in their Pharm. D. programs at their respective institutions. Please see Appendix U for a list of the pharmacy schools that received the survey. Because not all schools had Academic Deans, a decision was made to request information from the Deans of all schools. Of the 91 Deans, 47 responded, yielding a 52% response rate. The Dillman Tailored Design Method was employed in data collection which included the following four letters: (a) a pre-notice, (b) an abbreviated informed consent form, (c) a cover letter and questionnaire, and (d) a thank you/reminder letter. A fifth letter was generated and added to the study design during the data collection process to act as a second reminder letter to help yield a higher response rate. This letter was submitted and approved by the IRB prior to use. Please see Appendix V to view this second follow-up letter.

The Dean’s survey included only three questions with follow-up questions depending on the answer provided. The first two questions asked Deans if they offer
required courses and/or elective courses that provide content on emergency contraception. Content was described as including lectures, course readings, course objectives etc. If they answered that they did include content on emergency contraception, they were asked to include the title of the course and include the syllabi for review. The third and final question asked Deans if they think that pharmacy school curricula in the U.S. should include content material on emergency contraception and to explain their answer. Content was defined as including pharmacology, legal and ethical issues, and the continual controversy that surrounds emergency contraception.

Of the 47 Deans that responded, 87.2% (n=41) reported that they do offer required courses that provide content on emergency contraception, 8.5% (n=4) reported that they do not, and 4.3% (n=2) said that they were not sure (Table 9). In terms of elective courses, 17% (n=8) reported that they do offer elective courses that provide content on emergency contraception, 72.3% (n=34) reported that they do not offer these courses and 10.6% (n=5) said that they were not sure. All respondents (n=47, 100%) reported that they believe that schools of pharmacy in the U.S. should include content material on emergency contraception (Table 9).

Table 9. Quantitative Results from Dean’s Survey (n=47).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does school offer required courses that provide content on EC?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>41</td>
<td>87.2%</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>8.5%</td>
</tr>
<tr>
<td>Not Sure</td>
<td>2</td>
<td>4.3%</td>
</tr>
<tr>
<td>Does school offer elective courses that provide content on EC?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>8</td>
<td>17.0%</td>
</tr>
<tr>
<td>No</td>
<td>34</td>
<td>72.3%</td>
</tr>
<tr>
<td>Not Sure</td>
<td>5</td>
<td>10.6%</td>
</tr>
<tr>
<td>Should pharmacy school curricula include content on EC?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>47</td>
<td>100.0%</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

EC = emergency contraception
Of the 87.2% (n=41) of Deans that said their schools offer *required* courses that provide content on emergency contraception, 34% (n=14) did not list the titles of the courses or attach the syllabi for review when asked. Sixty-five percent (n=27) either listed course titles or provided syllabi for review. Of the 17% (n=8) of schools that reported that they do offer *elective* courses that provide content on emergency contraception, 50% (n=4) did not list the titles of the courses or attach the syllabi for review. The lists of courses, both *required* and *elective*, that were said to provide content on emergency contraception have been classified into a typology based on the course titles. This typology is found in Table 10 below and a full list of courses titles is provided in Appendix W.

**Table 10. A Typology of Required and Elective Courses that Contain Content on Emergency Contraception per the Responses from the Dean’s Survey.**

<table>
<thead>
<tr>
<th>Classification of Required Courses</th>
<th>Number of courses that fall into category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacotherapy &amp; Therapeutics</td>
<td>17</td>
</tr>
<tr>
<td>Pharmacy Ethics</td>
<td>6</td>
</tr>
<tr>
<td>Pharmacology</td>
<td>4</td>
</tr>
<tr>
<td>Issues in Contemporary Pharmacy Practice</td>
<td>3</td>
</tr>
<tr>
<td>Over-the-Counter Medications</td>
<td>2</td>
</tr>
<tr>
<td>Women’s Health</td>
<td>2</td>
</tr>
<tr>
<td>Self-care</td>
<td>2</td>
</tr>
<tr>
<td>Professional Skills Development</td>
<td>1</td>
</tr>
<tr>
<td>Early Practice Experience I</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classification of Elective Courses</th>
<th>Number of courses that fall into category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women’s Health</td>
<td>2</td>
</tr>
<tr>
<td>Contraceptive Management</td>
<td>1</td>
</tr>
<tr>
<td>Self-care</td>
<td>1</td>
</tr>
</tbody>
</table>

The majority of courses that provide content on emergency contraception are taught in pharmacotherapy and therapeutics courses. Specifically, many schools noted that within these pharmacotherapy and therapeutics courses, this content was taught in the women’s health section. Although it varies from school to school, most students have
taken the pharmacotherapy and therapeutics courses listed by their second year of study. After pharmacotherapy and therapeutics, schools listed that material on emergency contraception was covered in pharmacy ethics, pharmacology, issues in contemporary pharmacy practice, over-the-counter medications, women’s health, self-care, professional skills development, and early practice experiment. One school in particular requires a course called early practice experience and in this course students obtain certification from the state in emergency contraception. Specifically, students learn about prescriptive authority and are trained to counsel patients.

Among the four schools that listed elective courses that provide content on emergency contraception, content was taught in a women’s health course (n=2), a contraceptive management class (n=1), and a self-care class (n=1).

Question 1 asked, what do the 91 accredited schools of pharmacy in the U.S. teach about emergency contraception? In addition, sub-questions inquired about what objectives, objectives, course assignments, course readings, and lectures concerning emergency contraception are provided in the required and elective courses at the 91 accredited schools of pharmacy in the U.S.? In order to more fully answer research question 1, Deans were asked to submit the syllabi in which they reported to provide course content on emergency contraception. However, only 10 syllabi were received from seven schools or from 14% of the sample who reported that they provide course content on emergency contraception in either required or elective classes. Additionally, the syllabi that were received did not provide detailed information on objectives, objectives, course assignments, course readings, and lectures concerning emergency contraception.
contraception. In fact, only four out of the ten syllabi explicitly mentioned emergency contraception.

In order to objectively analyze the syllabi that were retrieved for emergency contraception course content, a method for categorization was developed. First, after reviewing course syllabi, the defined categories for course content provided on the Deans survey, and with the aid of established pedagogy, course content was defined as:

- course description
- objectives
- lectures
- readings
- assignments

Next, each syllabus was examined based on course content area. Ratings ranged from one to four and each area of course content received an individual rating. The specific definition of each numeric rating is listed below and Table 11 displays these ratings of course content in a comparative format.

**Rating 1** = No overt mention of emergency contraception in content  
**Rating 2** = The topic listed in the content could lend itself to emergency contraception, but does not specify  
**Rating 3** = The content mentions contraception, but not emergency contraception  
**Rating 4** = The content specifically mentions emergency contraception
Table 11. Review of Retrieved Syllabi that Reported to Contain Content Material on Emergency Contraception from the Dean’s Survey.

<table>
<thead>
<tr>
<th>Course Title*</th>
<th>Description</th>
<th>Objectives</th>
<th>Lectures</th>
<th>Readings</th>
<th>Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contraceptive Management Elective</td>
<td>4</td>
<td>n/a**</td>
<td>4</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Professional Skills Development II</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Required</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Pharmocotherapy II Required</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Integrated Science &amp; Therapeutics</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Required</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Women’s Health</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Some offer required, some elective</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Endocrinology/ Gastroenterology Required</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Pharmacy Practice IV Required</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Pharmacy Ethics Required</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>n/a</td>
<td>2</td>
</tr>
<tr>
<td>Therapeutics I Required</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Reproductive Course Required</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

*Courses are listed in no particular order
**n/a is listed if the syllabi did not mention the specific content

Among all retrieved syllabi which reported to include content on emergency contraception, only four of the ten syllabi overtly mentioned emergency contraception in any of the content areas. Two out of ten syllabi cited contraception in a content area, but not emergency contraception, three out of ten mentioned a topic area that could lend itself to emergency contraception such as ethics or women’s health, and two out of the ten syllabi retrieved made no overt mention of emergency contraception or contraception, or even contained a topic that could lend itself to a discussion about emergency contraception. In general, there was no particular patterning or clustering of where the content was located or described, however courses that contained emergency contraception...
contraception in one content area were more likely to contain it in another content area and vice versa.

In addition, although it was not requested that the schools include a description of where the emergency contraception course content is taught when attaching syllabi, one school did include additional information about how this content is taught in class. This Dean responded that within their course, emergency contraception is used “as an example of one of the many ethical dilemmas that pharmacists confront and help them construct a thought process on how to deal with the issues, while respecting the patients’ right and their own values”. This depiction provides insight into how this content may be addressed in this particular class where students learn to balance patient rights and their own values. It would be interesting to follow up on this and perhaps observe a pharmacy class to view how this material is actually taught.

The third and final question of the Dean’s survey asked if they believe that pharmacy school curricula in the U.S. should include content on emergency contraception. All respondents said yes. They were then asked to explain their answer in an open-ended format. Of all 47 respondents, 27.7% (n=13) did not answer as to why they thought this content should be included in pharmacy school curricula, however 72.3% (n=34) did.

Through qualitative coding and analysis, five main themes emerged from the open-ended response data. Overall, pharmacy school Deans answered that school curricula should include material on emergency contraception due to 1) pharmacy practice and training, 2) the role of pharmacists in terms of counseling and education, 3) the controversies that exist about the medication 4) the nature of the medication: it is a
drug therapy and, 5) the idea that this curricula will increase pharmacists’ knowledge for best patient care. These five themes are listed in order based on the number of times they were mentioned and will be discussed below.

*Pharmacy Practice/Training*

The largest grouping of respondents (mentioned 18 times) answered that pharmacy school curricula should include content material on emergency contraception because of issues surrounding pharmacy practice and training. Specifically, the Deans expressed that pharmacists will encounter this medication in their practice and therefore pharmacists should have this training so that they can perform well in their professional practice. Examples of this sentiment are presented below:

- *Pharmacists need to be trained with respect to all prescribed drugs that they may encounter in practice.*

- *It is a part of practice and each pharmacist should know how to assess the situation and safely use these products.*

- *It is a component of pharmacy practice with medical, social, and ethical aspects.*

- *It is in within the scope of practice for pharmacists especially ones that work in community settings so the pharmacology, dispensing issues and ethics should be discussed.*

- *California pharmacists may dispense emergency contraception under a state protocol. Training is essential.*

*Role of Pharmacists: Counseling/education*

Another major category of response (mentioned 13 times) that emerged from the data was the need for training of pharmacists on emergency contraception due to the
perceived counseling and educational role of pharmacists. Specifically, participants responded that pharmacists need to be knowledgeable on emergency contraception in order to provide accurate information to patients and to be able to discuss, counsel, and advise patients on the medication. Some responses are presented here:

- This subject arises in all Community Pharmacy settings and pharmacists need to be able to intelligently discuss this with patients when questions are asked.

- It is legal and pharmacies are a front line delivery method of EC. Many misperceptions abound about these products and pharmacists should know the facts if their patients ask them questions.

- Pharmacists serve patient health needs in terms of products and accurate information. This area may be very important for many patients and families.

- Pharmacists need to be able to give appropriate advice.

- ...Education in this area of pharmaceutical care will enable the pharmacist to be an advisor to the physician and a counselor to the patient.

- Because pharmacists will encounter this medication in the pharmacies, it is important for them to understand how emergency contraception works. This will enable them to have an informed conversation with a patient considering emergency contraception. Even if they do not plan to work in a retail setting, they will inevitably be asked questions regarding emergency contraception at some point in their career.

Controversy

Many respondents alluded to the controversy and dilemma that surrounds emergency contraception (mentioned 11 times). Many respondents noted that pharmacy school curricula should include content on emergency contraception despite how controversial the medication may be:
...It is our job as educators to expose pharmacy students to as much pharmacy knowledge as possible, no matter how controversial.

Curricula should include all drug therapeutic uses, including mitigation of physiologic conditions, where pharmacists play role, no matter how controversial their role and the drug’s use might be. Student pharmacists deserve to have information regarding therapeutic indications, legal implications, and discussion of various “opinions” provided in their course work.

From a pharmacist’s and pharmacology perspective, it is important for students to be aware of the mechanism of action, important counseling points and the ethical arguments surrounding EC.

Some respondents believed that content should be taught so that pharmacists understand that emergency contraception is not the same as a medical termination or similarly so that they understand that emergency contraception’s mechanism of action is comparable to that of hormonal contraception:

...Students should be informed about the product, and most especially, should be informed that it is not the same as mifepristone (RU 486).

Pharmacists now are in the position to not only dispense prescriptions for EC, but to also provide it without a prescription to those 18 years and older. Knowledge regarding mechanism of action (especially in regards to the mechanism being the SAME as all hormonal contraception), appropriate use and counseling is essential to the role of a pharmacist...

Another pharmacist believed that content should be taught so that pharmacists can have knowledge about the medication should they want to refuse dispensing:

...Even if a pharmacist engages the right to refuse dispensing (which I do approve of based on moral or ethical conflicts ) – pharmacists must have appropriate knowledge on why he/she has chosen to refuse and what his/her obligation is to the patient at that point in time.

Additionally, these two respondents talk about the balance that some pharmacists try to keep between professional responsibilities and personal beliefs.
• This is a medication applicable to a sizable portion of the population. It is a very emotional issue as well. Pharmacists MUST know the information necessary for them to be a reasonable counselor on use and MUST be aware of their professional responsibilities to provide care for patients while balancing that with their own personal beliefs. If you are a pharmacist, or a pharmacy student you do NOT have any choice. You must know about EC.

• ...Factual information is helpful for the patient regardless of religious beliefs and should be available. Informing people of the correct facts does not mean you are pushing them one way or the other on the issue.

Drug Therapy

It was mentioned 8 times that emergency contraception content should be taught in pharmacy schools because it is a drug therapy and many Deanss said flatly that it is the duty of pharmacy school curricula to teach about all drug therapies. Some respondent comments are below:

• It’s a drug therapy!

• Emergency contraception is an OTC product. Schools teach about OTC products...

• Curricula should include all drug therapeutic uses...

• It is pharmacological therapy – that’s our job

• It involves drug therapy

• Pharmacy schools should educate students on all legal uses of pharmacologic therapy

Knowledge for Best Patient Care

Lastly, it was mentioned 7 times in the open-ended responses that curricula should include content on emergency contraception so that each pharmacist has the knowledge of the medication for best patient care.

• Same reasons as any therapeutic topic, so pharmacists can provide the best patient care to all patients no matter what the medication is...
Because pharmacists will encounter this medication in the pharmacies, it is important for them to understand how emergency contraception works. This will enable them to have an informed conversation with a patient considering emergency contraception. Even if they do not plan to work in a retail setting, they will inevitably be asked questions regarding emergency contraception at some point in their career.

...(pharmacists) must be aware of their professional responsibilities to provide care for patients while balancing that with their own personal beliefs...

...Since emergency contraception is a reality and growing in use, it is critically important that the pharmacist is the drug expert in this area of patient care no different from diabetes or other conditions...

On the whole there were sentiments that pharmacists must know correct information about emergency contraception regardless of personal or religious beliefs and regardless of the controversial nature of this topic for best patient care, professional practice, and counseling/education of patients. In addition, given the 52% response rate, it is important to note that we did not hear from 48% of the sample. Therefore, this nonresponsiveness is a limitation in that we have no information from the Deans of these schools and no way to capture these responses.

Section II: Pharmacy Student Focus Groups

The second research question was addressed through focus groups conducted at all four accredited Schools of Pharmacy in Florida: Florida Agricultural and Mechanical University (FAMU), Nova Southeastern University (NOVA), Palm Beach Atlantic University (PBA), and University of Florida (UF). All four schools were contacted regarding participation in the focus groups and letters of support were procured.

A topical guide was developed prior to the focus group discussions by the researcher and a panel of experts, which consisted of pharmacy faculty, recent pharmacy
school graduates, practicing pharmacists, and a focus group expert (n=8). A preliminary list of topic areas was generated that began with non-threatening issues leading into more specific questions. Through the topical guide development and feedback from the panel, it became clear that there were many close-ended questions that needed to be addressed by the focus group participants. Because focus group discussions lend themselves to open-ended questions, a paper and pencil survey was developed that contained these close-ended questions. This paper and pencil survey was administered to students prior to starting the focus group. See Appendix X for the topical guide and the paper and pencil pre-survey that was administered to students. Prior to the actual focus groups, the researcher piloted the focus group session with colleagues.

**Paper and Pencil Pre-Survey Results**

In total, 21 third and fourth year Pharm. D. students participated in the focus group discussions (8 from UF, 4 from FAMU, 5 from PBA, 4 from NOVA). The paper and pencil survey consists of 10 questions, five of which are close-ended and five of which are open-ended. All survey data were entered into a Microsoft® Office 2003 spreadsheet (Microsoft Corporation, Redmond, Washington). Data from the five close-ended questions can be viewed below in Table 12.
Table 12. Paper and Pencil Focus Group Survey Data: Close-Ended Questions (N=21)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did you take any classes in your Pharm D program which taught you about EC?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>19</td>
<td>90.5%</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
<td>9.5%</td>
</tr>
<tr>
<td>Have your pharmacy school classes discussed the new OTC status of EC?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>16</td>
<td>76.2%</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>19.0%</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>4.8%</td>
</tr>
<tr>
<td>Have your pharmacy school classes discussed the dispensing issues (e.g. pharmacists refusals to dispense) surrounding EC?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>14</td>
<td>66.7%</td>
</tr>
<tr>
<td>No</td>
<td>6</td>
<td>28.5%</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>4.8%</td>
</tr>
<tr>
<td>Will you dispense EC upon becoming a pharmacist?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>16</td>
<td>76.1%</td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td>4.8%</td>
</tr>
<tr>
<td>Not sure</td>
<td>3</td>
<td>14.3%</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>4.8%</td>
</tr>
<tr>
<td>Are pharmacists well enough informed to confidently dispense EC?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>9</td>
<td>42.9%</td>
</tr>
<tr>
<td>No</td>
<td>7</td>
<td>33.3%</td>
</tr>
<tr>
<td>Not sure</td>
<td>4</td>
<td>19.0%</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>4.8%</td>
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</tbody>
</table>

Although 90.5% of students responded that they did learn about emergency contraception in their Pharm D classes, still nearly 20% answered either that they would not or that they were not sure about their future dispensing of the medication. Similarly, while the majority of students responded that they did learn about emergency contraception in their classes, over half (52.3%) of participants were either not sure if pharmacists were well enough informed to dispense emergency contraception or believed that pharmacists were not well enough informed to confidently dispense the medication.

The first open-ended question asked which classes taught about emergency contraception and asked to specify if the class was required or was offered as an elective. Of the students who responded that their Pharm D program taught about emergency contraception (n=19), nine students said that a required pharmacotherapy course covered
this material, six students mentioned that a required therapeutics course covered this material, four said that a required ethics course covered it, and three students each answered that a required medical chemistry course or a required pharmacy care course, or an elective women’s health course covered this material. Lastly, two students each said that a required law course or a required patient care management course or a dynamics course covered emergency contraception. All in all, most students responded that they were taught about emergency contraception in a required pharmacotherapy course which substantiated findings from the curriculum review survey.

When asked what type of instructional method was used, the majority of students reported class lectures as the most reported instructional method, followed by discussion and class readings. One student said that they had a debate format in a class. The bulk of the students said that they learned the most from a lecture format and one student noted that they learned the most from personal research as the professors did not teach them much. Most students stated that there was more information that they wished they had learned including OTC laws, the effects of prolonged use, details on side effects, counseling points, contraindications, time limits, explanation of how it is not an abortion, the effect of Plan B on an already pregnant female, laws and regulations, adverse effects, interaction with women taking birth control at the same time, industry standards/policies, risks associated with repeat use, and ethics.

Focus Group Discussion Analysis

Focus group research questions asked about three major topical areas: 1) knowledge about emergency contraception from their pharmacy schools classes, 2) teaching instruction on emergency contraception within those classes, and 3) projecting
dispensing practices of emergency contraception upon becoming a pharmacist. Therefore, the following analyses were partitioned by topical area. Although responses fell into these three categories, new and unexpected themes emerged from the data.

Knowledge. Students were asked both about their specific knowledge of emergency contraception from pharmacy schools classes and were queried about their general knowledge. There was a major disconnect between what students reported on the quantitative paper and pencil survey and what was shared in the focus group discussions. As opposed to what students reported on the paper and pencil survey, the majority of pharmacy students reported that they did not learn about emergency contraception from their pharmacy school classes when queried in the focus group discussions. When pharmacy students were asked where they have gotten information about emergency contraception that they trust, some said they received this information from class; however the majority answered from outside sources such as work, print media, internet, news, and friends.

“If we would definitely say that the majority of what we know is from either from working in retail or other outside sources. Not necessarily from our curriculum.”

Of the students that did receive some training in required classes, the majority commented that it was brief:

“...I just remember one slide like one bullet point you know during our birth control or female hormone lecture...And they haven’t discussed it a lot yet. So…”

The most frequently cited answer to where they received information about emergency contraception was work with student’s answering “in the actual workplace” and “from working”. When at work, they either read the package insert, asked a pharmacist, read continuing education (CE) credit materials, or a client approached them
with questions about the drug and they had to look up information. Examples of these sentiments are below:

“Like she said continuing education is usually sponsored by drug companies, um they send educational materials to you know where you work, retailer. Also if you’re just working in a pharmacy with your… um with a pharmacist and you dispense it, you don’t know what it is, you ask them”.

“Customers coming up too. Say oh what about the morning pill and I’m like huh; It’s prescription and he’s like not anymore.”

“Package insert...
(another member) Yeah to educate ourselves.
(another member) “You know myself. I was like interested in it. So you know reading the thing that comes with it you know.”

“…just working experience and having different people coming up and ask us questions about it and you have to go look up”

Other outside sources included friends, a Pharmacy Times article, the internet, and one student mentioned hearing about the firing of pharmacists who did not dispense it in the news:

“I kinda just looked it up briefly on the internet; about how it works…”

“I personally did some internet research just for a law class that we had. Which was kind of um… you know not a required thing but you know if you don’t know what Plan B is all about then you as a student you need to take it upon yourself to find the information. So that kinda, outside the classroom.”

“um… another way that I had heard about it was… actually it’s been in the news, I think several times. Where pharmacists were actually um…you know fired from their positions. So that has been kind of a…”

“Yeah, uh my friend…And my friend she knows I’m in pharmacy school so, I looked it up for her. So you know I like to… I like to look things up for her and answer any questions, you know. I’m her on call pharmacist.

When asked specifically about the knowledge gained about emergency contraception in their pharmacy school classes, pharmacy students described four major
areas of knowledge: 1) knowledge about timing and composition, 2) knowledge about mechanism of action, 3) no knowledge, and 4) perceived knowledge of others (see Table 7).

The topical area of timing and composition represents whether students understood the correct timing around administration of emergency contraception and if they understood its composition. Plan B is hormonal contraception, containing high doses of progestin (levonorgestrel). It is 75%-89% effective in preventing pregnancies when taken within 72 hours (3 days) to 120 hours (5 days) after sexual intercourse (American Medical Women’s Association (AMWA), 1996; Kaiser Family Foundation, 2000). Although students seemed to have varying degrees of understanding of the actual timeframe, the majority of students understood that there was a time component to acquiring the medication after unprotected intercourse. As shown in Table 7, some students had more accurate knowledge around timing and composition than others.

Knowledge of mechanism of action refers to comprehension of how emergency contraception works in the body. Although the exact mechanism of action is unknown, it is thought that the medication works through the following three mechanisms, 1) through a delay or inhibition of ovulation, 2) through inhibition of fertilization, and 3) through preventing implantation (American Pharmaceutical Association special report, 2000). Although students in one of the focus groups seemed to understand the three mechanisms of action of emergency contraception, specific knowledge was not held by the majority of students. In addition, there was some confusion as to the definition of when life begins. This argument was most thoroughly represented by a discussion in one of the focus
groups where some students believed that life begins at implantation and others believed that life begins at fertilization. See the excerpt below:

Member 2: But... in order to abort it well first you have to look at the definition of pregnancy. To actually be pregnant, as a medical definition, there has to be implantation. Is that an agreed statement?

Member 1: I disagree.

Member 1: I (unclear)... I’ve read a couple of articles that state that um... the original term pregnancy was actually um... the egg and a sperm... you know conception... at that point...

Member 2: As defined by...?

Member 1: and one article said that that definition is changing. So I don’t know.

Member 4: I don’t think it you know... Webster or whoever medical can tell me where I think contraception begins. So as defined by... per person I would think is un... is sufficient enough for you know... in my opinion.

Member 2: Well, what I was looking at when I did my research... I was looking at the American Medical Association, and where they define medically where pregnancy starts. Cause there’s many times that you have a fertilized egg that doesn’t get implanted naturally...so that’s where they have a hard time drawing pregnancy and starting at implantation... at fertilization versus implantation.

Member 5: For them as an organizational body...

Member 5: But you could take the analogy of a plant seed... does that seed have the capability of growing into a plant?

Member 2: Yes.

Member 5: And...but in order for it to happen it must... fall in soil and be watered and somewhat...

Member 2: Correct.

Member 5: So a lot of things have to happen for the plant to grow, but nevertheless the possibility was there when it was just a seed. For some people the seed of life is once the sperm enters the egg. It’s all an ethical dilemma.

Member 5: Each person has to make their own belief.
Member 5: You can defer judgment to you know bodies such the AMA or other larger institutions but… it’s just a judgment call

Member 2: The question we come back to though is whether or not Plan B, is any different than any other birth control method...

Member 2: and chemically it’s not

Member 2: So the real question is then, if we have a problem with Plan B, we should really have a problem with every birth control method out there that’s an oral contraceptive. Because it’s literally the same thing. So that’s the problem that...

Member 5: That is a logical statement.

Member 2: the argument runs into... is that if you’re going to reject this method, you have to reject something that’s the same thing. And that’s where our problem lies. As a profession because we’re not being consistent.

Member 1: I agree.

Member 3: Well being that it has three different mechanisms... again you’d have to go back to where you believe conception starts... so if it’s going to work by thickening the endometrium, and just preventing the egg from meeting the sperm... I personally don’t see why not. But if it’s going to...which I don’t think it’s what you guys (alluded to)... it... it aborting... so once the... the sperm is fertilizing the egg...is it gonna... that’s where I believe conception starts. Is that where, it’s going to work? And if that’s the case, then you’re getting into abortion and being pro-life verus pro-choice. But I think you guys said that that’s not how it works.”

The topical area of no knowledge encompasses the idea that some students did not learn about emergency contraception in their pharmacy school classes and therefore gained no knowledge from this venue. Some students briefly noted that they were being quiet because they did not have knowledge about emergency contraception (Table 13). It is important to acknowledge that what is absent from discussion is sometimes just as important as what is present. In addition, a few students expressed interest in wanting more information on emergency contraception, specifically around the ethics of dispensing.
The theme *perceived knowledge of others* refers to how the participants described emergency contraception knowledge of other pharmacists and the general community. Although students were not questioned about what level of knowledge other pharmacists and the community had around emergency contraception, these perceptions were expressed in the discussions and are worth mentioning. Most students remarked that pharmacists do not have knowledge on how it works and perceived that the wider community thinks that it causes an abortion.
Table 13. Major Themes of What Students Learned in their Pharmacy School Classes and Representative Quotes

<table>
<thead>
<tr>
<th>Theme</th>
<th>Representative Quote</th>
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| Timing & composition      | **Accurate** “...this is not an abortion pill. This can only be used within the first 5 days. It can be dispensed two tablets together but all of the research has done one pill and then twelve hours later. It can be, you know, used in this situation. It’s, you know, effectiveness is only 85%”  
“Like you know I remember learning it’s a high dose of the regular birth control so it’s that’s one thing that always stink in my head”  
**Confusion** “You take one, like you take one immediately and you take the other one within 72 hours.”  
“Twenty-two… within twenty-two hours and then twelve hours later and then that was pretty much it, right?” |
| Mechanism of action       | “...So we’re not really sure but there’s three or four different ways...we believe it works.”  
“One of them is in...you know like (another member) was saying, it’s um... a far as just like thickening the endometrial, you know, mucosa so that the um... egg is less uh... less apt to travel um... that’s one of ways that it works; just in the same way as birth control... works.”  
“Member 1: I remember one line it said this is not an abortifacient.  
Member 2: I have a question on that. We’re referring to third mechanism of action which states that it could or could not effect implantation  
Member 2: but isn’t that also the same mechanism of action of Ortho Tri-Cyclen? If you look at the mechanism of action...Member 1: It is.  
Member 2: in Plan B and in Ortho Tri-Cyclen for example, they’re identical.” |
| No knowledge              | “Member 2: We haven’t had this (have we?). Member 3: Yeah, that’s why I’m kinda quiet...”  
“I kinda just looked it up briefly on the internet; about how it works...other than that like other than it being brought up in ethics class...about how some pharmacists would dispense it, some others...some err...others don’t. So that’s why I’m like...I’m kinda learning here too” |
| Perceived knowledge of others | “The only thing that people have ever heard about emergency contraception is that it aborts a baby.”  
“One thing that I, I think is important um for mostly for pharmacists cause a lot of the pharmacists that I’ve come across during internships and stuff like that. They don’t, it doesn’t seem like they really get how it works....” |
Teaching Instruction. To measure issues around emergency contraception teaching instruction, students were asked about particular methods of teaching instruction on the paper and pencil survey and were asked if they were aware of any position, negative, or even neutral attitudes that they perceived as held about emergency contraception by the instructor. Apart from the survey questions that captured this question discussed earlier, two themes emerged from this questioning, 1) professor attitude and 2) need to educate. In terms of the professor attitude when teaching emergency contraception, the majority of students answered that the professor was neutral in their attitude about emergency contraception.

“Yeah, I'd pretty much say they were neutral. I mean I didn’t really see any positive or negative thoughts about it when they were teaching us about it. I mean we touched first of all how it works (unclear) how the medication works and then we discuss it in open group. You know the teacher was neutral he didn’t, he told us not (unclear) you have to follow the law um that are under that we practice under.”

“I think they were very cautious because they don’t want to put their biases into it. They’re just supposed to teach us what’s out there at this point. And even though we try to bring up... well what about the ethical issues and stuff they kinda floated over it and didn’t really want to go to far into it.”

Although it was more of a minority view, a few students felt that the professor attitude was more negative than positive or neutral:

“If anything I felt they erred on the side of against it. Only because of it’s potential for abuse and the side effects and things like that...”

Another theme that was mentioned when discussing emergency contraception teaching instruction was the need to educate around emergency contraception. The reason this is included here as this theme was mentioned repeatedly in the discussions around dispensing practices and therefore it is practical to mention here as well. This
theme of duty to educate and counsel was a common theme among all focus group sessions and will be discussed more thoroughly in the next section.

“...Basically them (professors) telling us that we need to educate the patient before we give it to them so they are aware of what it’s actually doing. That it’s not supposed to be a form of regular you know contraception.”

Projected Dispensing Practices. Questions around dispensing practices of pharmacists by far yielded the most discussion and many non-expected themes emerged from these discussions. Not only were pharmacy students asked a close-ended question on the paper and pencil survey about whether they would dispense emergency contraception in the future, but many questions throughout the focus group discussions focused on their future dispensing practices. On the paper and pencil survey, almost 20% of the sample responded that they were either not sure or that they definitely would not dispense emergency contraception upon becoming a pharmacist. The focus group discussions uncovered many hesitations in terms of dispensing, where the majority of students said that they would probably dispense, but that they felt hesitancy in doing so.

“Yeah, don’t get me wrong I will dispense it but I will feel weird in a way, in the back of my mind.”

Hesitancy in dispensing was mainly due to biases held by the study participants. Hesitancy in dispensing was due to many issues including: hesitancy due to mechanism of action, repeat use, age requirement, due to the situation of a particular woman, due to side effects, and due to believing it is wrong (Table 8). An overall theme of judgment emerged from this data.

Hesitancy in dispensing or not wanting to dispense due to mechanism of action refers to the idea that pharmacists may not want to dispense emergency contraception
because of not knowing through which mechanism of action that it actually works. One student remarked that if she/he were required to dispense this medication that it may in fact change her/his career path (see Table 8). These comments points towards the belief that emergency contraception is a form of abortion.

The most cited reason for being hesitant to dispense emergency contraception came from issues with repeat use. Participants thought that repeat use was wrong and was grounds for refusal. They employed what they called “professional judgment” to decide whether or not to refuse dispensing of the medication. Participants maintained strong judgment against dispensing to women or men who came in repeatedly for the medication.

Following this same idea, many participants were hesitant to dispense due to the teenage use. Students seemed to have a problem with teens using this medication and were concerned that someone else would come in and buy the contraception for teens under 18 years of age. Repeat use by teenagers was also frowned upon.

Dispensing also varied based on the situation of the woman. For example, students were more likely to have favorable attitudes about dispensing to women who are raped than to teenagers. In the discussion about the situation of the woman, the same bias towards women who use it repeatedly came up.

Students were hesitant to dispense emergency contraception OTC due to the perceived side effects of the medication (Table 14). Many participants felt that the medication should not have gone OTC due to the perceived side effects and that it should be controlled by physicians. Interestingly, students did not mention what particular side
effects the medication caused but were sure that they were going to come out with studies
demonstrating these side effects very soon.

In addition, a few students did not want to dispense the medication because they
believed it was wrong and compared dispensing it to being a willing accomplice in a
crime: “You do not want to be considered a willing accomplice to something that you
feel is wrong.”

In contrast to these ideas and responses of not wanting to dispense, many students
reported having no problem with dispensing emergency contraception. Many had no
problem dispensing emergency contraception due to the mechanism of action, meaning if
it works the same as oral contraception and they are willing to dispense that, then they are
willing to dispense emergency contraception. In addition, many students that felt that it
was not their job as pharmacists to judge or refuse to dispense any medication based on
moral or any other judgment. Two students noted that dispensing emergency
contraception is part of a pharmacists’ job:

“I think for any um… any drug, it’s really… If you have religious reasons for not
dispensing drugs then why are you a pharmacist?… Like you know that’s part of the job,
right? You do have to give people drugs.”
<table>
<thead>
<tr>
<th>Theme</th>
<th>Representative Quote</th>
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<tbody>
<tr>
<td><strong>Hesitancy in dispensing/not wanting to dispense</strong> <em>Due to mechanism of action</em></td>
<td>“That’s the problem, we just don’t know... it seems like... we just don’t know how it’s going to work, so...”</td>
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<td></td>
<td>Moderator: So would you say that you feel more hesitant towards dispensing because not knowing the true mechanism of action?</td>
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<td>Member 3: “I do.”</td>
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<td></td>
<td>Member 1: “I definitely do. I feel like I could even change my career path...because of some places require that, then I feel like I couldn’t pursue that career path...”</td>
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<td><strong>Due to repeat use</strong></td>
<td>“I’m a little undecided because um... right now there is no limitation as to you know if person A can come pick it up today and next week come pick it up again or... so I think my limitations are you know like I may consider dispensing it you know if you know... you know pending when I was in that situation you know and I think... I think I’m okay with it because ultimately I think it’s my goal to be um... to counsel the person and maybe you know... get... give them another perspective. But if it was a situation where I you know was always being confronted with you know maybe the same person or you know I’m in an area where I have to do as often, I don’t know...”</td>
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<td>“Yeah, I think that’s a little bit despicable, coming every weekend and being like yeah I want my Plan B now.”</td>
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<tr>
<td></td>
<td>“if I see the same person coming in... I mean I would say no...as a medical professional you know that is not healthy and I would say absolutely not you need to go see a doctor”</td>
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</table>
| **Due to teen use**                       | “...I will feel uncomfortable in a way. Because you know I see a teenager who’s just doing whatever and having sexual intercourse and not really caring about themselves and this going to be their method, even though you tell them not to. You know I’m married and maybe I’m not taking birth control and something happens... you know it’s a...it’s a different situation I guess. But I wouldn’t want it to be used as the teenagers, oh it’s okay now don’t protect yourself because you have a birth control pill over the counter. You know so it’s kind of conflicting but by law I would still probably do but just feel a little bit guilty if I see a younger person. Like an 18 year
old come in.”

“another thing is that would make me hesitant to dispense is the fact that you only have to be 18...”

Due to the situation of women

“I think, I mean, as a human you would feel different you know if you see an 18 year old girl coming in getting one in comparison to a female who got raped... I mean there’s gonna be a big difference on how you feel about that because I mean if a person was raped then I would definitely you know understand compared to an 18 year old girl who is immature and doesn’t really know all of the consequences...and who will probably do it again... you know there’s a difference. I mean that’s just my personal opinion...there’s a big difference there.”

Due to side effects

“Well I don’t think it should have been over the counter, due to the fact that it’s a high dose and with high doses you get the most side effect you know. Those are the medications that highly need supervision.”

“This way they’re not even going to the doctor to get birth control pills for Pete’s sake...”

“I just think that you know there has to be studies that shows over long periods of time how this drug has affect anybody. You know I’m pretty sure... let’s say 5 years down the line from now there’s gonna be a big study saying you know... some kind of something developed...”

“It’s gonna go... go back to prescription...”

No problem with dispensing

Due to mechanism of action

“I don’t have a problem with it. I take a look at it. I have no problem dispensing oral contraception...I see it as the same drug... I see it as the same mechanism of action. If I’m willing to fill birth control, I’m willing to fill Plan B.”

Because it’s not our job to judge
“It’s not our job to judge. It’s not what we’re here for. I would never apply that to my job.”

“...I definitely don’t agree with any pharmacist who refuses to dispense any medication...not just the emergency contraception...but anything based on your own personal beliefs. If you don’t have a medical reason why this person shouldn’t take it, then it’s really not your place...”

“...My personal belief is that we are...when you inject your own personal belief into a situation such as this which is not of the interest of the patient...we are overstepping our rights pretty much as a pharmacist...we’re supposed to be there to provide medication and information and protect the patient. And by us refusing a product that they’ve already made their mind up that they want and previously their doctor has also agreed with that...and provided a prescription for that fact. For us to step in and say no we won’t fill this is...we’re abandoning our patient in a way. That’s how I feel about.

“...if they meet all the requirements and I feel that they are safe as a health...from a health perspective, I have no problem dispensing it and I don’t really think of it about if they are too young or if it’s a male picking up or anything like that. Like I... I just don’t personally feel any sort of moral you know thing at all.”

There were other major, yet unexpected themes that emerged from the data.

These included: 1) duty to counsel, 2) stigma, and 3) the argument between professional judgment and mandatory dispensing. In addition to these themes, participants shared stories of refusal that are included below.

The first major yet unexpected theme that emerged from the discussions around dispensing practices was duty to counsel. Most, if not all participants felt that it was their duty to counsel and educate consumers about emergency contraception. This was an interesting finding in that Plan B is not a pharmacy counseled product (Food and Drug Administration, 2006). Although the FDA mandates that a healthcare professional must be available to answer questions that a consumer may have about Plan B OTC,
counseling for Plan B OTC is not required. The only thing that is required for OTC purchase of Plan B is proof of age 18 or older (Food and Drug Administration, 2006).

“They absolutely have to get the counseling from the pharmacist, because the technician, a cash register person, whatever... someone who’s standing helping out in the pharmacy, does not understand why it’s important to educate the person about this drug...”

“I think a little more counseling is needed. At that point you just can’t ask for an ID... ok you’re over 18... there you go. You need to ask a little bit more you know questions; when did you have intercourse and make sure that it was in the correct time. And that way you’re educating them.”

Many study participants explained that they felt that it was their duty to educate and counsel consumers on this product due to the OTC status of the drug:

“...Now if it would have stayed a prescription then you know I know they may deny counseling with me however they went to a physician, they were examined, they obviously were spoken to about the medication and if they don’t want to hear my counseling that’s fine... I’m a little more at ease with that. Than in the sense that now it’s over the counter and they just come and buy it and go...”

“And me personally, I think it all comes down to like I personally don’t think that that drug should have been placed over the counter just because of the counseling issue.”

Other reasons provided for the need to counsel clients on emergency contraception was due to a belief that consumers are ignorant about their health and that repeat users and teens are irresponsible. Examples of the need to counsel due to the ignorance of consumers:

“...Take the pill they think it’s taken care of, they could be... three weeks later out at a Dolphins game, tailgating, be drinking most of the morning and half of the afternoon and they’ve damage... they’ve potentially caused damage to their fetus because they didn’t understand that they needed to follow back up with their doctors...”

“I agree with you. Cause some people may not even know what their cycle is and then just probably just wasting their money too and buying something that’s not going to work. You know? Some people don’t even think about when they’re really ovulating or what they should look for. So I agree with you on counseling...”
Examples of the belief that education is needed because repeat use and teens are irresponsible are included below:

“I think that... the other major thing that concerns me with the Plan B, especially going back to the ignorance in a... in women’s health that a lot of people like to self medicate in this country and they might not seek out getting the Plan A, the regular oral contraceptives, and just utilize the Plan B frequently and there’s not a lot of data on how effective it is if it’s used more frequently; if it becomes less effective and I think that’s what the evidence that they’ve been telling us is. That when it’s used more frequently it’s not as effective and I... I think when they have that over the counter the pharmacist needs to at least tell the... the patient that they need to seek out a good oral contraceptive from that point on.”

“... in some instances I believe that you know it’s a reason for young people to have unprotected sex. They feel you know, well I can’t get pregnant; you know I can (either) take birth control; I can take emergency contraception... but their not aware of the other things... the outcomes of it...you know STDs, (unclear) for example...I mean I can tell you from experience. I see it everyday at the pharmacy... right here... (unclear) right now we have to have birth control in stock... I mean this we have to have all of (the) at the beginning of the year... birth control... I mean it’s like hot item. Believe it or not those same patients within three months after that has to get prescription for STD. So my thing is yes, you’re not gonna get pregnant but then again you... you are not protecting yourself (about) the other risks. So yeah I mean I think about it but I... well it’s just an excuse for them to go ahead and have unprotected sex... but at the same time you know it’s not my place to say well you can’t... I cannot dispense it to you.”

“... I think that... I had a lady come in with her boyfriend, young girl she might have been maybe just 18. I asked her if she needed any counseling. You know (unclear) wanted to know the side effects on it. And she said no, she just kinda wanted to buy it and run out. I guess cause of being embarrassed or whatever; so that’s kinda worrisome because you know if they over use that, that could cause problems for them health-wise. So I think that’s a big issue. I think somehow, it needs to be... counseling has to be a mandatory thing. I think that that... cause they could refuse counseling but I feel that with that medication, I don’t think that you should be allowed to refuse.”

Many sentiments such as these below carried a hint of paternalism in the form of counseling despite Plan B not being a counseled product.

“... well they chose to get it, I’m not the one who gave them access to it but I can at least tell how to use it right so that they don’t harm themselves. Cause by me not giving it to them I’m abiding to my ethical beliefs but them taking it can harm them more than benefit them if I don’t give them counseling.”
“... I think I’m okay with it because ultimately I think it’s my goal to be um... to counsel the person and maybe you know... get... give them another perspective.”

“I think you need to sit and hear ok this is not a drug that you can use every time...”

“... I guess concerned when a male comes in to buy it because we can’t refuse, if he’s 18, if he shows his ID you know that’s what our discussion was (in lab)... we can’t really refuse him but how do we know he’s not gonna you know... you know worse case scenario... go out and rape somebody and force a 15 year old to take it...”

One way to perhaps explain this overwhelming need to counsel and educate consumers can be found in participant ideas about pharmacy as a profession. One of the first questions asked in the warm up of the focus group discussions is why students want to be a pharmacist and almost all students responded that they chose to become pharmacists so that they can help and counsel people.

“... I enjoy helping people and... my (ideal) pharmacist is someone who would get out and help the customers.”

“I want to become a pharmacist... once again it’s a helping profession it gives you the ability to help people in the way that the pharmacist role is going... rather than just standing back behind the counter and filling things out... helping the patients and counseling them and helping them...”

“...the counseling piece has always been very important to me and I’ve always kind of felt obligated to do some counseling and interaction and this gives me an opportunity to do that with more security... this would be something that would give me the opportunity to counsel um... and also give me the opportunity to educate...”

The area of stigma took on two forms, one where participants noted the stigma that consumers feel when coming in and asking for Plan B and two, the overall stigma that participants seemed to have about users of Plan B and around OTC drugs in particular. These quotes embody the noted stigma that consumers may feel when requesting the medication:

“Nobody’s happy... nobody’s smiling going... I want my Plan B.”
“They’re usually very quiet about it. They come in and they’re kinda like do you sell the Plan B? You kinda see them lurking in the aisle before they come up to make sure nobody’s there or if it’s a male pharmacist, they wait till a female at the register.”

Upon coming into the focus group, some participants had a preconceived notion of what kind of person uses Plan B and therefore already had a stigma towards the person using the medication. When answering the question, what is the first thing that comes to mind when you hear the term emergency contraception, all focus groups said that the first thing that comes to mind is a young girl or teenager trying to fix their mistake or risky sexual behavior. It is possible that this stigma or notion of a Plan B user may negatively impact access to this medication. Focus group participants mentioned that other stigmas were present for other OTC products such as Sudafed, syringes, and nicotine patches. It is strange that there did not seem to be the same stigma around prescription oral contraceptives even though prescription oral contraceptives and Plan B are compositionally the same.

When discussing dispensing practices, data from the focus group discussions demonstrated a tension between what is called professional judgment and mandatory dispensing. Professional judgment is the idea that pharmacists should be able to decide whether or not to dispense medication based on their personal beliefs/religion/values and mandatory dispensing is the thought that if you are a pharmacist, you should be required to dispense all approved and legal drugs that your pharmacy carries. There was much discussion around both sides of this argument in all of the focus groups, however only one excerpt is shown here:

“... if it’s religious... if they have a religious belief... I know that they is not supposed to you know take their religion to the workplace but... however as long as they able to refer
the patient you know to where they can get it ... I feel like it’s you know it’s their professional judgment and they... they don’t want to dispense it...”

Member 4: “I don’t...”

Member 1: “so I don’t think we can force them and say hey you have to do this. They are profess... they are professionals and I think their right has to be protected also.”

Member 4: “… but a lot of times people use that as an excuse because if you... if it was truly that they didn’t want to dispense it because of their religious beliefs...what about all the other medications that... you know what I mean, that fall... under that category also... like nobody refuses to dispense Viagra... nobody refuses to dispense Cialis... nobody refuses to dispense regular birth control... so... then why would your religious beliefs only tell you that you can’t dispense Plan B? Like that doesn’t make any sense.”

Member 1: “But the thing is you know...it’s harder like for the older pharmacists... it’s harder for them to accept changes. So you know they still have that old mindset.”

Member 4: “They should retire.”

Member 3: “I mean I wouldn’t personally refuse anyone, um however I do feel that everyone has their right to believe whatever you believe; but it’s all in how you handle the situation. Ok, if um... if I didn’t want to dispense it and I said to the patient we just don’t have it in stock, let me refer you to blah blah blah. Fine. Ok, I can deal with that but... some people are just downright rude and saying I don’t dispense this drug... you know and just kinda like...right away catch the attitude...and I don’t think that’s appropriate at all. Now if they do you know something like we don’t have it in stock why don’t I refer you to this store. That’s okay. I wouldn’t have an issue with that.”

Member 3: “If that’s your personal religious belief, fine I think you handled it as best as you could in that case. But if you’re gonna you know get rude about it... then no...”

Member 4: “I think that the issue... that I have with it is like she said... when you’re... when they’re rude... or when they say you know... you shouldn’t take this because I... I’m not giving this to you because I don’t believe in it or you shouldn’t be having unprotected sex or you’re too young to be taking... you know what I’m saying when they say... cause I’ve heard pharmacists say...”

Member 4: “Like they won’t just say I can’t dispense this you know whatever. They’ll... they tell the patient... why they think they shouldn’t be taking it and that they shouldn’t be taking it and they shouldn’t be doing this and that’s... I mean that’s not our place to do that.”

Member 1: “But I... on the other side... this is probably gonna be on the side of the pharmacy side. I feel like if we just... if we as... as a professional if we allow you know...
if we allow them to take all of our rights away... you know what kind of professional we are? We just gonna be doing whatever we are told to do. You know our profession is not gonna be protected; we not gone have right to do what we feel is right.”

Member 4: “But it’s not about... it’s not about your religious beliefs though. Your right is to say... as a pharmacist I have a right to say... you... I’m not gonna dispense this to you because it’s going to cause you to bleed to death... I’m not gonna dispense this to you because I can see that you are addicted to narcotics... I’m not going to dispense it to you because you’re already taking something that has the same ingredients in it. Not I have a right to tell you that I’m not gonna give it to you because I don’t believe you should be taking it. That’s not...you know what I mean. So I feel like our professional rights are protected because we do have the authority to say we’re not going to dispense anything to you that is going to endanger your health or your safety.”

Member 5: And as far as the patient made up their mind or a doctor wrote in on a prescription pad, you’re (unclear) saying that a pharmacist is a mere um...vendor um... just there to exchange products and not exchange service. And if the patient made up their mind it doesn’t mean that we should necessarily have to follow whatever they decide. I’ve seen multiple prescriptions that I would not have dispensed on any day of my life... just because it was written on a prescription pad doesn’t mean it was correct. Oh and just because a patient makes up their mind doesn’t mean it’s correct...

Lastly, many stories of refusals and pharmacists and pharmacies limiting access to emergency contraception were expressed during the focus groups and will be shared here.

Participants noted that they work with pharmacists who refuse to dispense Plan B.

“And regardless of what everyone would like to say about pharmacists don’t pass judgment, there’s a lot of students who pass judgment now; which means they are going to be pharmacists who pass judgment. And I’ve worked with pharmacists who refuse to dispense...”

“Yeah, I... I personally work in a pharmacy where we had two pharmacists, when it was prescription only, refuse to fill it and... two pharmacists who would. So it was a very interesting cause I was involved in the juggling back and forth between...that particular situation.”

“... (another) pharmacist that we have, he hides them... when we get in an order.”

All: He hides it? Member 3: Where the heck does he hide it?

Member 2: I have no idea. I went to the room the other day and then the pharmacist look for it and I thought he had it...I’m like (are those things right there). Cause we made a... we made a bet... a hundred dollars that we can...that we can find (whether) he hides them at. I know he’s not taking it out of the pharmacy...that’s against the law.
He puts them somewhere... he... he makes sure he works on Tuesday night when the order gets in... to make sure he takes them out of those box and puts them somewhere we don’t know”

“(a professor) warned us about there’s this one student on rotation who got a prescription um for Plan B, um it was CVS in Gainesville and the pharmacist doesn’t want to fill it but she um, the student gave it to their patient anyway and got into so much trouble. But the pharmacist kind of just blamed it on the student. Well it’s the student’s fault because you’re really not supposed to but um I guess the point is like um don’t do anything your like your preceptor wouldn’t do. Just make sure like if your preceptor says no I don’t want to fill it then you don’t give it to the patient…”

“It depends on the pharmacist, some pharmacists are totally cool with it but there were pharmacists who would just refuse to give it to their patients.”

“(a professor) just warned us like if your preceptor doesn’t feel comfortable, then don’t do it.”

“...I was working with a pharmacist and he mentioned that he had um you know I’m not against any religion, that he had a Jewish pharmacist who would just not dispense it at all no matter what because he felt that sperm shouldn’t be wasted. So um... it was... he just wouldn’t do it at all…”

“I’ve had some pharmacists that won’t sell it to men... also in that same Jewish place... It has to be a female over 18.”

Summary

In sum, there was a disconnect between what pharmacy students reported on the paper and pencil survey and what was uncovered in the focus group discussions. On the paper and pencil survey students reported learning about emergency contraception in their pharmacy school classes, however when queried in the focus groups discussions pharmacy students revealed that this learning did not come from their pharmacy school classes but rather from outside sources.

Question 2 asked about how emergency contraception course content was taught at accredited schools of pharmacy. According to the focus group discussions what is taught in pharmacy school classes about emergency contraception is brief and over half
of the sample felt that pharmacists are not well enough informed to confidently dispense emergency contraception. The majority of participants felt that their professors maintained a neutral attitude in teaching about the medication. In addition, participant level of knowledge about emergency contraception was not specific. Many students entered the focus group with a preconceived notion about people who use emergency contraception and were hesitant in dispensing the medication. Many participants held biases or judgments towards emergency contraception users. This stigma may be explained through a belief that pharmacists have a duty to educate and counsel clients. It is likely that these beliefs were learned from school. Refusing to dispense emergency contraception is real as noted in many of their stories and the arguments for refusing to dispense and for mandatory dispensing were present throughout the focus groups without resolution.

Section III: State-Wide Pharmacist Survey

The third research question was addressed through a state-wide survey of pharmacists. Although 552 surveys were mailed out to pharmacists around the state of Florida, only 146 were returned (138 paper-based and 8 online) yielding a 26% response rate. After speaking with committee members, a second mailing was sent. The second mailing only had one contact point and did not follow Dillman’s method due to budget constraints. Because 185 more surveys were needed at this point, another 712 surveys were sent out to a random sample of pharmacists and great care was taken to ensure that pharmacists were not double sampled. Of the 712 surveys mailed out in the second mailing, 130 were returned yielding a 18% response rate. However, 30 surveys were either returned by mail or they left messages about how they were retired, sick, or not
currently living in Florida. In total, 1,264 surveys were mailed out, 272 were returned and ~30 were incorrect. Therefore, the final sample size was 272 (which is 82% of the original sample hoped for) with a 22% response rate overall. Because the study was not funded and because the research and mailing costs were out of pocket expenses for the researcher, surveying more pharmacists could not continue and therefore they desired sample of 331 was not reachable. The following analysis will report on the 272 surveys that were returned.

**Quantitative Data Analysis: Univariate & Bivariate Analysis**

Quantitative data analyses were performed using SPSS statistical software (SPSS 16.0, SPSS Inc., Chicago). Frequency distributions were performed on all categorical level variables to determine response distributions and means and standard deviations were calculated for all continuous variables. These procedures identified any outliers or non-meaningful responses and response patterns which could call for collapsing of data based on the distribution. All collected and entered data as well as frequency distribution output data are available on CD.

**Univariate Analysis.** The sample included 272 pharmacists, female (52.6%) and male (47.4%) (Table 15). Age ranged from 25 to 87 and can be equally distributed into thirds with 30.9% under 36 years of age, 34.6% between the ages of 36-50, and 32.7% between the ages of 51-87. The ethnic composition of the sample was primarily White (70.6%), followed by Hispanic (10.7%), Asian (7.4%), Black (6.2%), and Other (3.3%). A little over 67% of pharmacists were married with the remainder single (27.6%) or living with their partner (3.7%). Almost 38% of the sample were Republican, followed by Democrats (25%), Independents (17.3%), and none or undecided (15.8%). In terms of
religion, 67.3% reported some form of Christianity, 8.8% claimed no religion, 7%
reported being Jewish, 6.2% reported being Hindu or Buddhist, 1.5% Islamic, and 9.2%
did not answer the question. When queried about religiosity, 47.4% of the pharmacists
claimed to be either religious or religious and spiritual, while 25.4% reported to be
spiritual only, and 25.4% selected undecided, none of the above, or prefer not to respond.

Table 15. Sociodemographics Characteristics of Study Sample (N=272)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total population N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>143 (52.6)*</td>
</tr>
<tr>
<td>Male</td>
<td>129 (47.4)</td>
</tr>
<tr>
<td>Age, years</td>
<td></td>
</tr>
<tr>
<td>&lt; 36</td>
<td>84 (30.9)</td>
</tr>
<tr>
<td>36-50</td>
<td>94 (34.6)</td>
</tr>
<tr>
<td>51-87</td>
<td>89 (32.7)</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>192 (70.6)</td>
</tr>
<tr>
<td>Black</td>
<td>17 (6.2)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>29 (10.7)</td>
</tr>
<tr>
<td>Asian</td>
<td>20 (7.4)</td>
</tr>
<tr>
<td>Other</td>
<td>9 (3.3)</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>183 (67.3)</td>
</tr>
<tr>
<td>Living with partner</td>
<td>10 (3.7)</td>
</tr>
<tr>
<td>Divorced or separated</td>
<td>28 (10.3)</td>
</tr>
<tr>
<td>Widowed</td>
<td>4 (1.5)</td>
</tr>
<tr>
<td>Never been married</td>
<td>43 (15.8)</td>
</tr>
<tr>
<td>Political Affiliation</td>
<td></td>
</tr>
<tr>
<td>Republican</td>
<td>103 (37.9)</td>
</tr>
<tr>
<td>Democratic</td>
<td>68 (25.0)</td>
</tr>
<tr>
<td>Independent</td>
<td>47 (17.3)</td>
</tr>
<tr>
<td>None/undecided</td>
<td>43 (15.8)</td>
</tr>
<tr>
<td>Other</td>
<td>6 (2.2)</td>
</tr>
<tr>
<td>Religion</td>
<td></td>
</tr>
<tr>
<td>Christian</td>
<td>183 (67.3)</td>
</tr>
<tr>
<td>Hindu or Buddhist</td>
<td>17 (6.2)</td>
</tr>
<tr>
<td>Jewish</td>
<td>19 (7.0)</td>
</tr>
<tr>
<td>Islamic</td>
<td>4 (1.5)</td>
</tr>
<tr>
<td>None</td>
<td>24 (8.8)</td>
</tr>
<tr>
<td>Missing</td>
<td>25 (9.2)</td>
</tr>
<tr>
<td>Religiosity</td>
<td></td>
</tr>
<tr>
<td>Religious</td>
<td>43 (15.8)</td>
</tr>
<tr>
<td>Spiritual</td>
<td>69 (25.4)</td>
</tr>
<tr>
<td>Religious and Spiritual</td>
<td>86 (31.6)</td>
</tr>
</tbody>
</table>
The remainder of the demographic questions queried about pharmacists’ current positions and their pharmacy education and training (Table 16). Just over 32% had been practicing pharmacy for 8 years or less, 33.5% had been practicing between 9 and 22 years, and 33.8% had been practicing pharmacy between 23 and 55 years. Over half of the sample (51.8%) was employed at a community-chain pharmacy, almost 20% worked at a hospital pharmacy, 15.4% reported working at another type of pharmacy such as home infusion, or mail order, and another 12.9% of pharmacists reported working at a community-independent pharmacy. Just over 58% of the sample said that they were staff pharmacists, 27.6% reported to be pharmacy managers, and 14.3% reported to have a different job title such as clinical pharmacist, pharmacy owner, or medical liaison. Almost 81% of the sample claimed to be employed full-time, 17.3% worked part-time, and a smaller 1.8% were retired. In terms of pharmacy school attendance, the top five schools attended, which represented 47.8% of the sample, were University of Florida (24.6%), Nova Southeastern University (11.8%), Florida Agricultural & Mechanical University (4.4%), Mercer University (3.7%), Massachusetts College of Pharmacy (3.3%). Almost a third of the sample (32.4%) graduated between 1949-1982, 28.7% graduated between 1983-1998, and 34.6% graduated between 1999-2007.

<table>
<thead>
<tr>
<th>Undecided</th>
<th>13  (4.8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None of the above</td>
<td>35  (12.9)</td>
</tr>
<tr>
<td>Prefer not to respond</td>
<td>21  (7.7)</td>
</tr>
</tbody>
</table>

*Some percentages do not add to 100 because of rounding or missing data*
### Table 16. Demographics on Pharmacy Practice and Training (N=272)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total population N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Years in Practice</strong></td>
<td></td>
</tr>
<tr>
<td>&lt;9</td>
<td>88 (32.4)*</td>
</tr>
<tr>
<td>9-22</td>
<td>91 (33.5)</td>
</tr>
<tr>
<td>23+</td>
<td>92 (33.8)</td>
</tr>
<tr>
<td><strong>Type of Pharmacy where Employed</strong></td>
<td></td>
</tr>
<tr>
<td>Community—Chain</td>
<td>141 (51.8)</td>
</tr>
<tr>
<td>Community—Independent</td>
<td>35 (12.9)</td>
</tr>
<tr>
<td>Hospital</td>
<td>54 (19.9)</td>
</tr>
<tr>
<td>Other (e.g. Home Infusion, Mail Order)</td>
<td>42 (15.4)</td>
</tr>
<tr>
<td><strong>Job Title</strong></td>
<td></td>
</tr>
<tr>
<td>Staff Pharmacist</td>
<td>158 (58.1)</td>
</tr>
<tr>
<td>Pharmacy Manager</td>
<td>75 (27.6)</td>
</tr>
<tr>
<td>Other (e.g. Clinical Pharmacist)</td>
<td>39 (14.3)</td>
</tr>
<tr>
<td><strong>Current Employment Status</strong></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>220 (80.9)</td>
</tr>
<tr>
<td>Part-time</td>
<td>47 (17.3)</td>
</tr>
<tr>
<td>Retired</td>
<td>5 (1.8)</td>
</tr>
<tr>
<td><strong>Pharmacy School Attended</strong></td>
<td></td>
</tr>
<tr>
<td>University of Florida</td>
<td>67 (24.6)</td>
</tr>
<tr>
<td>Nova Southeastern University</td>
<td>32 (11.8)</td>
</tr>
<tr>
<td>Florida Agricultural &amp; Mechanical University</td>
<td>12 (4.4)</td>
</tr>
<tr>
<td>Mercer University</td>
<td>10 (3.7)</td>
</tr>
<tr>
<td>Massachusetts College of Pharmacy</td>
<td>9 (3.3)</td>
</tr>
<tr>
<td><strong>Year Graduated</strong></td>
<td></td>
</tr>
<tr>
<td>1949-1982</td>
<td>88 (32.4)</td>
</tr>
<tr>
<td>1983-1998</td>
<td>78 (28.7)</td>
</tr>
<tr>
<td>1999-2007</td>
<td>94 (34.6)</td>
</tr>
</tbody>
</table>

*Some percentages do not add to 100 because of rounding or missing data

**Only certain data presented for this variable

Univariate analysis was performed for each independent variable (knowledge, attitudes, subjective norms, and perceived behavioral control). Knowledge was measured by 10 questions. Higher levels of knowledge were found for comprehension of number of pills in Plan B package, timing of administration, percentage of effectiveness, how to sell OTC to men who request it, Plan B and it’s relationship to abortion, and the relationship between timing and Plan B effectiveness. Lower levels of knowledge were found for understanding Plan B’s true mechanism of action, comprehension of who can
sell Plan B to consumers, how to sell OTC to women in advance of need, and the relationship between Plan B and birth defects (Table 17).

Table 17. Categorical Classifications for Knowledge

<table>
<thead>
<tr>
<th>Knowledge Items*</th>
<th>Total population N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of pills in Plan B package</td>
<td></td>
</tr>
<tr>
<td>Correct</td>
<td>185 (68.0)</td>
</tr>
<tr>
<td>Incorrect</td>
<td>87 (32.0)</td>
</tr>
<tr>
<td>Timing of administration</td>
<td></td>
</tr>
<tr>
<td>Correct</td>
<td>188 (69.1)</td>
</tr>
<tr>
<td>Incorrect</td>
<td>84 (30.9)</td>
</tr>
<tr>
<td>Mechanism of action</td>
<td></td>
</tr>
<tr>
<td>Correct</td>
<td>120 (44.1)</td>
</tr>
<tr>
<td>Incorrect</td>
<td>152 (55.9)</td>
</tr>
<tr>
<td>Percentage of effectiveness</td>
<td></td>
</tr>
<tr>
<td>Correct</td>
<td>186 (68.4)</td>
</tr>
<tr>
<td>Incorrect</td>
<td>86 (31.6)</td>
</tr>
<tr>
<td>Who can sell Plan B to consumers</td>
<td></td>
</tr>
<tr>
<td>Correct</td>
<td>121 (44.5)</td>
</tr>
<tr>
<td>Incorrect</td>
<td>151 (55.5)</td>
</tr>
<tr>
<td>How to sell OTC to women (in advance of need)</td>
<td></td>
</tr>
<tr>
<td>Correct</td>
<td>61 (22.4)</td>
</tr>
<tr>
<td>Incorrect</td>
<td>211 (77.6)</td>
</tr>
<tr>
<td>How to sell OTC to men</td>
<td></td>
</tr>
<tr>
<td>Correct</td>
<td>183 (67.3)</td>
</tr>
<tr>
<td>Incorrect</td>
<td>89 (32.7)</td>
</tr>
<tr>
<td>Plan B can cause birth defects (True/False)</td>
<td></td>
</tr>
<tr>
<td>Correct</td>
<td>120 (44.1)</td>
</tr>
<tr>
<td>Incorrect</td>
<td>152 (55.9)</td>
</tr>
<tr>
<td>Plan B can act as an abortifacient (True/False)</td>
<td></td>
</tr>
<tr>
<td>Correct</td>
<td>146 (53.7)</td>
</tr>
<tr>
<td>Incorrect</td>
<td>126 (46.3)</td>
</tr>
<tr>
<td>The sooner a woman takes Plan B, the more effective it will be (True/False)</td>
<td></td>
</tr>
<tr>
<td>Correct</td>
<td>248 (91.2)</td>
</tr>
<tr>
<td>Incorrect</td>
<td>24 (8.8)</td>
</tr>
</tbody>
</table>

*Missing cases are treated as incorrect

A composite score was developed from the 10 questions that measured knowledge such that each participant was given a knowledge score, 0 out of 10. The mean, standard deviation, range as well as the distribution of the knowledge composite variable is provided in Table 18. On a scale of 0-10, the mean knowledge score for participants was 5.36, meaning that the sample had average knowledge across the board.
The knowledge composite score had a normal distribution with a slight left skew meaning that there was a slight skew towards higher level of knowledge about Plan B in the sample. It was assumed that a pharmacist did not know the answer to a question if they left the question blank. Therefore, an unanswered knowledge question was treated as don’t know. Pharmacists received a 1 if they answered the question correctly and a 0 if they answered the question incorrectly or did not answer the question. There were 47 pharmacists who left 1 or more knowledge questions blank. Of these 47 pharmacists, 27 only left 1 item blank, 6 left 2 items blank, 3 left 3 items blank, 5 left 4 items blank, 5 left 7 items blank, and 1 left all items blank.

Table 18. Univariate Statistics for Knowledge Composite Variable, N=272

<table>
<thead>
<tr>
<th>Knowledge Composite Variable</th>
<th>N (%)</th>
<th>Mean (SD)</th>
<th>Range</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>9 (3.3%)</td>
<td>5.36 (2.46)</td>
<td>0-10</td>
<td>-.381</td>
</tr>
<tr>
<td>1</td>
<td>16 (5.9%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>19 (7.0%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>16 (5.9%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>31 (11.4%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>40 (14.7%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>38 (14.0%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>49 (18.0%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>30 (11.0%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>19 (7.0%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>5 (1.8%)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 19 represents the univariate analysis for the items that measured attitudes about Plan B. In general, attitudes about Plan B use and users tended to vary. While over half of the sample (52.9%) disagreed with the statement that easy availability of Plan B would discourage the use of regular contraception, 45.5% either agreed or were not sure. A similar finding was found with the statement easy availability of Plan B promotes promiscuity. While 53.7% of the sample disagreed with the statement, the other 44.5% either agreed or were not sure. Over 64% of the sample reported that they
did not feel uncomfortable dispensing Plan B because of their religious/ethnical beliefs, however 33.8% reported that they either did feel uncomfortable due to their religious/ethical beliefs or they didn’t know. A large percentage of the sample felt that repeated use of Plan B is wrong (61%). In terms of comfort with dispensing Plan B to different groups of people, a large proportion of the sample (66.9%) felt comfortable dispensing to adult women, less felt comfortable dispensing to men (41.5%), and even less felt comfortable dispensing to adolescents (38.6%). This finding is consistent with the dependent variable, dispensing practices which will be discussed below. In addition, the majority of pharmacists (79%) felt that Plan B should be offered to women who are raped in all hospital emergency rooms, regardless of hospital affiliation.
### Table 19. Categorical Classifications for Attitude

<table>
<thead>
<tr>
<th>Attitude Items*</th>
<th>Total population N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy availability of Plan B will discourage regular contraceptive use</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>85 (31.2)**</td>
</tr>
<tr>
<td>Disagree</td>
<td>144 (52.9)</td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>39 (14.3)</td>
</tr>
<tr>
<td>Easy availability of Plan B promotes promiscuity</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>74 (27.2)</td>
</tr>
<tr>
<td>Disagree</td>
<td>146 (53.7)</td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>47 (17.3)</td>
</tr>
<tr>
<td>I feel uncomfortable dispensing Plan B because of my religious/ethical beliefs</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>59 (21.7)</td>
</tr>
<tr>
<td>Disagree</td>
<td>176 (64.7)</td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>33 (12.1)</td>
</tr>
<tr>
<td>Repeated use of Plan B is wrong</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>166 (61.0)</td>
</tr>
<tr>
<td>Disagree</td>
<td>66 (24.3)</td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>34 (12.5)</td>
</tr>
<tr>
<td>I feel comfortable dispensing Plan B to adult women</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>182 (66.9)</td>
</tr>
<tr>
<td>Disagree</td>
<td>63 (23.2)</td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>23 (8.5)</td>
</tr>
<tr>
<td>I feel comfortable dispensing Plan B to adolescents (teens &lt;18 yrs old)</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>105 (38.6)</td>
</tr>
<tr>
<td>Disagree</td>
<td>133 (48.9)</td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>30 (11.0)</td>
</tr>
<tr>
<td>I feel comfortable dispensing Plan B to men</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>113 (41.5)</td>
</tr>
<tr>
<td>Disagree</td>
<td>117 (43.0)</td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>38 (14.0)</td>
</tr>
<tr>
<td>Should Plan B be offered to women who are raped in all hospital emergency rooms, regardless of hospital affiliation?</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>215 (79.0)</td>
</tr>
<tr>
<td>No/Not sure</td>
<td>53 (19.5)</td>
</tr>
</tbody>
</table>

*The first seven questions were measured on a 5-point Likert scale from completely agree to completely disagree and were collapsed for easier comprehension

**Some percentages do not add to 100 because of rounding or missing data

A composite score was developed from the 7 questions that measured attitudes. Since the attitude questions were measured on a 5-point Likert scale, each respondent received a score from 1-5 for each individual question and the composite score included a total score for all attitude questions. The attitude composite score ranged 7 to 21 where a
higher score equates to more positive attitudes about Plan B. The mean, standard deviation, and range is provided in Table 20 for this new continuous variable attitudes about Plan B. On a scale of 7-21, the mean attitude score for participants was 14.87, meaning that the sample had average attitudes across the board. The attitude composite score had a normal distribution with a slight left skew meaning that there was a slight skew towards more positive attitudes about Plan B in the sample.

Table 20. Univariate Statistics for Attitude Composite Variable

<table>
<thead>
<tr>
<th>Study Sample (N=272)</th>
<th>Mean (SD)</th>
<th>Range</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Composite Variable</td>
<td>14.87 (3.98)</td>
<td>7-21</td>
<td>-.327</td>
</tr>
</tbody>
</table>

Figure 5 represents the univariate analysis of some of the items measuring subjective norms. Overall, the majority of the sample perceived that their partners/business colleagues, professional organizations that they are most active in, their supervisor, and their close friends and family think that they should dispense Plan B. In addition, 11.4% of the sample reported that there is someone at their pharmacy who refuses to dispense Plan B, 41.2% reported that there is no one at their pharmacy who refuses to dispense, 26.7% were not sure, and 18.4% of the sample reported that their pharmacy does not carry Plan B (data not listed in chart). When asked if there is a policy in place at their pharmacy if someone refuses to dispense Plan B, 29.4% said yes, 24.3% said no, 23.5% were not sure, and 19.1% of the sample reported that their pharmacy does not carry Plan B (data not listed in chart).
A composite score was developed from the 4 questions that measured subjective norms such that each participant was given an composite score ranging from 4 to 16. The mean, standard deviation, and range is provided in Table 21 for this new continuous variable subjective norms about Plan B. On a scale of 4-16, the mean subjective norms score for participants was 12.99. The subjective norms composite score had a normal distribution with a left skew meaning that there was a skew towards pharmacists thinking that influential people think that they should dispense Plan B.

<table>
<thead>
<tr>
<th>Study Sample (N=272)</th>
<th>Mean (SD)</th>
<th>Range</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subjective Norms Composite Variable</td>
<td>12.99 (2.71)</td>
<td>4-16</td>
<td>-1.115</td>
</tr>
</tbody>
</table>

Figure 6 represents the univariate analysis of the items measuring the construct perceived behavioral control. A large proportion of pharmacists reported that it was easy for them to counsel (69.5%) and educate (72.4%) clients about Plan B, while 14.3% and 10.7% felt that it was difficult to counsel and educate respectively. In addition, 67.6% of pharmacists reported that it is easy to dispense Plan B and 25.4% reported that it is easy to refuse to dispense the medication.
A composite score was developed from the 4 questions that measured perceived behavioral control such that each participant was given an composite score ranging from 4 to 16. The mean, standard deviation, and range is provided in Table 22 for this new continuous variable perceived behavioral control. On a scale of 4-16, the mean perceived behavioral control score for participants was 12.73. The perceived behavioral control composite score had a normal distribution with a left skew meaning that there was a skew towards pharmacists responding that they have a higher comfort level in dispensing Plan B.

<table>
<thead>
<tr>
<th>Study Sample (N=272)</th>
<th>Mean (SD)</th>
<th>Range</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Behavioral Control Composite Variable</td>
<td>12.73 (2.74)</td>
<td>4-16</td>
<td>-.912</td>
</tr>
</tbody>
</table>

Dispensing practices can be divided into two separate measures, 1) self reported dispensing practices of pharmacists (dependent variable) and 2) intention to dispense Plan B. Table 23 and 24 summarize the univariate analysis for the self-reported dispensing practices including both the frequency distribution for the categorical level items and the means, standard deviations, and ranges for the continuous level questions.
A similar proportion of pharmacists have ever been asked to fill a prescription of Plan B (55.1%) or sell Plan B OTC (56.6%). Although these proportions of pharmacists have been asked to dispense Plan B, strangely, less have actually filled a prescription (47.1%) or sold Plan B OTC (51.8%). Almost 60% of the sample have ever dispensed emergency contraception either by prescription or OTC. In addition, 70.6% of the sample would have the opportunity to come in contact with Plan B at their workplace.

**Table 23. Categorical Classifications for Dispensing Practices**

<table>
<thead>
<tr>
<th>Dispensing Practices Items</th>
<th>Total population N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever been asked to fill a <em>prescription</em> of Plan B</td>
<td></td>
</tr>
</tbody>
</table>
Yes | 150 (55.1)*  
No | 122 (44.9)  |
| Ever personally filled a *prescription* of Plan B | |  
Yes | 128 (47.1)  
No | 144 (52.9)  |
| Ever been asked to sell Plan B *over-the-counter* | |  
Yes | 154 (56.6)  
No | 115 (42.3)  |
| Ever personally sold Plan B *over-the-counter* | |  
Yes | 141 (51.8)  
No | 128 (46.3)  |
| Ever dispensed *by prescription* OR *over-the-counter* | |  
Yes | 162 (59.6)  
No | 105 (38.6)  |
| Would you ever have the opportunity at your workplace to come into contact (see, dispense, fill a prescription) with Plan B? | |  
Yes | 192 (70.6)  
No | 74 (27.2)  |

*Some percentages do not add to 100 because of rounding or missing data*

Table 24 summarizes the means, standard deviations, and ranges for self-reported dispensing practices by prescription and OTC over the past 12 months. When asked how many Plan B prescriptions pharmacists have personally filled in the past 12 months, answers ranged from 0 to 100 with a mean of 2.33 and a standard deviation of 9.29. When asked how many times pharmacists have sold Plan B OTC in the past 12 months, answers ranged from 1 to 200 with a mean of 5.64 and a standard deviation of 16.91.
Table 24. Means, Standard Deviations, and Ranges for Dependent Variable Dispensing Practices

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Plan B prescriptions filled in past 12 months</td>
<td>2.33</td>
<td>9.29</td>
<td>0-100</td>
<td>9.169</td>
</tr>
<tr>
<td>Number of times sold Plan B over-the-counter in past 12 months</td>
<td>5.64</td>
<td>16.91</td>
<td>0-200</td>
<td>7.466</td>
</tr>
</tbody>
</table>

Table 25 shows the number of times pharmacists have dispensed emergency contraception in the last 12 months. Over the last year, pharmacists have dispensed emergency contraception OTC more than they have by prescription which may mean that the OTC measure has increased use and access to this medication. Of the pharmacists that reported that they have ever filled a prescription of Plan B, 60.7% have not filled any prescriptions in the past 12 months, 29.8% have filled 1-5 prescriptions, 7.7% have filled 6-10 prescriptions, 1.1% reported filling between 11-50 prescriptions, and 0.7% filled between 51-100 prescriptions. No pharmacist reported filling more than 100 prescriptions of Plan B over the past 12 months. Of the pharmacists that reported that they have ever sold Plan B OTC, 48.5% have not sold emergency contraception OTC over the past 12 months, 29.4% sold 1-5 packages of Plan B, 9.9% sold 6-10 packages, 10.7% reported selling 11-50 packages, 1.1% sold between 51-100 packages, and over 0.4% of pharmacists sold between 101-200 prescriptions over the past year. No pharmacist reported dispensing more than 200 prescriptions of Plan B over the past 12 months.
Table 25. Number of Times Pharmacists have Dispensed EC in the Last 12 Months

<table>
<thead>
<tr>
<th></th>
<th>By Prescription N (%)</th>
<th>Over-the-counter N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>165 (60.7)</td>
<td>132 (48.5)</td>
</tr>
<tr>
<td>1-5</td>
<td>81 (29.8)</td>
<td>80 (29.4)</td>
</tr>
<tr>
<td>6-10</td>
<td>21 (7.7)</td>
<td>27 (9.9)</td>
</tr>
<tr>
<td>11-50</td>
<td>3 (1.1)</td>
<td>29 (10.7)</td>
</tr>
<tr>
<td>51-100</td>
<td>2 (0.7)</td>
<td>3 (1.1)</td>
</tr>
<tr>
<td>101-200</td>
<td>0 (0.0)</td>
<td>1 (0.4)</td>
</tr>
</tbody>
</table>

Table 26 summarizes the univariate analysis for intention to dispense. Intention to dispense measures the likelihood or intention of dispensing Plan B to varying groups of people and was partitioned into categories based on dispensing by prescription or OTC. Intention or likelihood of dispensing Plan B does vary by the consumer requesting the medication or by the situation of use. For example, when viewing intentions of OTC dispensing of Plan B, a greater percentage of pharmacists reported being likely to dispense to women who have experienced incest or rape (71%), followed by women who have experienced a problem with their birth control method (67.3%), followed by women who request the method after having unprotected sexual intercourse (66.2%) and last to a person other than the ultimate consumer of the product such as parents or a boyfriend (46.7%). Interestingly, it was almost split half and half in terms of pharmacists likelihood of dispensing OTC to a person other than the ultimate consumer of the product such as parents or a boyfriend.

When viewing intention to dispense by prescription to varying groups of people, pharmacists were most likely to dispense to women who have experienced incest or rape (72.4%), followed by women who request the method after having unprotected sexual intercourse (71%), followed by women who have experienced a problem with their birth control method (68.4%), and lastly to sexually active teens under age 18 (61.8%).
Interestingly, a greater proportion of pharmacists were likely to dispense to all groups by prescription than OTC.

It is important to note that some of the items that measure intention to dispense are not real-life examples as pharmacists may never know if a woman is raped or not or if a woman has had unprotected intercourse or if her birth control method failed. However, a pharmacist would know if the person requesting Plan B is a teenager or if it is a person is a male. In addition, it is assumed that the consumer has had some sort of unprotected intercourse if they are requesting the medication in the first place. That being said, the variable intention to dispense measures hypothetical bias of intention should pharmacists be privy to this information about the consumer.
Table 26. Categorical Classifications for Intention to Dispense

<table>
<thead>
<tr>
<th>Intention to Dispense Items</th>
<th>Total population N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Likelihood of dispensing OTC to women who have experienced incest or rape</strong></td>
<td></td>
</tr>
<tr>
<td>Likely</td>
<td>193 (71.0)*</td>
</tr>
<tr>
<td>Unlikely</td>
<td>47 (17.3)</td>
</tr>
<tr>
<td>N/A</td>
<td>30 (11.0)</td>
</tr>
<tr>
<td><strong>Likelihood of dispensing OTC to women who have experienced a problem with their birth control method</strong></td>
<td></td>
</tr>
<tr>
<td>Likely</td>
<td>183 (67.3)</td>
</tr>
<tr>
<td>Unlikely</td>
<td>60 (22.1)</td>
</tr>
<tr>
<td>N/A</td>
<td>27 (9.9)</td>
</tr>
<tr>
<td><strong>Likelihood of dispensing OTC to women who request the method after having unprotected sexual intercourse</strong></td>
<td></td>
</tr>
<tr>
<td>Likely</td>
<td>180 (66.2)</td>
</tr>
<tr>
<td>Unlikely</td>
<td>65 (23.9)</td>
</tr>
<tr>
<td>N/A</td>
<td>24 (8.8)</td>
</tr>
<tr>
<td><strong>Likelihood of dispensing OTC to a person other than the ultimate consumer of the product such as parents or a boyfriend</strong></td>
<td></td>
</tr>
<tr>
<td>Likely</td>
<td>127 (46.7)</td>
</tr>
<tr>
<td>Unlikely</td>
<td>116 (42.6)</td>
</tr>
<tr>
<td>N/A</td>
<td>28 (10.3)</td>
</tr>
<tr>
<td><strong>Likelihood of dispensing by prescription to women who have experienced incest or rape</strong></td>
<td></td>
</tr>
<tr>
<td>Likely</td>
<td>197 (72.4)</td>
</tr>
<tr>
<td>Unlikely</td>
<td>43 (15.8)</td>
</tr>
<tr>
<td>N/A</td>
<td>31 (11.4)</td>
</tr>
<tr>
<td><strong>Likelihood of dispensing by prescription to women who have experienced a problem with their birth control method</strong></td>
<td></td>
</tr>
<tr>
<td>Likely</td>
<td>186 (68.4)</td>
</tr>
<tr>
<td>Unlikely</td>
<td>55 (20.2)</td>
</tr>
<tr>
<td>N/A</td>
<td>30 (11.0)</td>
</tr>
<tr>
<td><strong>Likelihood of dispensing by prescription to women who request the method after having unprotected sexual intercourse</strong></td>
<td></td>
</tr>
<tr>
<td>Likely</td>
<td>193 (71.0)</td>
</tr>
<tr>
<td>Unlikely</td>
<td>51 (18.8)</td>
</tr>
<tr>
<td>N/A</td>
<td>27 (9.9)</td>
</tr>
<tr>
<td><strong>Likelihood of dispensing by prescription to sexually active teens under age 18</strong></td>
<td></td>
</tr>
<tr>
<td>Likely</td>
<td>168 (61.8)</td>
</tr>
<tr>
<td>Unlikely</td>
<td>72 (26.5)</td>
</tr>
<tr>
<td>N/A</td>
<td>30 (11.0)</td>
</tr>
</tbody>
</table>

*Some percentages do not add to 100 because of rounding or missing data

A composite score was developed from the 8 questions that measured intention to dispense Plan B such that each participant was given an intention score ranging from 4 to
16. The mean, standard deviation, and range is provided in Table 27 for this new continuous variable intention to dispense Plan B. On a scale of 4-16, the mean attitude score for participants was 12.70. The intention composite score had a normal distribution with a left skew meaning that there was a skew towards a greater intention or likelihood to dispense Plan B.

<table>
<thead>
<tr>
<th>Study Sample (N=272)</th>
<th>Mean (SD)</th>
<th>Range</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intention Composite Variable</td>
<td>12.70 (4.12)</td>
<td>4-16</td>
<td>-1.199</td>
</tr>
</tbody>
</table>

**Table 27. Univariate Statistics for Intention to Dispense Plan B Composite Variable**

*Bivariate Analysis.* Chi-square tests were used to estimate the associations between sociodemographic variables, demographic practice and training variables and the dichotomous dependent variable dispensing practices. Results for socio-demographic variables and dispensing are summarized in Tables 28-30 and results for practice and training variables and dispensing are summarized in Table 31. Overall, gender, ethnicity, political affiliation, religion, and religiosity were not found to be significantly associated with dispensing of emergency contraception. The only socio-demographic variables associated with emergency contraception dispensing was pharmacist age, where younger pharmacists (under 36 years of age) were more likely to have ever dispensed emergency contraception as compared to older pharmacists and marital status, where individuals who have never been married and individuals who are living with their partner were more likely to have ever dispensed emergency contraception.
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>% Yes</th>
<th>Chi – Square(df)</th>
<th>Pattern of Finding (p value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>56.7%</td>
<td>1.94(1)</td>
<td>Not Significant (p=0.164)</td>
</tr>
<tr>
<td>Male</td>
<td>65.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age, years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 36</td>
<td>74.7%</td>
<td>9.12(2)*</td>
<td>Pharmacists under 36 years of age are more likely to have ever dispensed EC (p=0.010)</td>
</tr>
<tr>
<td>36-50</td>
<td>53.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51-87</td>
<td>56.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>59.1%</td>
<td>0.99(4)</td>
<td>Not Significant (p=0.911)</td>
</tr>
<tr>
<td>Black</td>
<td>70.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>62.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>63.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>66.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>59.4%</td>
<td>7.85(3)*</td>
<td>Individuals who have never been married are more likely to have ever dispensed EC (p=0.049)</td>
</tr>
<tr>
<td>Living with partner</td>
<td>70.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced/Separated/Widowed</td>
<td>45.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never been married</td>
<td>76.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political Affiliation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Republican</td>
<td>58.0%</td>
<td>3.92(3)</td>
<td>Not Significant (p=0.270)</td>
</tr>
<tr>
<td>Democratic</td>
<td>56.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent</td>
<td>61.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None/undecided/other</td>
<td>72.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christian</td>
<td>57.0%</td>
<td>6.44(5)</td>
<td>Not Significant (p=0.265)</td>
</tr>
<tr>
<td>Hindu</td>
<td>60.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buddhist</td>
<td>100.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jewish</td>
<td>68.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Islamic</td>
<td>50.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>66.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religiosity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious</td>
<td>50.0%</td>
<td>6.24(3)</td>
<td>Not Significant (p=0.100)</td>
</tr>
<tr>
<td>Spiritual</td>
<td>71.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious and Spiritual</td>
<td>55.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undecided/ None of the above/ Prefer not to respond</td>
<td>63.2%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Indicates statistical significance at p<.05.
Although future analysis will focus only on combined dispensing, Tables 34 and 35 provide a breakdown of socio-demographic variables by prescription and OTC. No socio-demographic variables were found to be associated with dispensing emergency contraception by prescription. For OTC dispensing, pharmacist age was significantly associated with dispensing emergency contraception where younger pharmacists (under 36 years old) were more likely to have dispensed emergency contraception OTC as compared to older pharmacists. This finding demonstrates that the association with dispensing and age is only significant for dispensing OTC. Marital status was no longer significant for either dispensing by prescription or OTC.
Table 29. Chi Square Results of Dispensing EC by Prescription by Sociodemographic Variables

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>% Yes</th>
<th>Chi –Square(df)</th>
<th>Pattern of Finding (p value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever Dispensed EC by Prescription</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>44.8%</td>
<td>0.64(1)</td>
<td>Not Significant (p=0.423)</td>
</tr>
<tr>
<td>Male</td>
<td>49.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Age, years</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 36</td>
<td>58.3%</td>
<td>5.33(2)</td>
<td>Not Significant (p=0.069)</td>
</tr>
<tr>
<td>36-50</td>
<td>42.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51-87</td>
<td>43.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>46.9%</td>
<td>2.78(4)</td>
<td>Not Significant (p=0.595)</td>
</tr>
<tr>
<td>Black</td>
<td>52.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>37.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>60.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>55.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>45.4%</td>
<td>3.86(3)</td>
<td>Not Significant (p=0.276)</td>
</tr>
<tr>
<td>Living with partner</td>
<td>50.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced/Separated/Widowed</td>
<td>40.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never been married</td>
<td>60.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Political Affiliation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Republican</td>
<td>40.8%</td>
<td>5.41(3)</td>
<td>Not Significant (p=0.144)</td>
</tr>
<tr>
<td>Democratic</td>
<td>45.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent</td>
<td>51.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None/undecided/other</td>
<td>60.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Religion</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christian</td>
<td>46.4%</td>
<td>2.61(5)</td>
<td>Not Significant (p=0.759)</td>
</tr>
<tr>
<td>Hindu</td>
<td>60.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buddhist</td>
<td>71.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jewish</td>
<td>47.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Islamic</td>
<td>50.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>50.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Religiosity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious</td>
<td>39.5%</td>
<td>9.98(5)</td>
<td>Not Significant (p=0.076)</td>
</tr>
<tr>
<td>Spiritual</td>
<td>60.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious and Spiritual</td>
<td>40.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undecided</td>
<td>46.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None of the above</td>
<td>54.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prefer not to respond</td>
<td>33.3%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Indicates statistical significance at p<.05.
Table 30. Chi Square Results of Dispensing EC OTC by Sociodemographic Variables

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>% Yes</th>
<th>Chi –Square(df)</th>
<th>Pattern of Finding (p value)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>49.6%</td>
<td>1.2(1)</td>
<td>Not Significant (p=0.273)</td>
</tr>
<tr>
<td>Male</td>
<td>56.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Age, years</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 36</td>
<td>68.7%</td>
<td>12.26(2)*</td>
<td>Pharmacists under 36 years of age were more likely to have ever dispensed EC OTC (p=0.002)</td>
</tr>
<tr>
<td>36-50</td>
<td>42.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51-87</td>
<td>50.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>51.1%</td>
<td>2.11(4)</td>
<td>Not Significant (p=0.715)</td>
</tr>
<tr>
<td>Black</td>
<td>64.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>55.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>57.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>66.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>52.8%</td>
<td>5.03(3)</td>
<td>Not Significant (p=0.169)</td>
</tr>
<tr>
<td>Living with partner</td>
<td>70.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced/Separated/Widowed</td>
<td>38.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never been married</td>
<td>61.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Political Affiliation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Republican</td>
<td>47.0%</td>
<td>6.56(3)</td>
<td>Not Significant (p=0.087)</td>
</tr>
<tr>
<td>Democratic</td>
<td>50.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent</td>
<td>55.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None/undecided/other</td>
<td>68.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Religion</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christian</td>
<td>49.7%</td>
<td>5.08(5)</td>
<td>Not Significant (p=0.406)</td>
</tr>
<tr>
<td>Hindu</td>
<td>50.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buddhist</td>
<td>83.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jewish</td>
<td>68.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Islamic</td>
<td>50.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>58.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Religiosity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious</td>
<td>42.9%</td>
<td>2.94(5)</td>
<td>Not Significant (p=0.710)</td>
</tr>
<tr>
<td>Spiritual</td>
<td>58.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious and Spiritual</td>
<td>51.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undecided</td>
<td>53.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None of the above</td>
<td>58.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prefer not to respond</td>
<td>52.4%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Indicates statistical significance at p<.05.
Results for practice and training variables by dispensing are summarized in Table 31. The number of years a pharmacist is in practice, the type of pharmacy where employed, job title, and current employment status all were significantly associated with dispensing emergency contraception. No relationship was found between dispensing and pharmacy school attended or year of graduation. Specifically, pharmacists with fewer years of practice, who were employed at a community-chain pharmacy, and part-time staff pharmacists were more likely to have ever dispensed emergency contraception. These findings stayed consistent when these variables were analyzed separately by prescription and OTC.
### Table 31. Chi Square Results of Dispensing EC by Practice and Training Variables

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>% Yes</th>
<th>Chi – Square(df)</th>
<th>Pattern of Finding (p value)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Years in Practice</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;9</td>
<td>72.4%</td>
<td>9.01(2)*</td>
<td>Pharmacists with less years of practice were more likely to have ever dispensed EC (p=0.011)</td>
</tr>
<tr>
<td>9-22</td>
<td>59.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23+</td>
<td>50.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Type of Pharmacy where Employed</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community—Chain</td>
<td>87.1%</td>
<td>94.93(3)*</td>
<td>Pharmacists employed at a community-chain pharmacy are more likely to have ever dispensed EC (p&lt;0.0001)</td>
</tr>
<tr>
<td>Community—Independent</td>
<td>54.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital</td>
<td>26.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (e. g. Home Infusion, Mail Order)</td>
<td>20.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Job Title</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff Pharmacist</td>
<td>61.7%</td>
<td>16.14(2)*</td>
<td>Staff pharmacists are more likely to have ever dispensed EC (p&lt;0.0001)</td>
</tr>
<tr>
<td>Pharmacy Manager</td>
<td>31.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (e. g. Clinical Pharmacist)</td>
<td>6.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Current Employment Status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>87.7%</td>
<td>15.74(2)*</td>
<td>Full-time pharmacists are more likely to have ever dispensed EC (p&lt;0.0001)</td>
</tr>
<tr>
<td>Part-time</td>
<td>12.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retired</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pharmacy School Attended</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University of Florida</td>
<td>51.1%</td>
<td>78.09(82)</td>
<td>Not Significant (p=0.602)</td>
</tr>
<tr>
<td>Nova Southeastern University</td>
<td>62.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Florida Agricultural &amp; Mechanical University</td>
<td>83.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mercer University</td>
<td>60.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Massachusetts College of Pharmacy</td>
<td>66.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Year Graduated</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1949-1982</td>
<td>54.0%</td>
<td>3.58(2)</td>
<td>Not Significant (p=0.167)</td>
</tr>
<tr>
<td>1983-1998</td>
<td>60.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1999-2007</td>
<td>67.7%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Indicates statistical significance at p<.05.

**Only certain data presented for this variable
Bivariate associations were also explored between (a) knowledge and dispensing practices, (b) attitudes and dispensing practices, (c) subjective norms and dispensing practices, and (d) perceived behavioral control and dispensing practices. Results are summarized in Tables 37-40.

Bivariate analysis was computed for knowledge as an ordinal level variable on a scale of 0-10 with 0 representing low knowledge and 10 representing high knowledge and with knowledge as a categorical variable with low knowledge representing scores from 0-3, average knowledge for those that answered between 4-7 knowledge questions correctly, and 8-10 were said to have high knowledge. Kruskal-Wallis analysis of variance was computed for the ordinal level analysis and chi-square analyses were computed for the categorical level knowledge variable. Both categorizations of knowledge yielded significant results where knowledge about emergency contraception was found to be significantly related to having ever dispensed it. Similarly significant results were found when dispensing practices were separated by prescription and OTC (Table 32).

### Table 32. Bivariate Results of Dispensing EC and Knowledge

<table>
<thead>
<tr>
<th>Ever Disposed EC</th>
<th>% Yes</th>
<th>Chi – Square(df)</th>
<th>Pattern of Finding (p value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge (ordinal level scale 0-10)</td>
<td>n/a</td>
<td>69.48(10)*</td>
<td>Significant (p&lt;0.0001)</td>
</tr>
<tr>
<td>Knowledge (categorical level)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Knowledge</td>
<td>25.4%</td>
<td>49.58(2)*</td>
<td>Significant (p&lt;0.0001)</td>
</tr>
<tr>
<td>Average Knowledge</td>
<td>64.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Knowledge</td>
<td>88.9%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Indicates statistical significance at p<.05.

To test the associations between attitudes about emergency contraception and dispensing practices, Kruskal-Wallis analysis of variance tests were computed for the
ordinal level subjective norm questions and Pearson chi-squares were computed for the one categorical level question (see Table 33). The Kruskal-Wallis test can be used in bivariate analysis with an ordinal-level predictor variable and a nominal level criterion variable. Table 33 reveals that attitudes about emergency contraception are significantly related to whether a pharmacist has ever dispensed emergency contraception, irrespective of whether it was dispensed by prescription or OTC. Because there was one question on the pharmacist survey measuring attitudes on a nominal level, a chi-square test of association was performed between this question and having ever dispensed emergency contraception. The question asked if Plan B should be offered to women who are raped in all hospital emergency rooms, regardless of hospital affiliation. Pharmacists’ thoughts about whether Plan B should be offered to women in hospital emergency rooms was found to be significantly related to having ever dispensed emergency contraception where pharmacists that answered that Plan B should be offered to women who are raped in all hospital emergency rooms were more likely to have ever dispensed emergency contraception than pharmacists who did not think that it should be offered.

*Table 33. Bivariate Results of Dispensing EC and Attitudes

<table>
<thead>
<tr>
<th>Ever Displed EC</th>
<th>% Yes</th>
<th>Chi – Square(df)</th>
<th>Pattern of Finding (p value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Composite Variable</td>
<td>n/a</td>
<td>37.56(14)*</td>
<td>Significant (p=0.001)</td>
</tr>
<tr>
<td>Should Plan B be Offered to Women who are Raped in Hospital Emergency Rooms?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>64.3%</td>
<td>6.39(1)*</td>
<td>Significant (p=0.011)</td>
</tr>
<tr>
<td>No</td>
<td>45.3%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Indicates statistical significance at p<.05.

To test the associations between subjective norms and dispensing practices, Kruskal-Wallis analysis of variance tests were computed for the ordinal level subjective
norm questions and Pearson chi-squares were computed for categorical level questions (Table 34). Subjective norms or perceived social pressures around dispensing of emergency contraception are significantly related to having ever dispensed it. In addition, whether there is an employee at their pharmacy who refuses to dispense emergency contraception and whether there is a policy in place at a pharmacists’ workplace if a refusal should occur are both significantly related to having ever dispensed emergency contraception. Specifically, pharmacists were more likely to dispense the medication if there were no employees at their pharmacy who refuses to dispense emergency contraception. In addition, more pharmacists were likely to have ever dispensed emergency contraception if there was a policy in place should a pharmacist refuse to dispense the medication.

<table>
<thead>
<tr>
<th>Table 34. Bivariate Results of Dispensing EC and Subjective Norms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever Dispensed EC</td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td>Subjective Norms Composite Variable</td>
</tr>
<tr>
<td>Employee at Pharmacy who Refuses to Dispense EC</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Policy at Workplace if Refusal Occurs</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
</tbody>
</table>

*Indicates statistical significance at p<.05.

To test associations between dispensing emergency contraception and perceived behavioral control (how difficult or easy it is to dispense emergency contraception), Kruskal-Wallis analysis of variance was computed (Table 35). Perceived behavioral control was significantly related to ever dispensing emergency contraception. However, when dispensing was separated out, perceived behavioral control was not found to be
related to dispensing by prescription but stayed significant for dispensing OTC. It makes some intuitive sense that dispensing OTC would be related to perceived behavioral control as a pharmacist is more likely to have control dispensing OTC when there is no prescription or patient doctor relationship in the way of dispensing the medication.

**Table 35. Bivariate Results of Dispensing EC and Perceived Behavioral Control (PBC)**

<table>
<thead>
<tr>
<th></th>
<th>Chi – Square(df)</th>
<th>Pattern of Finding (p value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Behavioral Control (PBC)</td>
<td>23.54(11)*</td>
<td>Significant (p=0.015)</td>
</tr>
<tr>
<td>PBC By Prescription Only</td>
<td>18.34(11)</td>
<td>Not Significant (p=0.074)</td>
</tr>
<tr>
<td>PBC OTC Only</td>
<td>20.76(11)*</td>
<td>Significant (p=0.036)</td>
</tr>
</tbody>
</table>

*Indicates statistical significance at p<.05.

To test associations between intention or likelihood to dispense and dispensing Plan B, Kruskal-Wallis analysis of variance was computed (Table 36). Intention to dispense Plan B was found to be significantly related to ever dispensing Plan B by prescription or OTC. Findings stayed significant when individual analysis was performed for dispensing just by prescription or only OTC.

**Table 36. Bivariate Results of Intention to Dispense and Dispensing EC**

<table>
<thead>
<tr>
<th></th>
<th>Chi – Square(df)</th>
<th>Pattern of Finding (p value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever Dispensed EC by Prescription or OTC</td>
<td>50.49(12)*</td>
<td>Significant (p&lt;0.001)</td>
</tr>
</tbody>
</table>

*Indicates statistical significance at p<.05.

**Multivariate Analysis.** Question 3: What is the relationship among emergency contraception knowledge, attitudes, subjective norms, perceived behavioral control, intention to dispense, and dispensing practices of Florida pharmacists registered with the Board of Pharmacy?

Question 3a: Is emergency contraception knowledge predictive of dispensing practices of Florida pharmacists?
Question 3b: Are attitudes about emergency contraception predictive of emergency contraception dispensing practices of Florida pharmacists?

Question 3c: Are subjective norms about emergency contraception (whether important people such as colleagues, supervisors, corporate headquarters, and peers think they should dispense emergency contraception) predictive of emergency contraception dispensing practices of Florida pharmacists?

Question 3d: Is perceived behavioral control, the perceived ease or difficulty of dispensing emergency contraception, predictive of dispensing practices of Florida pharmacists?

Question 3e: Is intention to dispense emergency contraception predictive of dispensing practices of Florida pharmacists?

Question 3f: Are emergency contraception knowledge, attitudes, subjective norms, perceived behavioral control, and intention to dispense taken together, predictive of emergency contraception dispensing practices of Florida pharmacists?

Six logistic regression models were computed to directly answer the above research questions to detect (1) if knowledge is predictive of dispensing practices, (2) if attitudes are predictive of dispensing practices, (3) if subjective norms are predictive of dispensing practices, (4) if perceived behavioral control is predictive of dispensing practices, (5) if intention to dispense is predictive of dispensing practices, and (6) if all variables taken together are predictive of dispensing practices. The socio-demographic variables identified in Tables 33 and 36 to be statistically significant (p<0.05) (age,
marital status, years in practice, type of pharmacy where employed, job title, and current employment status) acted as control variables in each of the regression models.

Knowledge and Dispensing Practices: It was hypothesized that pharmacists with high levels of knowledge about emergency contraception would be more likely to dispense it (Table 37). To test this hypothesis, the dependent variable was regressed against the continuous variable knowledge (scale 0-10) while controlling for socio-demographic variables. Knowledge was found to be a significant predictor of having ever dispensed emergency contraception. Specifically, for every one point increase in knowledge score, the odds of a pharmacist dispensing emergency contraception were increased by a factor of 1.7 (p< 0.001).
Table 37. Logistic Regression Analysis for Knowledge and Dispensing Practices while Controlling for Socio-demographic Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>OR</th>
<th>95.0% C.I.for OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>.538</td>
<td>.102</td>
<td>27.760</td>
<td>1</td>
<td>p&lt;0.001</td>
<td>1.713</td>
<td>1.402</td>
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<tr>
<td>Age, years</td>
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<td></td>
</tr>
<tr>
<td>&lt; 36 (ref group)</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>36-50</td>
<td>.095</td>
<td>.675</td>
<td>.020</td>
<td>1</td>
<td>p&lt;0.888</td>
<td>1.100</td>
<td>.293</td>
</tr>
<tr>
<td>51-87</td>
<td>.827</td>
<td>.951</td>
<td>.756</td>
<td>1</td>
<td>p&lt;0.385</td>
<td>2.287</td>
<td>.354</td>
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<tr>
<td>Marital status</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Married (ref group)</td>
<td>7.404</td>
<td>3</td>
<td>p&lt;0.060</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Living with partner</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced/Separated/Widowed</td>
<td>-1.743</td>
<td>.548</td>
<td>10.130</td>
<td>1</td>
<td>p&lt;0.001</td>
<td>.175</td>
<td>.060</td>
</tr>
<tr>
<td>Never been married</td>
<td>-3.597</td>
<td>.662</td>
<td>29.555</td>
<td>1</td>
<td>p&lt;0.001</td>
<td>.027</td>
<td>.007</td>
</tr>
<tr>
<td>Years in Practice</td>
<td>.834</td>
<td>2</td>
<td>p&lt;0.659</td>
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<td></td>
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</tr>
<tr>
<td>&lt;9 (ref group)</td>
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</tr>
<tr>
<td>9-22</td>
<td>.319</td>
<td>.647</td>
<td>.243</td>
<td>1</td>
<td>p&lt;0.622</td>
<td>1.376</td>
<td>.387</td>
</tr>
<tr>
<td>23+</td>
<td>-.248</td>
<td>.897</td>
<td>.076</td>
<td>1</td>
<td>p&lt;0.782</td>
<td>.780</td>
<td>.135</td>
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<tr>
<td>Type of Pharmacy Employed*</td>
<td>45.011</td>
<td>3</td>
<td>p&lt;0.001</td>
<td></td>
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<tr>
<td>Community—Chain (ref group)</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Community—Independent</td>
<td>-1.743</td>
<td>.548</td>
<td>10.130</td>
<td>1</td>
<td>p&lt;0.001</td>
<td>.175</td>
<td>.060</td>
</tr>
<tr>
<td>Hospital</td>
<td>-3.121</td>
<td>.542</td>
<td>33.129</td>
<td>1</td>
<td>p&lt;0.001</td>
<td>.044</td>
<td>.015</td>
</tr>
<tr>
<td>Other (e. g. Home Infusion)</td>
<td>-3.597</td>
<td>.662</td>
<td>29.555</td>
<td>1</td>
<td>p&lt;0.001</td>
<td>.027</td>
<td>.007</td>
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<tr>
<td>Job Title</td>
<td>4.972</td>
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<td>p&lt;0.083</td>
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<tr>
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</tr>
<tr>
<td>Pharmacy Manager</td>
<td>-1.092</td>
<td>.497</td>
<td>4.836</td>
<td>1</td>
<td>p&lt;0.028</td>
<td>.335</td>
<td>.127</td>
</tr>
<tr>
<td>Other (e. g. Clinical Pharmacist)</td>
<td>-.144</td>
<td>.645</td>
<td>.050</td>
<td>1</td>
<td>p&lt;0.823</td>
<td>.866</td>
<td>.244</td>
</tr>
<tr>
<td>Current Employment Status*</td>
<td>10.172</td>
<td>2</td>
<td>p&lt;0.006</td>
<td></td>
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</tr>
<tr>
<td>Full-time (ref group)</td>
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</tr>
<tr>
<td>Part-time</td>
<td>-1.750</td>
<td>.549</td>
<td>10.172</td>
<td>1</td>
<td>p&lt;0.001</td>
<td>.174</td>
<td>.059</td>
</tr>
<tr>
<td>Retired</td>
<td>-20.807</td>
<td>16947</td>
<td>.000</td>
<td>1</td>
<td>p&lt;0.999</td>
<td>.000</td>
<td>.000</td>
</tr>
</tbody>
</table>

*Indicates statistical significance at p<.05 for the whole group variable
The model was rerun limiting potential confounders to those with a p-value of 0.05 and there was a slight decrease in the OR for each level of increased knowledge (Table 38). Pharmacists who have never been married were more likely to dispense emergency contraception as compared to married individuals. Pharmacists working at a community independent, hospital, or other pharmacy were not as likely to dispense emergency contraception as compared to pharmacists who work at a community chain pharmacy. Pharmacy managers were not as likely to dispense emergency contraception as compared to staff pharmacists and part-time pharmacists were not as likely to dispense as compared to pharmacists who were employed full-time.
Table 38. Logistic Regression Analysis for Knowledge and Dispensing Practices while Controlling for Marital Status, Type of Pharmacy where Employed, Job Title, and Current Employment Status

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>OR</th>
<th>95.0% C.I. for OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>.519</td>
<td>.096</td>
<td>29.302</td>
<td>1</td>
<td>p&lt;0.001</td>
<td>1.680</td>
<td>1.392</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Married (ref group)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Living with partner</td>
<td>.532</td>
<td>1.069</td>
<td>.248</td>
<td>1</td>
<td>p&lt;0.619</td>
<td>1.702</td>
<td>.210</td>
</tr>
<tr>
<td>Divorced/Separated/Widowed</td>
<td>-.375</td>
<td>.572</td>
<td>.430</td>
<td>1</td>
<td>p&lt;0.512</td>
<td>.687</td>
<td>.224</td>
</tr>
<tr>
<td>Never been married</td>
<td>1.445</td>
<td>.613</td>
<td>5.556</td>
<td>1</td>
<td>p&lt;0.018</td>
<td>4.242</td>
<td>1.276</td>
</tr>
<tr>
<td>Type of Pharmacy where Employed*</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Community—Chain (ref group)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community—Independent</td>
<td>-1.62</td>
<td>.530</td>
<td>9.370</td>
<td>1</td>
<td>p&lt;0.002</td>
<td>.197</td>
<td>.070</td>
</tr>
<tr>
<td>Hospital</td>
<td>-3.03</td>
<td>.522</td>
<td>33.817</td>
<td>1</td>
<td>p&lt;0.001</td>
<td>.048</td>
<td>.017</td>
</tr>
<tr>
<td>Other (e.g. Home Infusion, Mail Order)</td>
<td>-3.24</td>
<td>.608</td>
<td>28.443</td>
<td>1</td>
<td>p&lt;0.001</td>
<td>.039</td>
<td>.012</td>
</tr>
<tr>
<td>Job Title*</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff Pharmacist (ref group)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pharmacy Manager</td>
<td>-1.63</td>
<td>.502</td>
<td>10.630</td>
<td>1</td>
<td>p&lt;0.001</td>
<td>.195</td>
<td>.073</td>
</tr>
<tr>
<td>Other (e.g. Clinical Pharmacist)</td>
<td>-20.6</td>
<td>17037.97</td>
<td>.000</td>
<td>1</td>
<td>p&lt;0.999</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Current Employment Status</td>
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<td></td>
</tr>
<tr>
<td>Full-time (ref group)</td>
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<td></td>
</tr>
<tr>
<td>Part-time</td>
<td>-.997</td>
<td>.470</td>
<td>4.487</td>
<td>1</td>
<td>p&lt;0.034</td>
<td>.369</td>
<td>.147</td>
</tr>
<tr>
<td>Retired</td>
<td>-.252</td>
<td>.616</td>
<td>.167</td>
<td>1</td>
<td>p&lt;0.683</td>
<td>.777</td>
<td>.232</td>
</tr>
</tbody>
</table>

*Indicates statistical significance at p<.05 for the whole group variable

Attitudes and Dispensing Practices: It was hypothesized that pharmacists with positive attitudes about emergency contraception would be more likely to dispense it. To test this hypothesis, the dependent variable was regressed against the continuous variable attitudes (scale 7-21) and one categorical level question around attitudes while
controlling for the socio-demographic control variables (Table 39). Pharmacist attitudes about emergency contraception were found to be a significant predictor of having ever dispensed emergency contraception. Specifically, for every one point increase in attitude score, the odds of dispensing increased by 1.2 (p<0.001). The categorical question that measured attitudes that queried about if Plan B should be offered to women who are raped in hospital emergency rooms was not statistically significant.
Table 39. Logistic Regression Analysis for Attitudes and Dispensing Practices while Controlling for Socio-demographic Variables

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>Wald df</th>
<th>Sig.</th>
<th>OR</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attitudes</strong></td>
<td>.209</td>
<td>.056</td>
<td>14.025</td>
<td>1 p&lt;0.001</td>
<td>1.233</td>
<td>1.105</td>
<td>1.376</td>
</tr>
<tr>
<td>Age, years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 36 (ref group)</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>36-50</td>
<td>-.294</td>
<td>.621</td>
<td>.224 1</td>
<td>p=0.636</td>
<td>.745</td>
<td>.221</td>
<td>2.516</td>
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<tr>
<td>51-87</td>
<td>.085</td>
<td>.916</td>
<td>.009 1</td>
<td>p=0.926</td>
<td>1.089</td>
<td>.181</td>
<td>6.553</td>
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<td><strong>Marital status</strong></td>
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<td></td>
<td></td>
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<tr>
<td>Married (ref group)</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Living with partner</td>
<td>-.657</td>
<td>.944</td>
<td>.485 1</td>
<td>p=0.486</td>
<td>.518</td>
<td>.081</td>
<td>3.297</td>
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<tr>
<td>Divorced/Separated/Widowed</td>
<td>-.256</td>
<td>.608</td>
<td>.177 1</td>
<td>p=0.674</td>
<td>.774</td>
<td>.235</td>
<td>2.551</td>
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<tr>
<td>Never been married</td>
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<td>.619</td>
<td>4.370 1</td>
<td>p=0.037</td>
<td>3.651</td>
<td>1.084</td>
<td>12.291</td>
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<tr>
<td><strong>Years in Practice</strong></td>
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</tr>
<tr>
<td>&lt;9 (ref group)</td>
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<td></td>
</tr>
<tr>
<td>9-22</td>
<td>.180</td>
<td>.620</td>
<td>.084 1</td>
<td>p=0.772</td>
<td>1.197</td>
<td>.355</td>
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</tr>
<tr>
<td>23+</td>
<td>-.192</td>
<td>.887</td>
<td>.047 1</td>
<td>p=0.829</td>
<td>.825</td>
<td>.145</td>
<td>4.700</td>
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<tr>
<td><strong>Type of Pharmacy where Employed</strong>*</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Community—Chain (ref group)</td>
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<td></td>
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<td></td>
</tr>
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<td>Community—Independent Hospital</td>
<td>-1.539</td>
<td>.531</td>
<td>8.399 1</td>
<td>p=0.004</td>
<td>.215</td>
<td>.076</td>
<td>.608</td>
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<td>Hospital</td>
<td>-3.627</td>
<td>.545</td>
<td>44.253 1</td>
<td>p=0.001</td>
<td>.027</td>
<td>.009</td>
<td>.077</td>
</tr>
<tr>
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<td>.678</td>
<td>39.821 1</td>
<td>p=0.001</td>
<td>.014</td>
<td>.004</td>
<td>.052</td>
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<tr>
<td><strong>Job Title</strong></td>
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<tr>
<td>Staff Pharmacist (ref group)</td>
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<td></td>
</tr>
<tr>
<td>Pharmacy Manager*</td>
<td>-1.096</td>
<td>.486</td>
<td>5.077 1</td>
<td>p=0.024</td>
<td>.334</td>
<td>.129</td>
<td>.867</td>
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<tr>
<td>Other (e. g. Clinical Pharmacist)</td>
<td>-.340</td>
<td>.573</td>
<td>.352 1</td>
<td>p=0.553</td>
<td>.712</td>
<td>.231</td>
<td>2.189</td>
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<td><strong>Current Employment Status</strong>*</td>
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<tr>
<td>Full-time (ref group)</td>
<td></td>
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<tr>
<td>Part-time</td>
<td>-1.767</td>
<td>.552</td>
<td>10.261 1</td>
<td>p=0.001</td>
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<td>.058</td>
<td>.504</td>
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<tr>
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<td>-21.03</td>
<td>15894.85</td>
<td>.000 1</td>
<td>p=0.999</td>
<td>.000</td>
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</table>
Should Plan B be Offered to Women who are Raped in Hospital Emergency Rooms?

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<td>0.278</td>
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<td>0.265</td>
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<td>0.459</td>
<td>3.800</td>
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</table>

*Indicates statistical significance at p<.05 for the whole group variable

The model was rerun limiting potential confounders to those with a p-value of 0.05 and there was no change in the OR for attitudes (Table 40). Much like the knowledge variables, pharmacists who have never been married were more likely to dispense emergency contraception as compared to married individuals. Pharmacists working at a community independent, hospital, or other pharmacy were not as likely to dispense emergency contraception as compared to pharmacists who work at a community chain pharmacy. Pharmacy managers were not as likely to dispense emergency contraception as compared to staff pharmacists and part-time pharmacists were not as likely to dispense as compared to pharmacists who were employed full-time.
Table 40. Logistic Regression Analysis for Attitudes and Dispensing Practices while Controlling for Marital Status, Type of Pharmacy where Employed, Job Title, and Current Employment Status

<table>
<thead>
<tr>
<th></th>
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<th>Wald df</th>
<th>Sig.</th>
<th>OR</th>
<th>Lower</th>
<th>Upper</th>
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<td>Attitudes</td>
<td>.208</td>
<td>.051</td>
<td>17.03</td>
<td>1 p&lt;0.001</td>
<td>1.232</td>
<td>1.116</td>
<td>1.360</td>
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<tr>
<td>Marital status</td>
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<td></td>
<td>5.981</td>
<td>3 p&lt;0.113</td>
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<tr>
<td>Married (ref group)</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Living with partner</td>
<td>-.596</td>
<td>.932</td>
<td>.409 1</td>
<td>p&lt;0.523</td>
<td>.551</td>
<td>.089</td>
<td>3.423</td>
</tr>
<tr>
<td>Divorced/Separated/Widowed</td>
<td>-.299</td>
<td>.567</td>
<td>.277 1</td>
<td>p&lt;0.599</td>
<td>.742</td>
<td>.244</td>
<td>2.254</td>
</tr>
<tr>
<td>Never been married</td>
<td>1.234</td>
<td>.564</td>
<td>4.783 1</td>
<td>p&lt;0.029</td>
<td>3.435</td>
<td>1.137</td>
<td>10.381</td>
</tr>
<tr>
<td>Type of Pharmacy where Employed*</td>
<td></td>
<td>59.698</td>
<td>3 p&lt;0.001</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Community—Chain (ref group)</td>
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</tr>
<tr>
<td>Community—Independent</td>
<td>-1.43</td>
<td>.511</td>
<td>7.844 1</td>
<td>p&lt;0.005</td>
<td>.239</td>
<td>.088</td>
<td>.651</td>
</tr>
<tr>
<td>Hospital</td>
<td>-3.49</td>
<td>.514</td>
<td>46.279 1</td>
<td>p&lt;0.001</td>
<td>.030</td>
<td>.011</td>
<td>.083</td>
</tr>
<tr>
<td>Other (e. g. Home Infusion, Mail Order)</td>
<td>-3.92</td>
<td>.620</td>
<td>40.050 1</td>
<td>p&lt;0.001</td>
<td>.020</td>
<td>.006</td>
<td>.067</td>
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<tr>
<td>Job Title</td>
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<td></td>
<td></td>
<td>3.666</td>
<td>2 p&lt;0.160</td>
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<td>Staff Pharmacist (ref group)</td>
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<td>Pharmacy Manager</td>
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<td>.452</td>
<td>3.621 1</td>
<td>p&lt;0.057</td>
<td>.423</td>
<td>.174</td>
<td>1.026</td>
</tr>
<tr>
<td>Other (e. g. Clinical Pharmacist)</td>
<td>-.369</td>
<td>.555</td>
<td>.442 1</td>
<td>p&lt;0.506</td>
<td>.691</td>
<td>.233</td>
<td>2.053</td>
</tr>
<tr>
<td>Current Employment Status*</td>
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<td>12.514</td>
<td>2 p&lt;0.002</td>
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<tr>
<td>Full-time (ref group)</td>
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<td>Part-time</td>
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<tr>
<td>Retired</td>
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<td>16126.07</td>
<td>.000 1</td>
<td>p&lt;0.999</td>
<td>.000</td>
<td>.000</td>
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</tr>
</tbody>
</table>

*Indicates statistical significance at p<.05 for the whole group variable

Subjective Norms and Dispensing Practices: It was hypothesized that pharmacists who have influential people in their life who think they should dispense emergency contraception would be more likely to dispense it. To test this hypothesis, the dependent variable was regressed against the continuous variable subjective norms (scale 4-16) and...
two categorical level questions around subjective norms while controlling for the socio-demographic control variables (Table 41). The variable subjective norms was found to be a significant predictor of having ever dispensed emergency contraception.

Specifically, for every one point increase in subjective norms or important people thinking they should dispense emergency contraception, the odds of dispensing emergency contraception increased by 1.3 ($p<0.018$). Neither of the two categorical questions measuring subjective norms was significant.

Table 41. Logistic Regression Analysis for Subjective Norms and Dispensing Practices while Controlling for Socio-demographic Variables

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>OR</th>
<th>95.0% C.I.for OR</th>
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</thead>
<tbody>
<tr>
<td>Subjective Norms Total Score</td>
<td>.321</td>
<td>.136</td>
<td>5.580</td>
<td>1</td>
<td><em>p&lt;0.018</em></td>
<td>1.379</td>
<td>1.056 1.801</td>
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<tr>
<td>Age, years</td>
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<td></td>
</tr>
<tr>
<td>&lt; 36 (ref group)</td>
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<tr>
<td>36-50</td>
<td>-.472</td>
<td>.789</td>
<td>.358</td>
<td>1</td>
<td><em>p&lt;0.549</em></td>
<td>.624</td>
<td>.133 2.926</td>
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<tr>
<td>51-87</td>
<td>.251</td>
<td>1.084</td>
<td>.053</td>
<td>1</td>
<td><em>p&lt;0.817</em></td>
<td>1.285</td>
<td>.153 10.762</td>
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</tr>
<tr>
<td>Married (ref group)</td>
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<tr>
<td>Living with partner</td>
<td>.776</td>
<td>1.309</td>
<td>.352</td>
<td>1</td>
<td><em>p&lt;0.553</em></td>
<td>2.174</td>
<td>.167 28.280</td>
</tr>
<tr>
<td>Divorced/Separated/Widowed</td>
<td>1.733</td>
<td>1.121</td>
<td>2.387</td>
<td>1</td>
<td><em>p&lt;0.122</em></td>
<td>5.655</td>
<td>.628 50.923</td>
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<tr>
<td>Never been married</td>
<td>1.715</td>
<td>.938</td>
<td>3.342</td>
<td>1</td>
<td><em>p&lt;0.068</em></td>
<td>5.555</td>
<td>.884 34.924</td>
</tr>
<tr>
<td>Years in Practice</td>
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<tr>
<td>&lt;9 (ref group)</td>
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<tr>
<td>9-22</td>
<td>.442</td>
<td>.762</td>
<td>.337</td>
<td>1</td>
<td><em>p&lt;0.561</em></td>
<td>1.556</td>
<td>.350 6.923</td>
</tr>
<tr>
<td>23+</td>
<td>-.233</td>
<td>1.042</td>
<td>.050</td>
<td>1</td>
<td><em>p&lt;0.823</em></td>
<td>.792</td>
<td>.103 6.104</td>
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<tr>
<td>Type of Pharmacy where Employed*</td>
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<td></td>
</tr>
<tr>
<td>Community—Chain (ref group)</td>
<td>.997</td>
<td>.712</td>
<td>1.957</td>
<td>1</td>
<td><em>p&lt;0.162</em></td>
<td>.369</td>
<td>.091 1.491</td>
</tr>
<tr>
<td>Community—Independent</td>
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<td></td>
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</tr>
</tbody>
</table>
The model was rerun limiting potential confounders to those with a p-value of 0.05 and there was a very slight decrease in the OR for subjective norms (Table 42). In addition, pharmacists working at a community independent, hospital, or other pharmacy were not as likely to dispense emergency contraception as compared to pharmacists who work at a community chain pharmacy. Part-time pharmacists were not as likely to dispense as compared to pharmacists who were employed full-time.
Table 42. Logistic Regression Analysis for Subjective Norms and Dispensing Practices while Controlling for Type of Pharmacy where Employed and Current Employment Status

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>OR</th>
<th>Lower</th>
<th>Upper</th>
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<tbody>
<tr>
<td>Subjective Norms Total Score</td>
<td>.287</td>
<td>.081</td>
<td>12.658</td>
<td>1</td>
<td>p&lt;0.001</td>
<td>1.332</td>
<td>1.137</td>
<td>1.560</td>
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<tr>
<td>Type of Pharmacy where Employed*</td>
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<tr>
<td>Community—Chain (ref group)</td>
<td>39.024</td>
<td>3</td>
<td>p&lt;0.001</td>
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<tr>
<td>Community—Independent</td>
<td>-1.11</td>
<td>.559</td>
<td>3.971</td>
<td>1</td>
<td>p&lt;0.046</td>
<td>.329</td>
<td>.110</td>
<td>.982</td>
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<tr>
<td>Hospital</td>
<td>-2.66</td>
<td>.502</td>
<td>28.076</td>
<td>1</td>
<td>p&lt;0.001</td>
<td>.070</td>
<td>.026</td>
<td>.187</td>
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<tr>
<td>Other (e. g. Home Infusion, Mail Order)</td>
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<td>.603</td>
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<td>p&lt;0.001</td>
<td>.052</td>
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<td>p&lt;0.009</td>
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<tr>
<td>Full-time (ref group)</td>
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<tr>
<td>Part-time</td>
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<td>.495</td>
<td>9.438</td>
<td>1</td>
<td>p&lt;0.002</td>
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<td>.083</td>
<td>.577</td>
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<tr>
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<td>28378.23</td>
<td>.000</td>
<td>1</td>
<td>p&lt;0.999</td>
<td>.000</td>
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</table>

*Indicates statistical significance at p<.05 for the whole group variable

Perceived Behavioral Control and Dispensing Practices: It was hypothesized that pharmacists that find that it is easy to dispense emergency contraception will be more likely to dispense it. To test this hypothesis, the dependent variable was regressed against the continuous variable that measured perceived behavioral while controlling for the socio-demographic control variables (Table 43). The variable perceived behavioral control was found to be a significant predictor of having ever dispensed emergency contraception. Specifically, for every one point increase in perceived behavioral control or perceived ease in dispensing Plan B, the odds of dispensing it increased by 1.1 (p<0.022).
Table 43. Logistic Regression Analysis for Perceived Behavioral Control (PBC) and Dispensing Practices while Controlling for Socio-demographic Variables

<table>
<thead>
<tr>
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<th>df</th>
<th>Sig.</th>
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<td>5.212</td>
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<td>1.173</td>
<td>1.023 1.346</td>
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<td>&lt; 36 (ref group)</td>
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<tr>
<td>36-50</td>
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<td>.685</td>
<td>.091</td>
<td>1</td>
<td>p&lt;0.763</td>
<td>.813</td>
<td>.212 3.114</td>
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<td>.907</td>
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<td>.150 5.233</td>
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<tr>
<td>Married (ref group)</td>
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</tr>
<tr>
<td>Living with partner</td>
<td>1.128</td>
<td>1.275</td>
<td>.782</td>
<td>1</td>
<td>p&lt;0.376</td>
<td>3.089</td>
<td>.254 37.626</td>
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<td>.639</td>
<td>.010</td>
<td>1</td>
<td>p&lt;0.922</td>
<td>1.064</td>
<td>.304 3.723</td>
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<tr>
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<td>.636</td>
<td>2.812</td>
<td>1</td>
<td>p&lt;0.094</td>
<td>2.903</td>
<td>.835 10.091</td>
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<tr>
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</tr>
<tr>
<td>9-22</td>
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<td>.661</td>
<td>.334</td>
<td>1</td>
<td>p&lt;0.563</td>
<td>1.466</td>
<td>.401 5.354</td>
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<tr>
<td>23+</td>
<td>.382</td>
<td>.875</td>
<td>.190</td>
<td>1</td>
<td>p&lt;0.663</td>
<td>1.464</td>
<td>.263 8.140</td>
</tr>
<tr>
<td>Type of Pharmacy Employed*</td>
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</tr>
<tr>
<td>Community—Chain (ref group)</td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>Community—Independent</td>
<td>-1.78</td>
<td>.547</td>
<td>10.677</td>
<td>1</td>
<td>p&lt;0.001</td>
<td>.167</td>
<td>.057  .489</td>
</tr>
<tr>
<td>Hospital</td>
<td>-2.87</td>
<td>.551</td>
<td>27.137</td>
<td>1</td>
<td>p&lt;0.001</td>
<td>.057</td>
<td>.019  .167</td>
</tr>
<tr>
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<td>.649</td>
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<td>p&lt;0.001</td>
<td>.044</td>
<td>.012  .156</td>
</tr>
<tr>
<td>Job Title</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Staff Pharmacist (ref group)</td>
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</tr>
<tr>
<td>Pharmacy Manager</td>
<td>-1.10</td>
<td>.490</td>
<td>5.105</td>
<td>1</td>
<td>p&lt;0.024</td>
<td>.331</td>
<td>.127  .864</td>
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<tr>
<td>Other (e. g. Clinical Pharmacist)</td>
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<td>.585</td>
<td>1.892</td>
<td>1</td>
<td>p&lt;0.169</td>
<td>.447</td>
<td>.142 1.408</td>
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<td></td>
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</tr>
<tr>
<td>Full-time (ref group)</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Part-time</td>
<td>-1.78</td>
<td>.570</td>
<td>9.850</td>
<td>1</td>
<td>p&lt;0.002</td>
<td>.167</td>
<td>.055  .511</td>
</tr>
<tr>
<td>Retired</td>
<td>-21.323058.79</td>
<td>.000</td>
<td>1</td>
<td>p&lt;0.999</td>
<td>.000</td>
<td>.000  .000</td>
<td></td>
</tr>
</tbody>
</table>

*Indicates statistical significance at p<.05 for the whole group variable
Type of pharmacy where employed, job title, and current employment status were the only socio-demographic variables that were significant and therefore a logistic regression with only these variables were computed to find if there were any significant associations present (Table 44). Pharmacists working at a community independent, hospital, or other pharmacy were not as likely to dispense emergency contraception as compared to pharmacists who work at a community chain pharmacy. Pharmacy managers were not as likely to dispense emergency contraception as compared to staff pharmacists and part-time pharmacists were not as likely to dispense as compared to pharmacists who were employed full-time.

Table 44. Logistic Regression Analysis for Perceived Behavioral Control (PBC) and Dispensing Practices while Controlling for Type of Pharmacy where Employed, Job Title, and Current Employment Status

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>OR</th>
<th>95.0% C.I. for OR</th>
<th>Lower</th>
<th>Upper</th>
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</thead>
<tbody>
<tr>
<td>PBC Total Score</td>
<td>.161</td>
<td>.066</td>
<td>6.017</td>
<td>1</td>
<td>p&lt;0.014</td>
<td>1.175</td>
<td>1.033</td>
<td></td>
<td>1.337</td>
</tr>
<tr>
<td>Type of Pharmacy where Employed*</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Community—Chain (ref group)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Community—Independent</td>
<td>-1.70</td>
<td>.519</td>
<td>10.751</td>
<td>1</td>
<td>p&lt;0.001</td>
<td>.182</td>
<td>.066</td>
<td>.504</td>
<td></td>
</tr>
<tr>
<td>Hospital</td>
<td>-2.79</td>
<td>.524</td>
<td>28.428</td>
<td>1</td>
<td>p&lt;0.001</td>
<td>.061</td>
<td>.022</td>
<td>.171</td>
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</tr>
<tr>
<td>Other (e. g. Home Infusion)</td>
<td>-2.81</td>
<td>.581</td>
<td>23.510</td>
<td>1</td>
<td>p&lt;0.001</td>
<td>.060</td>
<td>.019</td>
<td>.187</td>
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</tr>
<tr>
<td>Job Title*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff Pharmacist (ref group)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pharmacy Manager</td>
<td>-1.12</td>
<td>.466</td>
<td>5.774</td>
<td>1</td>
<td>p&lt;0.016</td>
<td>.326</td>
<td>.131</td>
<td>.814</td>
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<tr>
<td>Other</td>
<td>-.982</td>
<td>.561</td>
<td>3.061</td>
<td>1</td>
<td>p&lt;0.080</td>
<td>.374</td>
<td>.125</td>
<td>1.125</td>
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<tr>
<td>Current Employment Status*</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Full-time (ref group)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part-time</td>
<td>-1.87</td>
<td>.537</td>
<td>12.125</td>
<td>1</td>
<td>p&lt;0.001</td>
<td>.154</td>
<td>.054</td>
<td>.442</td>
<td></td>
</tr>
<tr>
<td>Retired</td>
<td>-21.2</td>
<td>2268</td>
<td>000</td>
<td>1</td>
<td>p&lt;0.999</td>
<td>.000</td>
<td>.000</td>
<td>.</td>
<td></td>
</tr>
</tbody>
</table>

*Indicates statistical significance at p<.05 for the whole group variable
Intention to Dispense and Dispensing Practices: It was hypothesized that pharmacists that have a greater intention to dispense emergency contraception will in fact be more likely to dispense it. To test this hypothesis, the dependent variable was regressed against each of the eight questions that measured intention to dispense (Table 45). For every one increment increase in intention to dispense or likelihood to dispense Plan B, the odds of dispensing increased by 1.2 (p<0.001).

Table 45. Logistic Regression Analysis for Intention to Dispense Plan B and Dispensing Practices while Controlling for Socio-demographic Variables

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>OR</th>
<th>95.0% C.I.for OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intention to Dispense Plan B</td>
<td>.249</td>
<td>.053</td>
<td>22.333</td>
<td>1</td>
<td>p&lt;0.001</td>
<td>1.283</td>
<td>1.157 1.423</td>
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<tr>
<td>Age, years</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;36 (ref group)</td>
<td>.472</td>
<td>.070</td>
<td>.124</td>
<td>1</td>
<td>p&lt;0.790</td>
<td>1.124</td>
<td>1.019 1.243</td>
</tr>
<tr>
<td>36-50</td>
<td>-.248</td>
<td>.705</td>
<td>.124</td>
<td>1</td>
<td>p&lt;0.725</td>
<td>.780</td>
<td>.196 3.108</td>
</tr>
<tr>
<td>51-87</td>
<td>.181</td>
<td>.978</td>
<td>.034</td>
<td>1</td>
<td>p&lt;0.853</td>
<td>1.199</td>
<td>.176 8.146</td>
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<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married (ref group)</td>
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<td></td>
</tr>
<tr>
<td>Living with partner</td>
<td>-.248</td>
<td>1.028</td>
<td>.058</td>
<td>1</td>
<td>p&lt;0.809</td>
<td>.780</td>
<td>.104 5.845</td>
</tr>
<tr>
<td>Divorced/Separated/Widowed</td>
<td>-.708</td>
<td>.634</td>
<td>1.244</td>
<td>1</td>
<td>p&lt;0.265</td>
<td>.493</td>
<td>.142 1.708</td>
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<tr>
<td>Never been married</td>
<td>1.037</td>
<td>.651</td>
<td>2.539</td>
<td>1</td>
<td>p&lt;0.111</td>
<td>2.820</td>
<td>.788 10.095</td>
</tr>
<tr>
<td>Years in Practice</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>&lt;9 (ref group)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9-22</td>
<td>.117</td>
<td>.717</td>
<td>.027</td>
<td>1</td>
<td>p&lt;0.870</td>
<td>1.124</td>
<td>.276 4.584</td>
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<tr>
<td>23+</td>
<td>-.105</td>
<td>.941</td>
<td>.012</td>
<td>1</td>
<td>p&lt;0.911</td>
<td>.900</td>
<td>.143 5.690</td>
</tr>
<tr>
<td>Type of Pharmacy where Employed*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community—Chain (ref group)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community—Independent</td>
<td>-1.09</td>
<td>.575</td>
<td>3.604</td>
<td>1</td>
<td>p&lt;0.058</td>
<td>.335</td>
<td>.109 1.036</td>
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<tr>
<td>Hospital</td>
<td>-3.28</td>
<td>.576</td>
<td>32.470</td>
<td>1</td>
<td>p&lt;0.001</td>
<td>.037</td>
<td>.012 1.116</td>
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<tr>
<td></td>
<td>Coefficient</td>
<td>Standard Error</td>
<td>t-value</td>
<td>p-value</td>
<td></td>
<td></td>
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<tr>
<td>--------------------------------------</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (e.g. Home Infusion, Mail Order)</td>
<td>-3.53</td>
<td>.676</td>
<td>27.250</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job Title</td>
<td>1.459</td>
<td>2</td>
<td>p&lt;0.001</td>
<td>.029</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pharmacy Manager</td>
<td>-.440</td>
<td>.508</td>
<td>.750</td>
<td>.386</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (e.g. Clinical Pharmacist)</td>
<td>-.654</td>
<td>.626</td>
<td>1.092</td>
<td>.296</td>
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</tr>
<tr>
<td>Current Employment Status*</td>
<td>7.586</td>
<td>2</td>
<td>p&lt;0.023</td>
<td>.066</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time (ref group)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part-time</td>
<td>-1.58</td>
<td>.575</td>
<td>7.586</td>
<td>.006</td>
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</tr>
<tr>
<td>Retired</td>
<td>-20.6</td>
<td>1</td>
<td>18155.73</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Indicates statistical significance at p<.05 for the whole group variable

In the analysis between intention to dispense Plan B and ever dispensing, type of pharmacy where employed and current employment status were the only two socio-demographic variables that were significant and therefore a logistic regression with only these variables was computed to find if there were any significant associations present (Table 46). For intention to dispense Plan B, pharmacists working at a community independent, hospital, or other pharmacy were not as likely to dispense emergency contraception as compared to pharmacists who work at a community chain pharmacy. In addition, part-time pharmacists were not as likely to dispense as compared to pharmacists who were employed full-time.
Table 46. Logistic Regression Analysis for Intention to Dispense Plan B and Dispensing Practices while Controlling for Type of Pharmacy where Employed and Current Employment Status

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>OR</th>
<th>95.0% C.I. for OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intention to Dispense Plan B</td>
<td>.251</td>
<td>.049</td>
<td>26.417</td>
<td>1</td>
<td>p&lt;0.001</td>
<td>1.285</td>
<td>1.168—1.414</td>
</tr>
<tr>
<td>Type of Pharmacy where Employed*</td>
<td>53.300</td>
<td>3</td>
<td>p&lt;0.001</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community—Chain (ref group)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community—Independent</td>
<td>-1.11</td>
<td>.533</td>
<td>4.347</td>
<td>1</td>
<td>p&lt;0.037</td>
<td>.329</td>
<td>.116—.936</td>
</tr>
<tr>
<td>Hospital</td>
<td>-3.17</td>
<td>.512</td>
<td>38.493</td>
<td>1</td>
<td>p&lt;0.001</td>
<td>.042</td>
<td>.015—.114</td>
</tr>
<tr>
<td>Other (e. g. Home Infusion)</td>
<td>-3.50</td>
<td>.590</td>
<td>35.254</td>
<td>1</td>
<td>p&lt;0.001</td>
<td>.030</td>
<td>.009—.096</td>
</tr>
<tr>
<td>Current Employment Status*</td>
<td>7.563</td>
<td>2</td>
<td>p&lt;0.023</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time (ref group)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part-time</td>
<td>-1.36</td>
<td>.494</td>
<td>7.563</td>
<td>1</td>
<td>p&lt;0.006</td>
<td>.257</td>
<td>.097—.677</td>
</tr>
<tr>
<td>Retired</td>
<td>-21.3</td>
<td>17382</td>
<td>.000</td>
<td>1</td>
<td>p&lt;0.999</td>
<td>.000</td>
<td>.000</td>
</tr>
</tbody>
</table>

*Indicates statistical significance at p<.05 for the whole group variable

Final Model

All variables in model together and dispensing practices: Even after controlling for all predictor and potentially confounding variables, knowledge, intention or likelihood to dispense Plan B, marital status, type of pharmacy where employed, and employment status still maintained a statistically significant relationship with ever dispensing Plan B (Table 47). Specifically, for every one increment increase in knowledge score, the odds of dispensing increased by 1.7. Likewise, for every one unit increase in intention to dispense or likelihood to dispense Plan B, the odds of dispensing increased by 1.1. For marital status, pharmacists who have never been married were more likely to have ever dispensed Plan B as compared to marriage pharmacists. Pharmacists working at a hospital or other type of pharmacy were less likely to have ever dispensed Plan B as
compared to pharmacists working at a community chain pharmacy and pharmacists working full-time were more likely to have ever dispensed Plan B as compared to pharmacists working part-time. No statistical significance was found for attitudes, subjective norms, perceived behavioral control, intention to dispense by prescription, age, years in practice, or job title when all the variables were in the model together.

Multicollinearity or the linear relationships between explanatory variables was determined through a tolerance computation (Table 47). Since all tolerances for the predictor variables were high, there is no problem with multicollinearity in this study. This finding means that the relationship between the predictor variables and the dependent variable, ever-dispensed, are direct and therefore, strong linear dependencies are not seen among the independent variables.

In order to better understand and offer a complete picture for the last research question and model, (Question 3f: Are emergency contraception knowledge, attitudes, subjective norms, perceived behavioral control, and intention to dispense taken together, predictive of emergency contraception dispensing practices of Florida pharmacists?), it was necessary to take a few components into consideration, 1) the logistic regression analysis with all variables in the model (Table 47), 2) a goodness of fit test, and 3) a likelihood ratio test. Together, these elements can aid in understanding the relative fit of the final model. The Hosmer and Lemeshow goodness of fit test demonstrated a non-significant relationship between the predictor variables (Chi-square 5.91, p=0.658), which suggests that the variables are fitting the model. In addition, the likelihood ratio test was significant (Chi-square 129.70, p<0.001, also signifying that the variables are fitting the model. These three components suggest that overall the variables are fitting
the model and that all predictor variables taken together are associated with dispensing practices of Florida pharmacists.

Table 47. Logistic Regression Analysis for All Variables in Model

<table>
<thead>
<tr>
<th>Main Research Variables</th>
<th>Wald</th>
<th>Sig.</th>
<th>OR</th>
<th>95.0% C.I. for OR</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>13.89</td>
<td>(p&lt;0.001)</td>
<td>1.745</td>
<td>1.302</td>
<td>2.338</td>
</tr>
<tr>
<td>Attitudes</td>
<td>0</td>
<td>(p&lt;0.993)</td>
<td>0.999</td>
<td>0.837</td>
<td>1.193</td>
</tr>
<tr>
<td>Subjective Norms</td>
<td>0.911</td>
<td>(p&lt;0.340)</td>
<td>1.16</td>
<td>0.855</td>
<td>1.574</td>
</tr>
<tr>
<td>Perceived Behavioral Control</td>
<td>0.155</td>
<td>(p&lt;0.694)</td>
<td>1.039</td>
<td>0.858</td>
<td>1.259</td>
</tr>
<tr>
<td>Intention to Dispense Plan B</td>
<td>4.4</td>
<td>(p&lt;0.036)</td>
<td>1.192</td>
<td>1.012</td>
<td>1.404</td>
</tr>
<tr>
<td><strong>Confounders</strong></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Age, years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 36 (ref group)</td>
<td>0.983</td>
<td>(p&lt;0.612)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36-50</td>
<td>0.954</td>
<td>(p&lt;0.329)</td>
<td>2.543</td>
<td>0.391</td>
<td>16.55</td>
</tr>
<tr>
<td>51-87</td>
<td>0.637</td>
<td>(p&lt;0.425)</td>
<td>2.958</td>
<td>0.206</td>
<td>42.393</td>
</tr>
<tr>
<td>Marital status</td>
<td>5.181</td>
<td>(p&lt;0.159)</td>
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<td></td>
</tr>
<tr>
<td>Married (ref group)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Living with partner</td>
<td>0.475</td>
<td>(p&lt;0.490)</td>
<td>2.767</td>
<td>0.153</td>
<td>49.939</td>
</tr>
<tr>
<td>Divorced/Separated/Widow</td>
<td>0.282</td>
<td>(p&lt;0.596)</td>
<td>1.727</td>
<td>0.229</td>
<td>13.01</td>
</tr>
<tr>
<td>Never been married</td>
<td>4.889</td>
<td>(p&lt;0.027)</td>
<td>10.574</td>
<td>1.307</td>
<td>85.535</td>
</tr>
<tr>
<td>Years in Practice</td>
<td>0.294</td>
<td>(p&lt;0.863)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>&lt;9 (ref group)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>10-22</td>
<td>0.105</td>
<td>(p&lt;0.746)</td>
<td>1.35</td>
<td>0.22</td>
<td>8.27</td>
</tr>
<tr>
<td>23+</td>
<td>0.018</td>
<td>(p&lt;0.892)</td>
<td>0.845</td>
<td>0.075</td>
<td>9.581</td>
</tr>
<tr>
<td>Type of Pharmacy where Employed*</td>
<td>12.803</td>
<td>(p&lt;0.005)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community—Chain (ref group)</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Community—Independent</td>
<td>0.997</td>
<td>(p&lt;0.318)</td>
<td>0.456</td>
<td>0.098</td>
<td>2.129</td>
</tr>
<tr>
<td>Hospital</td>
<td>9.313</td>
<td>(p&lt;0.002)</td>
<td>0.075</td>
<td>0.014</td>
<td>0.395</td>
</tr>
<tr>
<td>Other (e. g. Home Infusion)</td>
<td>7.602</td>
<td>(p&lt;0.006)</td>
<td>0.068</td>
<td>0.01</td>
<td>0.46</td>
</tr>
<tr>
<td>Job Title</td>
<td>2.128</td>
<td>(p&lt;0.345)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff Pharmacist (ref group)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pharmacy Manager</td>
<td>1.113</td>
<td>(p&lt;0.291)</td>
<td>0.491</td>
<td>0.131</td>
<td>1.84</td>
</tr>
<tr>
<td>Other (e. g. Clinical Pharmacist)</td>
<td>1.588</td>
<td>(p&lt;0.208)</td>
<td>0.31</td>
<td>0.05</td>
<td>1.914</td>
</tr>
<tr>
<td>Current Employment Status*</td>
<td>6.187</td>
<td>(p&lt;0.045)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time (ref group)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part-time</td>
<td>6.187</td>
<td>(p&lt;0.013)</td>
<td>0.17</td>
<td>0.042</td>
<td>0.686</td>
</tr>
<tr>
<td>Retired</td>
<td>0</td>
<td>(p&lt;1.000)</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

*Indicates statistical significance at \(p<.05\) for the whole group variable
Table 48. Summary Table of Main Findings

<table>
<thead>
<tr>
<th>Main Variables</th>
<th>Crude OR</th>
<th>OR for Single Predictor Model*</th>
<th>OR with All Predictors in Model*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>1.57</td>
<td>1.68 (1.39, 2.02)</td>
<td>1.74 (1.30, 2.33)</td>
</tr>
<tr>
<td></td>
<td>(1.38, 1.78)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitudes</td>
<td>1.12</td>
<td>1.23 (1.11, 1.36)</td>
<td>0.99 (0.83, 1.19)</td>
</tr>
<tr>
<td></td>
<td>(1.05, 1.19)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subjective Norms</td>
<td>1.42</td>
<td>1.33 (1.13, 1.56)</td>
<td>1.16 (0.85, 1.57)</td>
</tr>
<tr>
<td></td>
<td>(1.24, 1.63)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Behavioral Control</td>
<td>1.19</td>
<td>1.17 (1.03, 1.33)</td>
<td>1.03 (0.85, 1.25)</td>
</tr>
<tr>
<td></td>
<td>(1.07, 1.32)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intention to Dispense</td>
<td>1.24</td>
<td>1.28 (1.16, 1.41)</td>
<td>1.19 (1.01, 1.40)</td>
</tr>
<tr>
<td></td>
<td>(1.15, 1.33)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Model is adjusted for confounders

Summary of Results

Table 48 provides a summary of the main findings in this study. It includes the crude ORs for each main predictor variable, the ORs for the single predictor model while controlling for confounder variables, and the ORs for the final model with all predictors in the model while controlling for confounder variables.

In the end, knowledge about emergency contraception was the most important predictor of ever having dispensed emergency contraception. After knowledge, intention to dispense was the second most important predictor of having ever dispensed the medication. Although attitudes, subjective norms, and perceived behavioral control were statistically significant in each of their own single predictor models, they failed to reach statistical significance in the full model.
The following confounder variables were consistently significant in every single predictor model and the full model: type of pharmacy where employed and current employment status. For type of pharmacy, pharmacists working at a community independent, hospital, or other pharmacy were not as likely to dispense emergency contraception as compared to pharmacists who worked at a community chain pharmacy. For employment status, part-time pharmacists were not as likely to dispense as compared to pharmacists who were employed full-time.

Although marital status was not significant for all models, it was significant for the single predictor models for knowledge and attitudes and was also significant in the final model where never married individuals were much more likely to dispense as compared to married individuals. The last confounding variable, job title, was not significant in the full model but was significant for the single predictor models for knowledge, attitudes, and perceived behavioral control where pharmacy managers were not as likely to dispense emergency contraception as compared to staff pharmacists.

**Additional Analyses**

*Table 49. Summary Table of Two Knowledge Items*

<table>
<thead>
<tr>
<th>Main Variables</th>
<th>Crude OR</th>
<th>OR for Single Predictor Model*</th>
<th>OR with All Predictors in Model*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan B can cause birth defects if taken by a pregnant woman</td>
<td><strong>1.76 (1.06, 2.91)</strong></td>
<td><strong>2.25 (1.10, 4.61)</strong></td>
<td><strong>1.44 (0.66, 3.12)</strong></td>
</tr>
<tr>
<td>Plan B can act as an abortifacient</td>
<td><strong>3.83 (2.28, 6.44)</strong></td>
<td><strong>5.17 (2.47, 10.8)</strong></td>
<td><strong>4.64 (2.15, 10.0)</strong></td>
</tr>
</tbody>
</table>

*Model is adjusted for confounders*

Because discussion in the focus groups centered around two key issues: side effects resulting from plan B and the potential for Plan B to induce and abortion,
independent associations were computed for the two knowledge questions addressing these issues: whether or not pharmacists thought that Plan B could cause birth defects if taken by a pregnant woman and whether or not they thought Plan B acted as an abortifacient. Table 49 includes the crude ORs for each item, the ORs for the single predictor model while controlling for confounder variables, and the ORs for a model with both items in the model while controlling for confounder variables.

Understanding that Plan B does not cause an abortion was the most important predictor of ever having dispensed it. Although both items were statistically significant in each of their own single predictor models, thinking Plan B causes birth defects failed to reach statistical significance in the full model. Since the OR is so high for pharmacists who thought that Plan B can cause an abortion, this item may be causing much of the association between knowledge and dispensing practices which has implications for future research and intervention efforts.
Chapter Five: Discussion and Conclusions

Section I: Synthesis of Research Findings

Chapter five has been partitioned into three distinct sections. Section I provides a synthesis of research findings for each of the three major research questions and methods, key findings and conclusions for the study as a whole, and study limitations and strengths. Section II discusses the holistic perspective that this study captures and Section III provides broader conclusions and implications for public health as well as future direction for research, policy, and practice.

Research Question 1: Pharmacy School Curriculum Review

Question 1: What do the 91 accredited schools of pharmacy in the U.S. teach about emergency contraception?

Question 1a: What objectives, course assignments, course readings, and lectures concerning emergency contraception are provided in the required courses at the 91 accredited schools of pharmacy in the U.S.?

Question 1b: What objectives, course assignments, course readings, and lectures concerning emergency contraception are provided in the elective courses at the 91 accredited schools of pharmacy in the U.S.?

The findings from the pharmacy school curriculum review were as expected in that the majority of accredited schools of pharmacy in the U.S. reported that they do offer required courses that provide content on emergency contraception. A much smaller
percentage reported offering elective courses that provide this content. All (100%) respondents reported that pharmacy schools in the U.S. should include content material on emergency contraception, however not all respondents reported doing so in their own schools.

Participants in the curricula review reported that the majority of courses that provide content on emergency contraception are taught in pharmacotherapy and therapeutics courses. This finding was substantiated by data collected from the focus group discussions. Understanding which courses teach emergency contraception content to pharmacy students is important in terms of future educational and intervention efforts.

Although the curriculum review survey asked respondents to attach syllabi that included content on emergency contraception, many did not. Only 10 syllabi (or 14% of the sample) were retrieved across seven schools who reported that they provide course content on emergency contraception in their classes. Even among the limited retrieved syllabi, only four of the ten syllabi overtly mentioned emergency contraception in any of the content areas.

In sum, important findings from the pharmacy school curriculum review included the following: 1) that accredited schools of pharmacy in the U.S. report teaching about emergency contraception in their pharmacy school classes, 2) that this content is taught primarily in required pharmacotherapy and therapeutics courses, and 3) not enough participants included syllabi in the review and the information that was detected from the limited course syllabi was not helpful.
**Research Question 2: Pharmacy Student Focus Groups**

Question 2: How is emergency contraception course content taught at accredited schools of pharmacy, as perceived by fourth year pharmacy students at the four accredited schools of pharmacy in Florida?

- **Question 2a:** What did pharmacy students learn about emergency contraception in their pharmacy school classes?
- **Question 2b:** How was emergency contraception taught in their pharmacy school classes?
- **Question 2c:** What are the projected emergency contraception dispensing practices of pharmacy students?

The pharmacy student focus groups uncovered rich information on the knowledge pharmacy students reported learning about emergency contraception from their pharmacy school classes, the teaching instruction from these classes, and the projected future dispensing practices of pharmacy students.

Each focus group included an initial paper and pencil survey and a focus group discussion. The paper and pencil survey revealed that although 90.5% of students responded that they did learn about emergency contraception in their pharm D classes, still over half (52.3%) of participants were either not sure or believed that pharmacists were not well enough informed to confidently dispense emergency contraception and nearly 20% answered either that they would not or that they were not sure about their future dispensing of the medication. In addition, most students reported that there was more information they wished they had received about emergency contraception. These findings alone demonstrate that what is taught in pharmacy school classes is perceived as
insufficient in providing pharmacists with the tools to confidently dispense emergency contraception.

The focus group discussions revealed an important discrepancy or disconnect between what students reported on their paper and pencil survey and what they reported in the focus group discussions. Although the majority of students reported that they did learn about emergency contraception in their pharmacy school classes on the paper and pencil survey, the focus group discussions revealed the exact opposite; that for the most part, students did not learn about emergency contraception in their pharmacy school classes. In the focus group discussions, students reported that they received information on emergency contraception from outside sources such as work, print media, internet, news, and friends. This discrepancy between what the students reported on the paper and pencil survey and what was reported in the focus group discussions is noteworthy. This finding may be related to social-desirability bias and will be discussed in detail later in this section.

Another important finding from the focus group discussions is that specific knowledge was not reported by the majority of the students. Knowledge from pharmacy school classes was disparate and only students in one of the focus groups seemed to understand the three mechanisms of action of emergency contraception.

In terms of teaching instruction in pharmacy school classes, most students responded that the professor attitude was neutral. A neutral attitude seems like the desirable answer yet most likely unachievable. Although professors are supposed to maintain a neutral attitude in class, students may be aware of their professor’s views on a given topic, especially a topic as controversial as emergency contraception.
Questions around dispensing practices of pharmacists by far yielded the most discussion and many unexpected themes emerged from these discussions. In terms of emergency contraception dispensing, participants held major biases and judgments depending on the situation of the person purchasing the contraception. Participants were hesitant to dispense due to many issues including: hesitancy due to 1) mechanism of action, 2) repeat use, 3) age requirement, 4) the situation of a particular woman, 5) side effects, and 6) believing it is wrong. These biases could have a direct impact on access to this form of contraception.

The focus group discussions revealed two other important and surprising findings: 1) that refusals to dispense this medication are common and 2) that pharmacists feel a duty to educate about this medication even though it is not a pharmacist-counseled product. In the literature review, refusals to dispense seemed isolated; however within only four focus groups, unsolicited stories of refusals were present in each discussion. This finding is alarming and indicates that uncovering the true prevalence of refusals is critical. In addition, students reported a strong desire to educate and counsel consumers about emergency contraception even though there is no legal need to do so. Future research could focus on whether or not consumers want counseling/education from pharmacists if it is not warranted. Also, perhaps there could be an important role for pharmacists in providing accurate information to consumers who request it.

In sum, the focus group discussions with pharmacy students were revealing: First, much of what pharmacy students learn about emergency contraception does not come from their pharmacy school classes but comes from outside sources. Second, what is taught in pharmacy school classes about emergency contraception is brief and over half
of the sample felt that pharmacists are not well enough informed to confidently dispense emergency contraception. Third, student knowledge about emergency contraception was not specific. Fourth, many students entered the focus group with a preconceived notion about people who use emergency contraception and would hesitate to dispense the medication. Fifth, many participants held biases or judgments towards emergency contraception users which may limit access. Sixth, participants feel a need to counsel consumers about a medication that is not a pharmacy-counseled product. And last, refusing to dispense emergency contraception is real and has the potential to limit access to women in need.

Research Question 3: State-Wide Pharmacist Survey

Question 3: What is the relationship among emergency contraception knowledge, attitudes, subjective norms, perceived behavioral control, intention to dispense, and dispensing practices of Florida pharmacists registered with the Board of Pharmacy?

Question 3a: Is emergency contraception knowledge predictive of dispensing practices of Florida pharmacists?

Question 3b: Are attitudes about emergency contraception predictive of emergency contraception dispensing practices of Florida pharmacists?

Question 3c: Are subjective norms about emergency contraception (whether important people such as colleagues, supervisors, corporate headquarters, and peers think they should dispense emergency contraception) predictive of emergency contraception dispensing practices of Florida pharmacists?
Question 3d: Is perceived behavioral control, the perceived ease or difficulty of dispensing emergency contraception, predictive of dispensing practices of Florida pharmacists?

Question 3e: Is intention to dispense emergency contraception predictive of dispensing practices of Florida pharmacists?

Question 3f: Are emergency contraception knowledge, attitudes, subjective norms, perceived behavioral control, and intention to dispense taken together, predictive of emergency contraception dispensing practices of Florida pharmacists?

Of all the independent variables, knowledge about Plan B had the strongest relationship to dispensing Plan B. Specifically, for every one point increase in knowledge score, the odds of a pharmacist dispensing Plan B were increased by a factor of 1.69 (p<0.001). Pharmacists had low levels of knowledge about understanding Plan B’s true mechanism of action, limited awareness of who can sell Plan B to consumers and how to sell OTC to women in advance of need, and the relationship between Plan B and birth defects. These areas of low knowledge are of concern and should be addressed.

Pharmacist attitudes about Plan B were found to be a significant predictor of having ever dispensed it. Specifically, for every one point increase in more positive attitudes about Plan B, the odds of dispensing increased by 1.23 (p<0.001). Although the sample had a slight skew towards more favorable attitudes about the medication, many pharmacists felt uncomfortable dispensing to different groups of people. For example, a third of the sample felt uncomfortable dispensing to adult women, 58.5% felt uncomfortable dispensing to men, and 61.4% felt uncomfortable dispensing to
adolescents. The variation in comfort dispensing Plan B based on the person requesting the medication found in the state-wide survey is similar to the hesitancy in dispensing the medication based on person found in the focus group discussions.

The variables subjective norms and perceived behavioral control were found to be significant predictors of having ever dispensed Plan B (1.33, p<0.001 and 1.17 p<0.014 respectively). Interestingly, pharmacists were less likely to dispense Plan B when there is an employee at their pharmacy who refuses to dispense it. Additionally, pharmacists were more likely to have ever dispensed Plan B if the pharmacy in which they work had a policy in place regarding what to do if a refusal should occur. These two findings together demonstrate that both policy and pharmacy culture are associated with dispensing practices and potentially access to care. Understanding this has major implications for the development of intervention strategies.

Intention or likelihood to dispense Plan B varied by the consumer requesting the medication. For every one increment increase in intention to dispense or likelihood to dispense Plan B, the odds of dispensing increased by 1.28 (p<0.001). In general, a greater percentage of pharmacists reported being likely to dispense to women who have experienced incest or rape, followed by women who have experienced a problem with their birth control method, followed by women who request the method after having unprotected sexual intercourse, followed by dispensing (by prescription) to sexually active teens under age 18, and last to a person other than the ultimate consumer of the product such as parents or a boyfriend. In fact, almost half of pharmacists reported that they were unlikely to dispense to a person other than the ultimate consumer of the
product such as parents or a boyfriend. This finding is problematic in that any person over 18 can purchase Plan B OTC.

Overall, the state-wide pharmacist survey was conclusive in finding that knowledge, attitudes, subjective norms, perceived behavioral control, and intention to dispense are all predictive of dispensing Plan B among Florida pharmacists. Although each single predictor model tells a story, when all variables were in the model together, knowledge about emergency contraception was the most important predictor of ever having dispensed it. After knowledge, intention to dispense was the second most important predictor of having ever dispensed the medication. Although attitudes, subjective norms, and perceived behavioral control were statistically significant in each of their own single predictor models, they failed to reach statistical significance in the full model.

**Key Findings/Conclusions for Entire Study**

When viewing the study in totality, there are five main findings that should be highlighted. The first main finding from the study as a whole is that there is a disconnect between what pharmacy schools say they are teaching and what pharmacy students report learning in their pharmacy school classes. However, the true dynamic of this discrepancy is not known. For instance, are pharmacy schools teaching the content and the students are not retaining the information or are pharmacy schools not effectively teaching the information to students?

The second major finding that was found in both the focus groups and the pharmacist survey is that soon-to-be pharmacists and already practicing pharmacists report to be more or less likely to dispense Plan B based on the situation of the person
requesting the medication. This finding demonstrates that pharmacists are potentially allowing personal values or judgments to guide their practice through making dispensing decisions based on the consumer purchasing it. These reported biases and the hesitancies in dispensing are troubling.

The third important finding that was also mentioned above is that pharmacist knowledge, attitudes, subjective norms, perceived behavioral control, and intention to dispense all are predictive of having ever dispensed Plan B. Specifically, high levels of knowledge, positive attitudes, an increased perception of important people thinking they should dispense, perceived ease of dispensing, as well as an increased likelihood to dispense all increase the odds that a pharmacist has ever dispensed Plan B. However, high levels of knowledge had the greatest odds of ever dispensing Plan B. It is of concern that pharmacists had limited knowledge in some critical areas such as how to dispense Plan B OTC and comprehension of its true mechanism of action.

Viewing these three findings simultaneously, that low knowledge and decreased intention to dispense (due to the situation of the consumer) of pharmacists equates to less dispensing, that pharmacy students perception is that they are not learning about the medication in their pharmacy school classes, and that there are major biases and hesitancy about dispensing to varying groups of people, provides evidence of a major problem that has the potential to limit access of emergency contraception to the women who need it.

A fourth key finding that should be discussed is social desirability response bias. This type of bias is typically seen when surveys employ threatening or sensitive questions which can lead respondents to change their responses to appear socially or politically
correct or more agreeable (Van de Mortel, 2008). Social desirability response may be occurring in all three components of this research. For example, in the focus group discussions students responded that they did receive information on emergency contraception in their pharmacy school classes on the initial paper and pencil survey but then the focus group discussions revealed that didn’t learn about emergency contraception from their coursework, but more from outside sources. It is possible that the paper and pencil survey question, *did you take any classes in your Pharm D program which taught you about EC?*, led students to the pick the socially desirable answer but when they started discussing it as a group, it became clear that they either did not receive this information or that if they did, it was brief and not comprehensive. Even though the curricula review survey and state-wide pharmacist surveys were completely anonymous, it is possible that the same bias was occurring in these surveys. For example, perhaps a greater proportion of Deans responded that they include content on emergency contraception due to the social desirability of the answer thereby inflating the response.

The last key finding concerns not the data but the study design, specifically, the importance of the mixed methods study design. In this case, the mixed methods study design strengthened this study in that it allowed for the most complete analysis of this issue. The quantitative elements captured important statistics and the qualitative findings enriched the data by giving voice to the numbers. The study would not have been as powerful without the focus group qualitative data. That is, the finding that pharmacy students are not truly acquiring information on emergency contraception in their pharmacy school classes would not have come to light. This study demonstrates the need for mixed methods study design in order to fully understand the complexity of any issue.
Results from the study should be interpreted with caution due to several limitations, the first of which is response rate. The state-wide pharmacist survey had a low response rate (22%) even after employing the Dillman Tailored Design Method and reviewing response rates from other studies that surveyed pharmacists. No data are available for non-responders and therefore no calculations can be performed to detect non-responder bias. Perhaps incentives provided for completing the survey may have increased the response rate, however the study was not funded and therefore incentives were not possible.

Although there was no problem with the response rate for the pharmacy school curricula review, the lack of syllabi received is a limitation. Only 10 syllabi (14%) were received from seven schools who reported that they provide course content on emergency contraception in their courses. This limited number of syllabi made it difficult to make generalizations about specific emergency contraception course content taught in U.S. pharmacy schools. In addition, the syllabi that were received did not have detailed information on how the emergency contraception course content was presented in class. This finding was unexpected and in order to fully understand how emergency contraception course content is taught in pharmacy schools, class observations as well as interviews with professors may be needed.

A second limitation in this study is generalizablility. Specifically, the state-wide pharmacist survey does not procure a national sample and therefore results cannot be generalized to all pharmacists in the U.S. Likewise, the pharmacy student focus groups
cannot be generalized to all pharmacy students in the U.S. In addition, findings from this research study cannot be generalized to non-English speaking individuals.

A third limitation only related to the focus group discussions is that cause and effect relationships or statistical relationships could not be calculated. However, this limitation is true for qualitative research in general and was expected. A fourth limitation is that this study was not able to directly link the curricula review to the schools where the focus groups were conducted. Although this process would have not provided anonymity to the schools, it would have been stronger in demonstrating relationships between teaching and learning.

A fifth limitation is the difficulty in identifying temporal sequence given the cross-sectional nature of this research. For example, although there is a significant relationship between knowledge and emergency contraception dispensing, does knowledge lead to increased dispensing or does increasing dispensing lead to increased knowledge? The same is true for the other significant relationships.

A sixth limitation that was discussed previously is the potential for social-desirability bias where participants may have adjusted their true answer to reflect what they thought was the more social desirable answer given the potentially sensitive subject matter.

A last limitation that parallels social-desirability bias is that data collected in this study was self-reported which means that it may be prone to some inaccuracy due to inaccurate recall or discomfort in disclosing personal information. For example, the information received from the pharmacy students is based solely on self-reporting, meaning that what pharmacy students report learning about in their classes may not be
reflective of actual classroom instruction. However, the focus groups provided an accurate picture of what pharmacy students remember learning about emergency contraception and how they remember being taught this information.

**Study Strengths**

This study had many strengths and the first of which is its mixed methods study design. Employing mixed methods deeply enriched this study and the findings. The big picture or complete perspective could not have been obtained without the focus group discussions as the qualitative data is the link to understanding that there is a disconnect between what pharmacy schools say they are teaching and what pharmacy students report learning. Overall this study was well designed, informed by theory and literature and produced significant results that can be used to inform research, policy, and practice.

A second strength of this study comes from the study design. For one, the randomization of the state-wide pharmacist study was a strength. Random selection of pharmacists allows for generalization to all Florida pharmacists which provides a piece to the puzzle in terms of understand dispensing practices on a national and geographical level. In addition, the curriculum review study acted as a census of all accredited schools of pharmacy in the nation which is useful in that not many studies are able to survey the whole population in their sample.

A third strength is the unique universal perspective this study provides. Each piece of this research study alone is significant, but together it offers a holistic perspective. This study provides a three-pronged holistic view of pharmacy teaching, education, and practice. It is through this perspective that the whole picture can be captured, providing opportunities for intervention on multiple levels. It should be noted
that emergency contraception is just one of the many drugs that should be addressed in pharmacy education and training interventions. It is understood that this is one of the many competing demands on pharmacy school curricula and practice.

A final strength of this study is its substantial contribution to the literature on pharmacist education, practice, and policy as it is the first known study of its kind. No other study has been so comprehensive in its comprehension of pharmacist education and practice. Although Van Riper and Hellerstedt’s (2005) South Dakota study assessed pharmacists’ attitudes, knowledge, and dispensing practices of emergency contraception, they failed to determine whether pharmacist knowledge and attitudes about emergency contraception predict dispensing practices. The proposed study not only tested these relationships but found statistical significance which has major implications for policy, education, and practice.

Section II: Discussion of Universal Perspective

This research offers a unique perspective of three different but related datasets. Taken together, findings demonstrate that teaching may be associated with student learning, which in turn may be associated with dispensing practices of pharmacists which inevitably may be associated with access to care. Figure 7 provides a model which can act as a metaphor to describe this process. The model depicts a game of pool. In this model, each pool ball represents a key element that is associated with the other eventually leading to ‘the pocket’ or in this case, leading to health access or lack of health access depending on how each cue ball is handled. However this depiction is telling, in that if all of these elements are not in place, the health access ball may never make the pocket, thereby limiting health access to those who need it. Of course there are other balls that
could be added to this model (e.g. health insurance, poverty etc.); however this study and this model demonstrates how these particular elements are associated with each other to potentially impact health access. It is important to note that intervention strategies can be applied to any of the pool balls in order to address health access, not just to the teaching ball. Although a multi-pronged approach addressing the pharmacy school curricula, student learning, and pharmacist practice is ideal, an intervention at any point would be beneficial.

This research followed the natural progression of pharmacists from education to subsequent practice. It examined the emergency contraception curricula and course content intended to teach future pharmacists, surveyed pharmacy students to understand how this course content translates into learned knowledge and projected dispensing behavior, and then lastly it surveyed practicing pharmacists to understand their emergency contraception knowledge, attitudes, and actual dispensing practices. In total, this research study employs a mixed methods design to offer a complete picture of pharmacists and emergency contraception from education to practice.
Section III: Broader Implications for Public Health and Future Direction

Broader Implications for Public Health

Although this study is concerned with one health access issue and one group of health service providers, it has broader implications for public health as a whole as well as other areas and health service professionals. That is, education and training may be associated with clinical practice for any health profession, for nurses, doctors, social workers and the list goes on. The importance of effective teaching, translating to efficient learning and informed practice and policy is important. As demonstrated in this study, the best intention of pharmacy school teaching does not lead to best practice. Practicing professionals should be trained to meet the needs of the public.

Access to health care should not be mitigated by personal beliefs and lack of knowledge. Personal perspective and beliefs should not drive clinical practice, science
should drive clinical practice. Specifically concerning is the lack of awareness around how to dispense Plan B OTC where 77.6% of pharmacists did not understand how to dispense Plan B OTC to women and 55.5% did not know who at the pharmacy could sell Plan B to consumers. Also concerning was the lack of knowledge about Plan B in general where 55.9% did not understand the correct mechanism of action, 55.9% incorrectly reported that Plan B can cause birth defects and just over 46% reported that Plan B can cause an abortion.

Another broad implication of this research concerns the idea of bias and issues of self-report data. There are varying levels of bias to be aware of when researching a controversial topic such as this one. This study uncovered three potentially varying levels of bias, 1) professor bias, 2) student bias, and 3) pharmacist bias. The professor bias can present itself in a few ways. For one, the professor may report that they teach certain content but they really do not cover it. Secondly, a professor may teach content but insert their biases in the content such that the true content is not taught correctly. Student bias may occur when a student may incorrectly report that she/he did not receive the information in class. Alternately, a student may come to class with a pre-set view or bias about the medication that is different from the teachers’ view. Pharmacist bias may be such that a pharmacist may have a bias towards a medication that no amount of training will change. In addition, a pharmacist may skim important material just enough to answer the questions in his/her continuing education courses so that they never gain new knowledge. These types of bias are not only present for this particular issue and this particular health profession but may be present with other health fields and topics as well.
Also, limited knowledge about other drugs may be associated with health across many varying professions.

*Future Direction.* Results from this study have implications for future research, policy, and practice. Figure 6 can be used as a model to guide this discussion around the overall conceptual model and potential areas for intervention.

*Research.* There is a need to better understand what is being taught to pharmacy students in terms of emergency contraception course content. The curriculum review survey did not fully capture what is being taught to students due to the low number of syllabi provided by pharmacy schools. However, even after reviewing the limited number of syllabi that were collected, pertinent information on course content could not be obtained. Therefore, more information could potentially be gathered through interviewing professors to determine what content is presented in class and perhaps observing some pharmacotherapy courses where the content is said to be taught to better understand the dissemination of this content.

- In addition, because the majority of respondents from the curriculum survey reported that they are teaching about emergency contraception, schools should review their course outline to ensure that what they think is being taught within their courses is actually being taught. Schools could look to see if there is a disparity between formal objectives and what is being taught in class.

- It would also be helpful to track the number of actual refusals that are taking place at our local pharmacies or develop a ‘turn-it-in’ hotline or webpage where consumers can report refusals that occur. This way, the magnitude of this problem could be captured.
• One main element missing in this study is the voice of the consumer. How do consumers feel about pharmacists and Plan B dispensing? Do consumers want to be counseled? Do consumers feel that pharmacists should assume their perceived role of the counselor/educator? Does fear of pharmacist bias and stigma impact consumer Plan B seeking behaviors? It would be interesting to either conduct a consumer study or even link results from a consumer study with the results from this study to make appropriate inferences. A study aimed at understanding the role of pharmacists from both the practitioner and consumer perspective may provide additional insights.

• It would also be interesting to review the stories of refusal from the pharmacy student focus groups and layer these stories with the pharmacist professional code of ethics. This may demonstrate how policy is translated (or not translated) into practice.

• Another potential research avenue would be to compare knowledge, attitudes, and dispensing practices of Plan B with another OTC medication that does not have the same moral implications to see if there are any differences or similarities.

Policy. There are also implications for pharmacy policy. This study uncovered some important information regarding the way that pharmacy culture and policy are associated with practice. Pharmacists that worked at a pharmacy with an existing policy regarding refusals of emergency contraception were more likely to have ever dispensed the medication and a pharmacist who worked at a pharmacy where a colleague refuses to dispense the medication was less likely to have ever dispensed Plan B. Since policy is associated with practice, a next step would be to contact the
American Pharmacists Association (AphA), the American Medical Association (AMA), and the American College of Obstetricians and Gynecologists (ACOG) and work together to ensure that all pharmacies create policies regarding dispensing Plan B and that there is protocol in place should pharmacists refuse to dispense a medication.

*Practice.* There are also implications for better teaching. For example, it would be helpful to bring together pharmacy school faculty and students to create a teaching module that will be most effective in teaching students about emergency contraception. This module could then be tested and implemented in pharmacy school classrooms. Employing students in the development of this module along with faculty may ensure effective teaching by the professor and efficient learning and retention of material by the student. If it worked and was evaluated, this type of module development and curriculum enhancement could be used by a variety of controversial topics in science.

- In terms of reaching already practicing pharmacists, better continuing education credit opportunities to learn about this material would be helpful, although there is already an informative and well-written one available through Postgraduate Healthcare Education, LLC which is accredited to provide continuing pharmacy education by the Accreditation Council for Pharmacy Education. Ensuring that pharmacists are picking this particular CEU or a comparable one would be helpful. Also, developing a training that can be provided to already practicing pharmacists would be useful. This training could focus on the deficiencies in knowledge found in this study, increasing pharmacist comfort level in dispensing.
to varying groups of people, along with a discussion of unfair and unjust bias placed on a consumer and how this bias might limit access to those in need. Requiring that pharmacists go through this training is essential.

**Dissemination.** The findings from this study will be widely disseminated. In terms of education, providing findings to the accredited schools of pharmacy in the U.S. will increase awareness about the disparity between teaching and student learning. Pharmacy schools may use the results to enhance already existing curricula or develop new curricula for students. These findings will also be disseminated to pertinent organizations such as national and state pharmacy associations and other like minded organizations in the field such as the American Medical Association. The findings can then be used to support and implement new policy that will increase access to this medication. Lastly, this research and its effective use of the Theory of Planned Behavior can be added to the knowledge on the use of this theoretical framework.
In sum, this study uncovered a disconnect between pharmacist education and practice. It also uncovered important findings regarding pharmacist biases which are associated with dispensing and inevitably health access. Research from this study suggested that knowledge, attitudes, social norms, perceived ease with dispensing, and dispensing intention are associated with dispensing and access to care. Figure 8 pictorially demonstrates that effective teaching may be associated with efficient learning, which creates informed practice, which may be associated to health access. Preconceived bias or beliefs should also be considered in the model. Additionally, there are potential areas for intervention at each stage. This study was well designed, informed by theory and literature and produced important results that can be used to inform future research, policy, and practice.
References


Chung-Park M. Emergency contraception knowledge, attitudes, practices, and barriers among providers at a military treatment facility. *Military Medicine, 173*, 305-312.


Appendices
### Appendix A.

**Table 50: Oral contraceptives that can be used for emergency contraception in the United States**

<table>
<thead>
<tr>
<th>Brand</th>
<th>Company</th>
<th>pills per Dose&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Ethinyl Estradiol per Dose (µg)</th>
<th>Levonorgestrel per Dose (mg)&lt;sup&gt;c&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Progestin-only pills: Take 1 dose</strong>&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plan B</td>
<td>Barr/Duramed</td>
<td>2 white pills</td>
<td>0</td>
<td>0.75</td>
</tr>
<tr>
<td>Ovrette</td>
<td>Wyeth-Ayerst</td>
<td>40 yellow pills</td>
<td>0</td>
<td>0.75</td>
</tr>
<tr>
<td><strong>Combined progestin and estrogen pills: take 2 doses, 12 hours apart</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alesse</td>
<td>Wyeth-Ayerst</td>
<td>5 pink pills</td>
<td>100</td>
<td>0.50</td>
</tr>
<tr>
<td>Aviane</td>
<td>Barr/Duramed</td>
<td>5 orange pills</td>
<td>100</td>
<td>0.50</td>
</tr>
<tr>
<td>Cryselle</td>
<td>Barr/Duramed</td>
<td>4 white pills</td>
<td>120</td>
<td>0.60</td>
</tr>
<tr>
<td>Enpresse</td>
<td>Barr/Duramed</td>
<td>4 orange pills</td>
<td>120</td>
<td>0.50</td>
</tr>
<tr>
<td>Lessina</td>
<td>Barr/Duramed</td>
<td>5 pink pills</td>
<td>100</td>
<td>0.50</td>
</tr>
<tr>
<td>Levlen</td>
<td>Berlex</td>
<td>4 light-orange pills</td>
<td>120</td>
<td>0.60</td>
</tr>
<tr>
<td>Levlite</td>
<td>Berlex</td>
<td>5 pink pills</td>
<td>100</td>
<td>0.50</td>
</tr>
<tr>
<td>Levora</td>
<td>Watson</td>
<td>4 white pills</td>
<td>120</td>
<td>0.60</td>
</tr>
<tr>
<td>Lo/Ovral</td>
<td>Wyeth-Ayerst</td>
<td>4 white pills</td>
<td>120</td>
<td>0.60</td>
</tr>
<tr>
<td>Low-Ogestrel</td>
<td>Watson</td>
<td>4 white pills</td>
<td>120</td>
<td>0.60</td>
</tr>
<tr>
<td>Lutera</td>
<td>Watson</td>
<td>5 white pills</td>
<td>100</td>
<td>0.50</td>
</tr>
<tr>
<td>Ogestrel</td>
<td>Watson</td>
<td>2 white pills</td>
<td>100</td>
<td>0.50</td>
</tr>
<tr>
<td>Ovral</td>
<td>Wyeth-Ayerst</td>
<td>2 white pills</td>
<td>100</td>
<td>0.50</td>
</tr>
<tr>
<td>Nordette</td>
<td>Wyeth-Ayerst</td>
<td>4 light-orange pills</td>
<td>120</td>
<td>0.60</td>
</tr>
</tbody>
</table>
Appendix A (Continued)

<table>
<thead>
<tr>
<th>Product</th>
<th>Manufacturer</th>
<th>Description</th>
<th>Dose</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portia</td>
<td>Barr/Duramed</td>
<td>4 pink pills</td>
<td>120</td>
<td>0.60</td>
</tr>
<tr>
<td>Seasonale</td>
<td>Barr/Duramed</td>
<td>4 pink pills</td>
<td>120</td>
<td>0.60</td>
</tr>
<tr>
<td>Seasonique</td>
<td>Barr/Duramed</td>
<td>4 light-blue-green pills</td>
<td>120</td>
<td>0.60</td>
</tr>
<tr>
<td>Tri-Levlen</td>
<td>Berlex</td>
<td>4 yellow pills</td>
<td>120</td>
<td>0.50</td>
</tr>
<tr>
<td>Triphasil</td>
<td>Wyeth-Ayerst</td>
<td>4 yellow pills</td>
<td>120</td>
<td>0.50</td>
</tr>
<tr>
<td>Trivora</td>
<td>Watson</td>
<td>4 pink pills</td>
<td>120</td>
<td>0.50</td>
</tr>
</tbody>
</table>

*Source: Princeton University and The Association of Reproductive Health Professionals: Not2late.com, The Emergency Contraception Website.*
Appendix B.

Package Insert for Plan B and RU-486

**Plan B® (Levonorgestrel) Tablets, 0.75 mg**

Rx only for women age 17 and younger

For women age 17 and younger, Plan B® is a prescription—only emergency contraceptive. Plan B® is intended to prevent pregnancy after known or suspected contraceptive failure or unprotected intercourse. Emergency contraceptive pills (like all oral contraceptives) do not protect against infection with HIV (the virus that causes AIDS) and other sexually transmitted diseases.

**DESCRIPTION**

Emergency contraceptive tablet. Each Plan B® tablet contains 0.75 mg of a single active steroid ingredient, levonorgestrel [18,19-Dinopregn-4-en-20-yn-3-one-13-ethyl-17-hydroxy-, (17α)-(-)], a totally synthetic progestogen. The inactive ingredients present are colloidal silicon dioxide, potato starch, gelatin, magnesium stearate, talc, corn starch, and lactose monohydrate. Levonorgestrel has a molecular weight of 312.45, and the following structural and molecular formulas:

![Structural formula of levonorgestrel]

**CLINICAL PHARMACOLOGY**

Emergency contraceptives are not effective if the woman is already pregnant. Plan B® is believed to act as an emergency contraceptive principally by preventing ovulation or fertilization (by altering tubal transport of sperm and/or ova). In addition, it may inhibit implantation (by altering the endometrium). It is not effective once the process of implantation has begun.

**Pharmacokinetics**

**Absorption:**

No specific investigation of the absolute bioavailability of Plan B® in humans has been conducted. However, literature indicates that levonorgestrel is rapidly and completely absorbed after oral administration (bioavailability about 100%) and is not subject to first pass metabolism. After a single dose of Plan B® (0.75 mg) administered to 16 women under fasting conditions, maximum serum concentrations of levonorgestrel are 14.1 ± 7.7 ng/mL (mean ± SD) at an average of 1.6 ± 0.7 hours. No formal study of the effect of food on the absorption of levonorgestrel has been undertaken.
Table 1  Pharmacokinetic Parameter Values Following Single Dose Administration of Plan B® (Levonorgestrel) Tablets 0.75 mg to Healthy Female Volunteers

<table>
<thead>
<tr>
<th>N</th>
<th>Mean (± S.D.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C&lt;sub&gt;max&lt;/sub&gt; (ng/mL)</td>
</tr>
<tr>
<td>16</td>
<td>14.1 ± 7.7</td>
</tr>
</tbody>
</table>

Distribution:
Levonorgestrel in serum is primarily protein bound. Approximately 50% is bound to albumin and 47.5% is bound to sex hormone binding globulin (SHBG).

Metabolism:
Following a single oral dosage, levonorgestrel does not appear to be extensively metabolized by the liver. The primary metabolites are 3α,5β- and 3α,5α-tetrahydrolevonorgestrel with 16β-hydroxylevonorgestrel also identified. Together, these account for less than 10% of parent plasma levels. Urinary metabolites hydroxylated at the 2α and 16β positions have also been identified. Small amounts of the metabolites are present in plasma as sulfate and glucuronide conjugates.

Excretion:
The elimination half-life of levonorgestrel following single dose administration as Plan B® (0.75 mg) is 24.4 ± 5.3 hours. Excretion following single dose administration as emergency contraception is unknown, but based on chronic, low-dose contraceptive use, levonorgestrel and its metabolites are primarily excreted in the urine, with smaller amounts recovered in the feces.

SPECIAL POPULATIONS

Geriatric
This product is not intended for use in geriatric (age 65 years or older) populations and pharmacokinetic data are not available for this population.

Pediatric
This product is not intended for use in pediatric (premenarcheal) populations, and pharmacokinetic data are not available for this population.

Race
No formal studies have evaluated the effect of race. However, clinical trials demonstrated a higher pregnancy rate in the Chinese population with both Plan B® and the Yuzpe regimen (another form of emergency contraception consisting of two doses of ethinyl estradiol 0.1 mg – levonorgestrel 0.5 mg). The reason for this apparent increase in the pregnancy rate of emergency contraceptives in Chinese women is unknown.
Appendix B (Continued)

Table 2: Percentage of women experiencing an unintended pregnancy during the first year of typical use and the first year of perfect use of contraception and the percentage continuing use at the end of the first year, United States.

<table>
<thead>
<tr>
<th>Method</th>
<th>% of Women Experiencing an Unintended Pregnancy within the First Year of Use</th>
<th>% of Women Continuing Use at One Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Typical Use</td>
<td>(1)</td>
</tr>
<tr>
<td>Chance</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>Spermicides</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Periodic abstinence</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Calendar</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Ovulation method</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Withdrawal</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Cap</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Parous woman</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Nulliparous women</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Sponge</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Parous woman</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Nulliparous women</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Diaphragm</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Condom</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>Female (Reality)</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Pill</td>
<td>Progestin only</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>Combined</td>
<td>0.1</td>
</tr>
<tr>
<td>IUD:</td>
<td>Progesterone T</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Copper T 380A</td>
<td>0.8</td>
</tr>
<tr>
<td></td>
<td>LNG 20</td>
<td>0.1</td>
</tr>
<tr>
<td></td>
<td>Depo Provera</td>
<td>0.3</td>
</tr>
<tr>
<td></td>
<td>Norplant and Norplant-1</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>Female sterilization</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>Male sterilization</td>
<td>0.15</td>
</tr>
</tbody>
</table>

Emergency Contraceptive Pills: Treatment initiated within 72 hours after unprotected intercourse reduces the risk of pregnancy by at least 75%. 8

Lactational Amenorrhea Method: LAM is a highly effective, temporary method of contraception. 13

Appendix B (Continued)

Among typical couples who initiate use of a method (not necessarily for the first time), the percentage who experience an unintended pregnancy during the first year if they do not stop use for any other reason.

Among couples who initiate use of a method (not necessarily for the first time) and who use it perfectly (both consistently and correctly), the percentage who experience an unintended pregnancy during the first year if they do not stop use for any other reason.

Among couples attempting to avoid pregnancy, the percentage who continue to use a method for one year.

The percentages of women becoming pregnant in columns (2) and (3) are based on data from populations where contraception is not used and from women who cease using contraception in order to become pregnant. Among such populations, about 89% become pregnant within one year. This estimate was lowered slightly (to 85%) to represent the percentage who would become pregnant within one year among women now relying on reversible methods of contraception if they abandoned contraception altogether.

Foams, creams, gels, vaginal suppositories and vaginal film.

Cervical mucus (ovulation) method supplemented by calendar in the pre-ovulatory and basal body temperature in the post-ovulatory phases.

With spermicidal cream or jelly.

Without spermicides.

The treatment schedule is one dose within 72 hours after unprotected intercourse and a second dose 12 hours after the first dose. The Food and Drug Administration has declared the following brands of oral contraceptives to be safe and effective for emergency contraception: Ovalt (1 dose is 2 white pills), Alesse (1 dose is 5 pink pills), Nordette or Levlen (1 dose is 2 light-orange pills), Lo/Ovral (1 dose is 4 white pills), Triphasil or Tri-Levlen (1 dose is 4 yellow pills).

However, to maintain effective protection against pregnancy, another method of contraception must be used as soon as menstruation resumes, the frequency or duration of breastfeeds is reduced, bottle feeds are introduced or the baby reaches six months of age.

CONTRAINDICATIONS

Progestin-only contraceptive pills (POPs) are used as a routine method of birth control over longer periods of time, and are contraindicated in some conditions. It is not known whether these same conditions apply to the Plan B® regimen consisting of the emergency use of two progestin pills. POPs however, are not recommended for use in the following conditions:

• Known or suspected pregnancy
• Hypersensitivity to any component of the product

WARNINGS

Plan B® is not recommended for routine use as a contraceptive.

Plan B® is not effective in terminating an existing pregnancy.

Effects on Menstrual bleeding patterns are often irregular among women using progestin-only oral contraceptives and in clinical studies of levonorgestrel for postcoital and emergency contraceptive use. Some women may experience spotting a few days after taking Plan B®. At the time of expected menses, approximately 75% of women using Plan B® had vaginal bleeding similar to their normal menses, 12-13% bled more than usual, and 12% bled less than usual. The majority of women (87%) had their next menstrual period at the expected time or within ± 7
Appendix B (Continued)

days, while 13% had a delay of more than 7 days beyond the anticipated onset of menses. If there is a delay in the onset of menses beyond 1 week, the possibility of pregnancy should be considered.

Ectopic Pregnancy
Ectopic pregnancies account for approximately 2% of reported pregnancies (19.7 per 1,000 reported pregnancies). Up to 10% of pregnancies reported in clinical studies of routine use of progestin-only contraceptives are ectopic. A history of ectopic pregnancy need not be considered a contraindication to use of this emergency contraceptive method. Health providers, however, should be alert to the possibility of an ectopic pregnancy in women who become pregnant or complain of lower abdominal pain after taking Plan B®.

PRECAUTIONS
Pregnancy
Many studies have found no effects on fetal development associated with long-term use of contraceptive doses of oral progestins (POPs). The few studies of infant growth and development that have been conducted with POPs have not demonstrated significant adverse effects.

STD/HIV
Plan B®, like progestin-only contraceptives, does not protect against HIV infection (AIDS) and other sexually transmitted diseases.

Physical Examination and Follow-up
A physical examination is not required prior to prescribing Plan B®. A follow-up physical or pelvic examination, however, is recommended if there is any doubt concerning the general health or pregnancy status of any woman after taking Plan B®.

Carbohydrate Metabolism
The effects of Plan B® on carbohydrate metabolism are unknown. Some users of progestin-only oral contraceptives (POPs) may experience slight deterioration in glucose tolerance, with increases in plasma insulin; however, women with diabetes mellitus who use POPs do not generally experience changes in their insulin requirements. Nonetheless, diabetic women should be monitored while taking Plan B®.

Drug Interactions
Theoretically, the effectiveness of low-dose progestin-only pills is reduced by hepatic enzyme-inducing drugs such as the anticonvulsants phenytoin, carbamazepine, and barbiturates, and the antituberculosis drug rifampin. No significant interaction has been found with broad-spectrum antibiotics. It is not known whether the efficacy of Plan B® would be affected by these or any other medications.

Nursing Mothers
Appendix B (Continued)

Small amounts of progestin pass into the breast milk in women taking progestin-only pills for long-term contraception resulting in steroid levels in infant plasma of 1-6% of the levels of maternal plasma. However, no adverse effects due to progestin-only pills have been found on breastfeeding performance, either in the quality or quantity of the milk, or on the health, growth or development of the infant.

Pediatric Use
Safety and efficacy of progestin-only pills have been established in women of reproductive age for long-term contraception. Safety and efficacy are expected to be the same for postpubertal adolescents under the age of 16 and for users 16 years and older. Use of Plan B® emergency contraception before menarche is not indicated.

Fertility Following Discontinuation
The limited available data indicate a rapid return of normal ovulation and fertility following discontinuation of progestin-only pills for emergency contraception and long-term contraception.

ADVERSE REACTIONS
The most common adverse events in the clinical trial for women receiving Plan B® included nausea (23%), abdominal pain (18%), fatigue (17%), headache (17%), and menstrual changes. The table below shows those adverse events that occurred in ≥5% of Plan B® users.

<table>
<thead>
<tr>
<th>Most Common Adverse Events</th>
<th>Plan B® Levonorgestrel N=977 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nausea</td>
<td>23.1</td>
</tr>
<tr>
<td>Abdominal Pain</td>
<td>17.6</td>
</tr>
<tr>
<td>Fatigue</td>
<td>16.9</td>
</tr>
<tr>
<td>Headache</td>
<td>16.8</td>
</tr>
<tr>
<td>Heavier Menstrual Bleeding</td>
<td>13.8</td>
</tr>
<tr>
<td>Lighter Menstrual Bleeding</td>
<td>12.3</td>
</tr>
<tr>
<td>Dizziness</td>
<td>11.2</td>
</tr>
<tr>
<td>Breast Tenderness</td>
<td>10.7</td>
</tr>
<tr>
<td>Other complaints</td>
<td>9.7</td>
</tr>
<tr>
<td>Vomiting</td>
<td>5.6</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>5.0</td>
</tr>
</tbody>
</table>

Plan B® demonstrated a superior safety profile over the Yuzpe regimen for the following adverse events:
  • Nausea: Occurred in 23% of women taking Plan B® (compared to 50% with Yuzpe)
  • Vomiting: Occurred in 6% of women taking Plan B® (compared to 19% with Yuzpe)
DRUG ABUSE AND DEPENDENCE
There is no information about dependence associated with the use of Plan B®.

OVERDOSAGE
There are no data on overdosage of Plan B®, although the common adverse event of nausea and its associated vomiting may be anticipated.

DOSAGE AND ADMINISTRATION
One tablet of Plan B® should be taken orally as soon as possible within 72 hours after unprotected intercourse. The second tablet should be taken 12 hours after the first dose. Efficacy is better if Plan B® is taken as directed as soon as possible after unprotected intercourse. Plan B® can be used at any time during the menstrual cycle.

The user should be instructed that if she vomits within one hour of taking either dose of medication she should contact her health care professional to discuss whether to repeat that dose.

HOW SUPPLIED
Plan B® (Levonorgestrel) Tablets, 0.75 mg are available for a single course of treatment in PVC/aluminum foil blister packages of two tablets each. The tablet is white, round and marked: INOR.

Available as:
NDC 51285-038-93

Store Plan B® tablets at controlled room temperature, 20° to 25°C (68° to 77°F); excursions permitted between 15° to 30°C (59° to 86°F) [See USP].

Mfg. by Gedeon Richter, Ltd., Budapest, Hungary
for Duramed Pharmaceuticals, Inc.
Subsidiary of Barr Pharmaceuticals, Inc.
Pomona, New York 10970
Phone: 1-800-330-1271 Website: www.go2planb.com
Revised August 2006
BR- 038 / 210006382503
take for pain.

If you are breastfeeding at the time you take Mifepristone and misoprostol, discuss with your provider if you should stop breastfeeding for a few days.

**What are the possible and reasonably likely side effects of Mifepristone?**

Cramping and bleeding are expected with this treatment. Usually, these symptoms mean that the treatment is working. But sometimes you can get cramping and bleeding and still be pregnant. This is why you must return to your provider on Day 3 and about Day 14. See “How should I take Mifepristone?” for more information on when to return to your provider. If you are not already bleeding after taking Mifepristone, you probably will begin to bleed once you take misoprostol, the medicine you take on Day 3. Bleeding or spotting can be expected for an average of 9–16 days and may last for up to 30 days. Your bleeding may be similar to, or greater than, a normal heavy period. You may see blood clots and tissue. This is an expected part of ending the pregnancy.

Other common symptoms of treatment include diarrhea, nausea, vomiting, headache, dizziness, back pain, and tiredness. These side effects lessen after Day 3 and are usually gone by Day 14. Your provider will tell you how to manage any pain or other side effects.

**When should I begin birth control?**

You can become pregnant again right after your pregnancy ends. If you do not want to become pregnant again, start using birth control as soon as your pregnancy ends or before you start having sexual intercourse again.

* * *

Medicines are sometimes prescribed for purposes other than those listed in a MEDICATION GUIDE. For more information, ask your provider for the information about Mifepristone that is written for health care professionals. Ask your provider if you have any questions.

This MEDICATION GUIDE has been approved by the U.S. Food and Drug Administration.

Rev 2: 7/19/05
PATIENT AGREEMENT
Mifepristone (mifepristone) Tablets

1. I have read the attached MEDICATION GUIDE for using Mifepristone and misoprostol to end my pregnancy.
2. I discussed the information with my health care provider (provider).
3. My provider answered all my questions and told me about the risks and benefits of using Mifepristone and misoprostol to end my pregnancy.
4. I believe I am no more than 49 days (7 weeks) pregnant.
5. I understand that I will take Mifepristone in my provider's office (Day 1).
6. I understand that I will take misoprostol in my provider's office two days after I take Mifepristone (Day 3).
7. My provider gave me advice on what to do if I develop heavy bleeding or need emergency care due to the treatment.
8. Bleeding and cramping do not mean that my pregnancy has ended. Therefore, I must return to my provider's office in about 2 weeks (about Day 14) after I take Mifepristone to be sure that my pregnancy has ended and that I am well.
9. I know that, in some cases, the treatment will not work. This happens in about 5 to 8 women out of 100 who use this treatment.
10. I understand that if my pregnancy continues after any part of the treatment, there is a chance that there may be birth defects. If my pregnancy continues after treatment with Mifepristone and misoprostol, I will talk with my provider about my choices, which may include a surgical procedure to end my pregnancy.
11. I understand that if the medicines I take do not end my pregnancy and I decide to have a surgical procedure to end my pregnancy, or if I need a surgical procedure to stop bleeding, my provider will do the procedure or refer me to another provider who will. I have that provider's name, address, and phone number.
12. I have my provider's name, address, and phone number and know how to contact them if I have any questions or concerns.
13. I have decided to take Mifepristone and misoprostol to end my pregnancy and will follow my provider’s advice about when to take each drug and what to do in an emergency.
14. I will do the following:
   - contact my provider right away if in the days after treatment I have a fever of 100.4°F or higher that lasts for more than 4 hours or severe abdominal pain.
   - contact my provider right away if I have heavy bleeding (soaking through two thick full-size sanitary pads per hour for two consecutive hours).
   - contact my provider right away if I have abdominal pain or discomfort, or I am “feeling sick”, including weakness, nausea, vomiting or diarrhea, more than 24 hours after taking misoprostol.
   - take the MEDICATION GUIDE with me when I visit an emergency room or a provider who did not give me Mifepristone, so that they will understand that I am having a medical abortion with Mifepristone.
   - return to my provider's office in 2 days (Day 3) to check if my pregnancy has ended. My provider will give me misoprostol if I am still pregnant.
   - return to my provider's office about 14 days after beginning treatment to be sure that my pregnancy has ended and that I am well.

Patient Signature: ______________________________________
Patient Name (print): _____________________________________
Date: ____________________________________________

The patient signed the PATIENT AGREEMENT in my presence after I counseled her and answered all her questions. I have given her the MEDICATION GUIDE for mifepristone.

Provider's Signature: __________________________________
Name of Provider (print): ________________________________
Appendix C.
Figure 9. History of Emergency Contraception

1960s

Advent of BC pill. Packs of pills cut up to be used as EC

| 1996 |
| FDA approves 6 brands of OCs to be used as EC |
| 1997 |
| Preven, the 1st dedicated product for EC was created |
| 1998 |
| Petition filed in support of OTC EC |
| 1999 |
| FDA panel supports OTC access of EC |
| 2001 |
| FDA struck down recommendation from its committee |
| 2003 |
| FDA approves EC OTC for women 18 & over |
| 2004 |
| FDA approves EC OTC for women 18 & over |
| 2006 |

Nat’l campaign created by Princeton Univ. & RHTP
Washington State begins CDTA program with pharmacists
Plan B, the 2nd dedicated product for EC was created
2nd petition filed in support of OTC EC
Makers of Plan B submit new application for OTC EC for women 16 yrs. & older
# Appendix D

<table>
<thead>
<tr>
<th>Author</th>
<th>Study Description</th>
<th>Major Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abbott et al (2004)</td>
<td>Survey (self-administered paper-based) of 158 women at an inner-city ED in the US</td>
<td>77% of women had heard of EC, although only half of those knew how to use it. Of those who had heard of it, 26% were not aware of the correct timing, 24% were not aware that it was available in the U.S., and 45% were not aware that a prescription was required for use. 51% of women reported that they would think about using EC if they needed it; however 17% reported moral or religious objections to its use.</td>
</tr>
<tr>
<td>Aiken et al (2005)</td>
<td>Survey (interview) of 133 women in 1996 and 139 women in 2002 from a hospital-based clinic and drug treatment center in the US</td>
<td>Between 1996 and 2002, the percentage of clients who had ever heard of EC grew from 44% in 1996 to 73% in 2002 and comprehension of timing for use also increased from 20% in 1996 to 51% in 2002. Over half of women thought that there may be a future need to use EC and of these, 95% reported that they would use it if needed.</td>
</tr>
<tr>
<td>Aziken et al (2003)</td>
<td>Survey (self-administered paper-based) of 880 female students attending a University in Nigeria</td>
<td>58% of students were familiar with EC but only 18% knew the 72 hour protocol for use and 49% believed that the pills needed to be taken within 24 hours of unprotected intercourse.</td>
</tr>
<tr>
<td>Babaee et al (2003)</td>
<td>Survey (interview) of 250 married women (ages 15-48) in a health center in Iran</td>
<td>8% of women knew about EC and 77% of women reported that they would be willing to use it in the future.</td>
</tr>
<tr>
<td>Chuang &amp; Freund (2005)</td>
<td>Survey (self-administered paper-based) of 188 women (ages 18-44) in a Boston neighborhood in the US</td>
<td>82% of women in a Boston community had heard of EC but only about half of those women knew how it worked.</td>
</tr>
<tr>
<td>Corbett et al (2005)</td>
<td>Survey (25-item self-administered paper-based questionnaire) of 97 college students between 18-21 years old in the US</td>
<td>Almost half of participants thought that EC was the same as RU-486 and of women who reported to be less likely to choose EC, 100% said that they would feel judged or embarrassed if they had to ask for it.</td>
</tr>
<tr>
<td>Harper &amp; Ellertson (1995)</td>
<td>Survey (telephone) of 550 undergraduate and graduate students in the US</td>
<td>52% of respondents did not know the difference between EC and RU-486. Democrats and people who reported to be not religious had more favorable attitudes towards EC than Republicans or highly religious individuals. As knowledge about EC went up, so did the positive attitudes about EC.</td>
</tr>
<tr>
<td>Jackson et al (2000)</td>
<td>Survey (self-administered paper-based) of 371 postpartum women from an inner-city public hospital in the US</td>
<td>36% of women had heard of EC and only 7% understood the appropriate timing for use. Two-thirds of these women reported a willingness to use EC in the future.</td>
</tr>
<tr>
<td>Larsson et al (2004)</td>
<td>Survey (mail questionnaire) of 800 women attending a family planning clinic in Sweden</td>
<td>98% of women were aware of EC but 38% were not aware its effectiveness when taken on the first day and 59% were not aware its effectiveness when taken on the third day. 90% agreed that access to EC is positive.</td>
</tr>
<tr>
<td>Author</td>
<td>Study Design</td>
<td>Sample Description</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------------------------</td>
<td>------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Mathew &amp; Urquhart (2005)</td>
<td>Survey (self-administered paper-based) of 78 women attending an abortion clinic in the UK</td>
<td>78% of women were familiar with EC and 90% of women said they would consider using EC in the future</td>
</tr>
<tr>
<td>Nguyen et al (2003)</td>
<td>Survey (self-administered paper-based) of 365 women who requested EC in Switzerland</td>
<td>Knowledge of EC was satisfactory but 42% thought it had to be taken within 24 hours of unprotected intercourse and 13% thought that EC was 100% effective in preventing pregnancy</td>
</tr>
<tr>
<td>Ottesen et al (2002)</td>
<td>Nationally representative population-based study (n=4283) in Switzerland surveying (computerized questionnaire) 16- to 20-year-olds</td>
<td>89% of sexually active girls and 75% of sexually active boys had heard of EC</td>
</tr>
<tr>
<td>Romo et al (2004)</td>
<td>Survey (self-administered paper-based) of 297 Latina women ages 18-43 from a clinic in the US</td>
<td>17% of Spanish-speaking women and 41% of English-speaking Latina women had heard of EC and 25% believed that EC would end an existing pregnancy. Only half of the women who have heard of EC said that they would be willing to use it in the future and those who did not comprehend the action of EC were even less likely to say that they would use it in the future</td>
</tr>
<tr>
<td>Tripathi et al (2003)</td>
<td>Survey (self-administered paper-based questionnaire) of 500 patients seeking abortion services and 110 college students in India</td>
<td>none of the clients surveyed were familiar w/ EC</td>
</tr>
</tbody>
</table>

EC, Emergency contraception; ED, Emergency department
Table 52. Emergency contraception studies in a comparative context: Provider knowledge, attitudes, & practice.

<table>
<thead>
<tr>
<th>Author</th>
<th>Study Description</th>
<th>Major Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beckman et al (2001)</td>
<td>Survey (self-administered paper-based) of 102 providers (physicians, registered nurse practitioners, certified nurse midwives, &amp; physician assistants) in the U.S.</td>
<td>At baseline, one-third of the sample did not know the correct timing for EC &amp; only 7% of providers reported prescribing EC once a month. At follow-up, knowledge about EC &amp; prescribing frequency of EC significantly increased. However, providers still had limited knowledge side effects and modes of action. Attitudes about EC showed little change.</td>
</tr>
<tr>
<td>Chuan et al (2004)</td>
<td>Survey (mail survey) of 282 providers (OB-GYN, family practitioners, &amp; general internists) in the U.S.</td>
<td>94% of Ob-gins, 76% of family practitioners, &amp; 63% of general internists ever prescribed EC. Being female was a positive predictor &amp; being Catholic was a negative predictor for prescribing EC. 75% of the physicians reported infrequent prescribing of EC (less than five times a year), regardless of their specialty.</td>
</tr>
<tr>
<td>Delbanco et al (1998)</td>
<td>Survey (telephone) of 754 women's health professionals (Ob-gyn, family physicians, nurse practitioners, &amp; physician assistants)</td>
<td>Although the number of physicians that prescribed EC once in the last year increased, very few commonly prescribe EC, regardless of specialty.</td>
</tr>
<tr>
<td>Gold et al (1997)</td>
<td>Survey (interview) of 167 physicians with expertise in adolescent health in the U.S.</td>
<td>Attitude variables are predictors of failure to prescribe EC.</td>
</tr>
<tr>
<td>Golden et al (2001)</td>
<td>Survey (mail survey) of 233 Pediatricians in the U.S.</td>
<td>72.9% of respondents could not identify the FDA approved methods for EC and roughly 72% could not identify the correct timing for the drug. 68% of respondents felt uncomfortable prescribing EC, 17% did not prescribe due to perceived teratogenic effects &amp; 12% did not prescribe due to moral or religious reasons. 22% agreed that EC provision encourages adolescent risk taking behavior &amp; 52.4% said they would place restrictions on how many times they would dispense the drug to a patient.</td>
</tr>
<tr>
<td>Onwuahafua et al (2005)</td>
<td>Survey (self-administered paper-based) of 232 community health extension workers in Nigeria</td>
<td>EC was not known about</td>
</tr>
<tr>
<td>Sable et al (2006)</td>
<td>Survey (paper-based) of 96 faculty physicians from one Southern &amp; three Midwestern Universities</td>
<td>42% intended to prescribe EC for teens but 65-77% intended for other specified groups. High intention to prescribe was significantly associated with positive attitudes but knowledge was not.</td>
</tr>
<tr>
<td>Sevil et al (2006)</td>
<td>Survey (interviews &amp; paper-based questionnaire) of 72 providers (general practitioners, nurses, &amp; midwives) in Turkey</td>
<td>Almost 1 in 10 providers were unfamiliar with the words 'emergency contraception'</td>
</tr>
<tr>
<td>Study</td>
<td>Methodology</td>
<td>Findings</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>------------------------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Sills et al (2000)</td>
<td>Survey (mail survey) of 121</td>
<td>All but 1 doctor had heard of EC but about half did not know the timing of EC or that it was FDA approved. Knowledge, not attitudes, are significant predictors of EC prescribing.</td>
</tr>
<tr>
<td></td>
<td>Pediatricians in the U.S.</td>
<td></td>
</tr>
<tr>
<td>Tripathi et al (2003)</td>
<td>Survey (self-administered paper-based) of 405 health care workers in India</td>
<td>84% of gynecologists &amp; 41% of general practitioners were vaguely familiar with EC though of those who had knowledge, most were unsure of how to prescribe it. 51% of gynecologists &amp; 17% of practitioners reported ever prescribing it</td>
</tr>
<tr>
<td>Uzuner et al (2005)</td>
<td>Survey (interviews) of 180 family planning providers in Turkey</td>
<td>Only half of providers knew the correct timing and dose interval of EC. 39.4% of respondents believed that EC causes abortion, 31.1% thought that it was harmful for the fetus, 78.9% incorrectly thought that pill use may increase unprotected intercourse &amp; that use will lead to men giving up on condom use (75%).</td>
</tr>
<tr>
<td>Wallace et al (2004)</td>
<td>Survey (self-administered paper-based) of 78 providers (family physicians and nurse providers)</td>
<td>96% reported that they were knowledgeable on the indications &amp; 78% reported that they understood the protocols for prescribing EC although knowledge inaccuracies were found between perceived and actual knowledge. 44% inaccurately thought that EC was an abortifacient. 90% thought that EC was an appropriate topic of discussion at women’s exams and felt that the benefits of EC outweighed the risks. 59% of providers said they would restrict how many times they prescribed EC, 14% thought that EC use would discourage regular contraceptive use, 16% were uncomfortable prescribing EC for religious or ethical reasons, &amp; 7% said that they would not prescribe it under any circumstances</td>
</tr>
<tr>
<td>Webb et al (1993)</td>
<td>National study of British health authorities</td>
<td>The majority of physicians surveyed report that they prescribe EC a few times per week. 74% reported that they have prescribed EC in the past, with an average of 3.2 times in the past year</td>
</tr>
</tbody>
</table>

EC, Emergency contraception; ED, Emergency department; FDA, Food and Drug Administration OB-GYN, Obstetricians/gynecologists
### Table 53. Emergency contraception studies in a comparative context: Pharmacists’ knowledge, attitudes, and dispensing practices.

<table>
<thead>
<tr>
<th>Author</th>
<th>Study Description</th>
<th>Major Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aneblo et al</td>
<td>Survey (mail-based) of pharmacy staff (n=237) &amp; nurse-midwives (n=163) in Sweden</td>
<td>Both study groups had positive attitudes towards EC and towards the OTC administration of EC; however nurse midwives demonstrated more favorable attitudes than the pharmacist group. In addition, verbal information and counseling to clients on issues of EC was more commonly reported by the nurse-midwife group than by the pharmacist group and both groups reported that they wanted more collaboration between health care providers.</td>
</tr>
<tr>
<td>Bennett et al</td>
<td>Survey (employed mystery callers) of 315 pharmacists in the U.S.</td>
<td>Knowledge about &amp; access to EC was limited. 30% of pharmacists did not provide the correct timing required for EC administration: 23% thought it needed to be taken within 24 hours &amp; 7% thought it needed to be taken within 48 hours. Also, 13% of the pharmacists said that EC would cause an abortion. 65% (n=201) of pharmacists reported that they would not be able to fill a prescription of EC that day.</td>
</tr>
<tr>
<td>Borrego et al</td>
<td>Survey (mail-based) of 523 pharmacists in the U.S.</td>
<td>Pharmacists from New Mexico had positive attitudes and beliefs about prescribing EC but their knowledge was average. 40% of the sample had an interest in becoming certified to prescribe EC in their state-approved prescribing training program. Of those pharmacists who wanted to be certified, they were more likely to be male, non-Hispanic, non-Christian, to report liberal or moderate political views, and to say that they had employer approval, time, and privacy at their pharmacy to prescribe EC.</td>
</tr>
<tr>
<td>Conard et al</td>
<td>Survey (mail-based) of 948 pharmacists in the U.S.</td>
<td>48% of the pharmacists surveyed did not dispense EC. Pharmacists under 45 years of age were more likely to report dispensing EC; however no differences were found for sex. Of the 59% of pharmacists who have dispensed EC to adolescents, 83% said that they felt uncomfortable doing so. There were no differences in feelings of comfort based on age or sex.</td>
</tr>
<tr>
<td>Draut</td>
<td>Survey (telephone) of 100 pharmacists in the U.S.</td>
<td>Only 3 out of 100 pharmacists surveyed provided correct information about EC and 38 (38%) pharmacists did not know it was available in the U.S.</td>
</tr>
<tr>
<td>Van Riper et al</td>
<td>Survey (mail-based) of 501 pharmacists in the U.S.</td>
<td>Only 54% of pharmacists worked in pharmacies that carried EC. Of those, 67% had dispensed EC in 2003 but 24% reported that they were not comfortable providing counseling about the medication. 37% were unaware that the medication is similar in its mechanism to oral contraceptives, 74% either incorrectly agreed or were uncertain about whether EC causes birth defects when administered to pregnant women &amp; 85% of respondents either incorrectly agreed or were uncertain about whether repeated use of EC poses health risks. Only 5% of the sample correctly answered all five of the knowledge questions on the survey.</td>
</tr>
</tbody>
</table>

EC, Emergency contraception
Appendix G.

Pre-notice to Academic Deans*

Date:  
To: Janedoe@mail.edu  
From: Alice Richman arichman@hsc.usf.edu  
Subject: Academic Dean Survey

Hello and greetings. As part of my dissertation research, I am interested in learning about the teaching of emergency contraception in our pharmacy school classrooms. I am committed to identifying which classes, if any, within pharmacy school curricula provides instruction on emergency contraception. This information is being sought as we currently have little information on what classes cover this information or the extent of this instruction. In order to reach these aims, I am asking you to help me gather this information.

Within the next couple of days you will be receiving a brief three question survey from the University of South Florida from this same email address. We would greatly appreciate if you could take a few moments to complete it. By doing so you will help ensure that we have the best information possible. Please be assured that your answers are confidential and only group data will be reported.

If you have questions, feel free to contact Alice Richman or Ellen Daley at the University of South Florida at the contact information provided below.

Thank you in advance for your cooperation.

Sincerely,

Alice R. Richman     Ellen Daley, Ph.D.
USF College of Public Health     USF College of Public Health
Phone: (813) 732-1903     Phone: (814) 974-8518
Email: arichman@hsc.usf.edu     Email: edaley@hsc.usf.edu

*The template for this letter was taken from Dillman (2000).
Appendix H.

Academic Dean Informed Consent Form

Researchers at the University of South Florida (USF) study many topics. We want to learn about the instruction of emergency contraception in our pharmacy school classrooms.

Title of research study: The Role of Pharmacists and Emergency Contraception: An Assessment of Pharmacy School Curricula in the U.S. and the Knowledge, Attitudes, and Dispensing Practices of Florida Pharmacists.

Person in charge of study: Alice R. Richman

Study staff who can act on behalf of the person in charge: Dr. Ellen Daley

Where the study will be done: In Florida

The purpose of this study is to review pharmacy school curricula in the U.S. for course content related to emergency contraception. All Academic Deans from the 91 accredited school of pharmacy in the U.S. will be sent a three question web-based survey that will ask questions about their program curricula. In addition, Academic Deans will be asked to provide course syllabi where applicable.

During this study, you will be asked to complete a three question survey pertaining to the curricula and course content concerning emergency contraception at your institution. You may also be asked to provide electronic copies of course syllabi. The survey should not take more than 10 minutes to complete. If you decide not to take part in this study, that is okay.

It will not cost you anything to take part in the study. Although there will not be any immediate benefit to you, your participation in this study will be helpful in understanding pharmacy school curricula and course content related to emergency contraception and will advance the state of knowledge in this area. Your participation is greatly appreciated. There are no known risks to those who take part in this study.

We may publish what we find out from this study. If we do, we will not use your name or anything else that would let people know who you are.

If you have any questions about this study, call Alice Richman at (813) 732-1903 or Ellen Daley at (813) 974-8518. If you have questions about your rights as a person who is taking part in a study, call USF Research Compliance at (813) 974-5638.
Appendix I.

Academic Dean Cover Letter & Survey—Curricula Review

Date:  
To: JaneDoe@mail.edu  
From: Alice Richman arichman@hsc.usf.edu  
Subject: Academic Dean Survey

Below you will find the brief three question survey on how emergency contraception is being taught at pharmacy schools in the U.S. which Alice Richman notified you about via email a few days ago. We found that there is limited information on the current instruction on emergency contraception at pharmacy schools, and thus we are asking for your help via this brief survey. Please take a few minutes to answer the following questions. Your answers will be kept confidential and data will only be reported in aggregate form.

Definition of Emergency Contraception: Emergency contraception is a type of hormonal contraception, containing high doses of estrogen and progestin or progestin only. This medication is 75%-89% effective in preventing pregnancies when taken within 120 hours after sexual intercourse.

1) Does your School of Pharmacy offer **required** courses that provide content on emergency contraception? Content can include lectures, course readings, course objectives etc..
   
   No _____  
   Not sure _____  
   Yes _____  
   If you answered Yes, please list the titles of courses and attach syllabi or link to syllabi:
   
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________

2) Does your School of Pharmacy offer **elective** classes that provide content on emergency contraception? Content can include lectures, course readings, course objectives etc..
   
   No _____
Appendix I (Continued)

Not sure _____
Yes _____
If you answered Yes, please list the titles of courses and attach syllabi or link to syllabi:

______________________________________________________________
______________________________________________________________
______________________________________________________________
______________________________________________________________

3) In your opinion, do you believe that School of Pharmacy curricula in the U.S. should include content material on emergency contraception (including pharmacology, legal and ethical issues, and the continual controversy that surrounds the medication)?

Yes ____ Please explain ________________________________________

No ____ Please explain ________________________________________

Important: If you answered yes to either question 1 or 2, would you kindly attach an electronic copy of the course syllabi listed to this email and forward them to Alice Richman at arichman@hsc.usf.edu. If you do not have an electronic copy of the syllabi of your courses, please tell me from where I may procure the syllabi (e.g., from a specific web site, URL).

Thank you for your time and attention. All identifying information will be kept confidential. If you have questions about the study or would like a copy of the study’s findings, please contact Alice Richman at arichman@hsc.usf.edu or call (813) 732-1903.
Appendix J.

Thank you/Reminder Email to Academic Deans*

Date:
To: JaneDoe@mail.edu
From: Alice Richman arichman@hsc.usf.edu
Subject: Academic Dean Survey

About a week ago we sent you a survey via email. We are asking Academic Deans of the schools of pharmacy in the U.S. about the curricula that addresses instruction on emergency contraception. As of today, we have not received a completed survey from you. I realize that we all have busy schedules, however we have contacted you and others now in hopes of obtaining the insights that only Academic Deans, like yourself, can provide. As we mentioned before, answers are confidential and will be combined with others before disseminating the results. In case the previous questionnaire has been deleted from your email account, we have included it again and hope you will respond.

Should you have any questions or concerns, feel free to contact me (Alice Richman) or Ellen Daley at the contact information provided below. Thank you for your cooperation.

Alice R. Richman             Ellen Daley, Ph.D.
USF College of Public Health     USF College of Public Health
Phone: (813) 732-1903          Phone: (814) 974-8518
Email: arichman@hsc.usf.edu      Email: edaley@hsc.usf.edu

(Link to Survey Inserted Here)

*The template for this letter was taken from Dillman (2000).
Appendix K: Sample Recruitment Flyer

Are you a 3\textsuperscript{rd} or 4\textsuperscript{th} year Pharm D. student in Pharmacy School?

Then we need YOU to be part of a focus group of 3\textsuperscript{rd} & 4\textsuperscript{th} year Pharm D. students @ the University of Florida.

Who is eligible?
- 3\textsuperscript{rd} or 4\textsuperscript{th} year Pharm D. students.
- English speaking individuals.

What will I have to do?
- Participate in a focus group discussion with 7 other students.
- Discuss your perceptions of emergency contraception course instruction and projected dispensing practices.

How much time will this take?
- Participation will take approximately 1 hour.

Do I get anything for my time?
- Students will receive a $10 gift certificate to Starbucks.
- Help add to the scientific body of knowledge.

When will the group meet?
- Wednesday, August 29\textsuperscript{th} at 10am Room 115A.

How can I sign up?
E-mail Alice Richman at arichman@health.usf.edu or call at (813) 732-1903.
Appendix L.

Focus Group Informed Consent Form

Informed Consent for an Adult

Social and Behavioral Sciences
University of South Florida

Information for People Who Take Part in Research Studies

Researchers at the University of South Florida (USF) study many topics. We want to learn more about pharmacy students’ perception of emergency contraception course content taught at accredited schools of pharmacy. To do this, we need the help of people who agree to take part in a research study.

Title of research study: The Relationship among Emergency Contraception Knowledge, Attitudes, and Dispensing Practices of Florida Pharmacists and Pharmacy School Curricula in the U.S.

Person in charge of study: Alice R. Richman

Study staff who can act on behalf of the person in charge: Dr. Ellen Daley

Where the study will be done: Focus groups will be held at all four accredited Schools of Pharmacy in Florida: Florida Agricultural and Mechanical University, Nova Southeastern University, Palm Beach Atlantic University, and University of Florida

Should you take part in this study?

This form tells you about this research study. You can decide if you want to take part in it. You do not have to take part. Reading this form can help you decide.

Before you decide:

- Read this form.
- Talk about this study with the person in charge of the study or the person explaining the study. You can have someone with you when you talk about the study.
- Find out what the study is about.

You can ask questions:

- You may have questions this form does not answer. If you do, ask the person in charge of the study or study staff as you go along.
- You don’t have to guess at things you don’t understand. Ask the people doing the study to explain things in a way you can understand.

After you read this form, you can:

- Take your time to think about it.
- Have a friend or family member read it.
- Talk it over with someone you trust.
Appendix L (Continued)

It’s up to you. If you choose to be in the study, then you can sign the form. If you do not want to take part in this study, do not sign the form.

Why is this research being done?
The purpose of this study is to find out what and how emergency contraception course content is taught at accredited schools of pharmacy as perceived by third or fourth year pharmacy students. In reaching this aim, you are being asked to participate in an hour long focus group where you will be asked questions about the pharmacy school instruction and course content related to emergency contraception. The focus group discussions will be tape recorded but no identifying information will be used or linked to the study results.

Why are you being asked to take part?
We are asking you to take part in this study because you are a third or fourth year Pharm.D. student enrolled at an accredited school of pharmacy. We want to find out more about what type of emergency contraception instruction you were taught in your pharmacy school classes.

How long will you be asked to stay in the study?
You will be asked to spend about 1.5 hours in this study. The focus group itself will run about one hour. The other thirty minutes will be spent at the beginning of the focus group acquainting each other and explaining the process of the focus group discussion.

How often will you need to come for study visits?
A study visit is one you have with the person in charge of the study or study staff. You will need to come for one study visit in all and that is today for the focus group discussion.

- Questions will be asked pertaining to course instruction on emergency contraception in your pharmacy school classes such as any lectures, course assignments, and discussions that you may have had in class. Questions will inquire about what you learned, what and how you were taught, and questions will also ask about your projected dispensing practices and perceptions of emergency contraception.

What other choices do you have if you decide not to take part?
If you decide not to take part in this study, that is okay. There are no other choices, such as becoming involved in another focus group, that are offered by this study.

How do you get started?
If you decide to take part in this study, you will need to sign this consent form. After consenting, you will be able to participate in the focus group.
Appendix L (Continued)

**What will happen during this study?**
During the study, you will be asked questions pertaining to your course instruction at your institution in a group setting.

**Here is what you will need to do during this study**
In order to take part in the study, all you have to do is participate in the group discussion that will last about an hour.

**Will you be paid for taking part in this study?**
We will pay you for the time you volunteer in this study in the form of a $10 gift card to Starbucks. You will be given the gift card prior to your participation in the focus group.

**What will it cost you to take part in this study?**
It will not cost you anything to take part in the study.

**What are the potential benefits if you take part in this study?**
Although there will not be any immediate benefit to you, your participation in this study will be helpful in understanding pharmacy school curricula and course content related to emergency contraception and will advance the state of knowledge in this area. Your participation is greatly appreciated.

**What are the risks if you take part in this study?**
There are no known risks to those who take part in this study.

**What will we do to keep your study records private?**
Federal law requires us to keep your study records private. All identifying information will be kept confidential and will not be disseminated with the research findings. Your name or school affiliation will not be used or linked to the study results. However, certain people may need to see your study records. By law, anyone who looks at your records must keep them confidential. The only people who will be allowed to see these records are:

- The study staff.
- People who make sure that we are doing the study in the right way. They also make sure that we protect your rights and safety:
  - The USF Institutional Review Board (IRB)
  - The United States Department of Health and Human Services (DHHS)

We may publish what we find out from this study. If we do, we will not use your name or anything else that would let people know who you are.
Appendix L (Continued)

What happens if you decide not to take part in this study?
You should only take part in this study if you want to take part.

If you decide not to take part:
• You won’t be in trouble or lose any rights you normally have.

What if you join the study and then later decide you want to stop?
If you decide you want to stop taking part in the study, tell the study staff as soon as you can.
• We will tell you how to stop safely. We will tell you if there are any dangers if you stop suddenly.

Are there reasons we might take you out of the study later on?
Even if you want to stay in the study, there may be reasons we will need to take you out of it. You may be taken out of this study:
• If we find out it is not safe for you to stay in the study. For example, your health may get worse.
• If you act in an inappropriate manner in the focus group discussions.

You can get the answers to your questions.
If you have any questions about this study, call Alice Richman at (813) 732-1903. If you have questions about your rights as a person who is taking part in a study, call USF Research Compliance at (813) 974-5638.

Consent to Take Part in this Research Study
It’s up to you. You can decide if you want to take part in this study.

I freely give my consent to take part in this study. I understand that this is research. I have received a copy of this consent form.

________________________ ________________________ ___________
Signature Printed Name Date
of Person taking part in study of Person taking part in study

Statement of Person Obtaining Informed Consent
I have carefully explained to the person taking part in the study what he or she can expect.
The person who is giving consent to take part in this study
• Understands the language that is used.

Reads well enough to understand this form. Or is able to hear and understand
Appendix L (Continued)

- when the form is read to him or her.
- Does not have any problems that could make it hard to understand what it means to take part in this study.
- Is not taking drugs that make it hard to understand what is being explained.

To the best of my knowledge, when this person signs this form, he or she understands:

- What the study is about.
- What needs to be done.
- What the potential benefits might be.
- What the known risks might be.
- That taking part in the study is voluntary.

______________________________________________  __________________________  __________
Signature of Investigator  Printed Name of Investigator  Date
or authorized research investigator designated by the Principal Investigator
Appendix M.

Final Pharmacist Pre-Notice Letter*

Date
Inside Address

A few days from now you will receive in the mail a request to fill out a brief questionnaire for an important research project being conducted by the University of South Florida.

It concerns the perceptions and experiences of pharmacists in relation to dispensing the medication emergency contraception.

I am writing in advance because we have found many people like to know ahead of time that they will be contacted. The study is an important one that will help add to the body of knowledge on pharmacists and dispensing practices. The study is also anonymous as your name, pharmacy, or affiliations will be kept confidential and will not be linked to the study results.

Thank you for your time and consideration. It’s only with the generous help of people like you that our research can be successful.

Sincerely,

Alice R. Richman
University of South Florida
College of Public Health

*The template for this letter was taken from Dillman (2000).
Appendix N.

Final Pharmacist Informed Consent Form

Researchers at the University of South Florida (USF) study many topics. In this study, we want to learn more about pharmacists’ perceptions and experiences and how they may or may not impact emergency contraception dispensing practices.

Title of research study: The Role of Pharmacists and Emergency Contraception: An Assessment of Pharmacy School Curricula in the U.S. and the Knowledge, Attitudes, and Dispensing Practices of Florida Pharmacists.

Person in charge of study: Alice R. Richman, MPH, Ph.D. Candidate

Study staff who can act on behalf of the person in charge: Ellen Daley, Ph.D., MPH

Where the study will be done: In the State of Florida

The purpose of this study is to understand pharmacists’ perceptions and experiences surrounding emergency contraception and to understand how these perceptions are related to dispensing practices. This study involves sending a questionnaire to pharmacists registered with the Florida Board of Pharmacy.

Questions on the survey inquire about issues of perceptions about emergency contraception and your dispensing practices of the medication. Questions also request some demographic information; however any identifying information including your name or pharmacy will be kept confidential and all data will be de-identified meaning it will be rendered anonymous and will not be linked to the study results. The survey should take you about 10 minutes to complete.

You may decline to take part in this study. You will neither be compensated nor have to pay anything to participate in this study. Although your participation will not accrue any immediate benefit to you, your participation in this study will be helpful in understanding pharmacists’ perceptions and dispensing practices related to emergency contraception and will advance the state of knowledge in this area. Your participation is greatly appreciated. There are no known risks to those who take part in this study.

We may publish the results and findings from this study. If we do, we will not use your name or anything else that would let people know who you are.

Authorized research personnel, employees of the Department of Health and Human Services, and the USF Institutional Review Board and its staff, and any other individuals acting on behalf of USF, may inspect the records from this research project.

If you have any questions about this study, call Alice R. Richman at (813) 732-1903 or Ellen Daley at (813) 974-8518.

If you have questions about your rights as a person who is taking part in a study, call USF Office of Research Compliance at (813) 974-5638.

Thank you so much for your time and participation.
Appendix O.

*Final Cover Letter to Pharmacists*

Inside Address

I am writing to ask your help in a study of pharmacists being conducted by researchers from the University of South Florida (USF). This study aims to understand Florida pharmacists’ perceptions of emergency contraception and their dispensing practices.

It’s my understanding that you are a pharmacist practicing in Florida. We are contacting a random sample of pharmacists in Florida and are requesting that they help us by completing a brief questionnaire on their perceptions and dispensing practices concerning emergency contraception.

Results from the survey will be used to understand pharmacists’ perceptions and dispensing practices related to emergency contraception and will advance the state of knowledge in this area. Your participation is greatly appreciated.

Your answers are completely anonymous and no identifying information about you will be collected. This survey is voluntary. However, you can help us very much by taking a few minutes to share your perceptions about emergency contraception with us.

There is a paper survey attached in this packet for you to fill out and return in the enclosed and stamped envelope.

If you have any questions or comments about this study, we would be happy to talk with you. Feel free to call Alice R. Richman at (813) 732-1903 or contact via email at arichman@health.usf.edu.

Thank you very much for helping with this important study.

Sincerely,

Alice R. Richman
University of South Florida

*The template for this letter was taken from Dillman (2000).*
Appendix P.

Final Pharmacist Survey

Thank you for taking the time to complete this survey. Your opinions and responses are important to us. All responses will remain anonymous. Please complete this survey and return it in the enclosed self-addressed and stamped envelope.

In order to complete this survey, please circle the number that corresponds to the answer you choose or if there is no number listed, please write in your answer.

First, I’d like to ask you some questions about your practice and workplace.

1. How many years have you been a practicing registered pharmacist?  
   ____ year/years

2. The type of pharmacy where you work could be best described as (if you have more than one job, please circle the number that corresponds to your primary type of pharmacy)  
   ____ 1 Community -- Chain  
   ____ 2 Community -- Independent  
   ____ 3 Hospital  
   ____ 4 Government (e.g., US Public Health Service, military)  
   ____ 5 Indian Health Service  
   ____ 6 Not currently working in a pharmacy  
   ____ 7 Other: Please specify _______________________

3. What is your job title? 
   ____ 1 Staff Pharmacist  
   ____ 2 Pharmacy Manager  
   ____ 3 Other: Please specify _______________________

4. What is your current employment status? 
   ____ 1 Full-time  
   ____ 2 Part-time  
   ____ 3 Retired

5. Does your pharmacy stock any of the following products? 
   Condoms  ____ 1 Yes  ____ 0 No  
   Spermicide  ____ 1 Yes  ____ 0 No  
   Oral contraceptive pills  ____ 1 Yes  ____ 0 No

6. Does your pharmacy stock Plan B? 
   ____ 1 Yes  
   ____ 0 No

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Appendix P (Continued)

7. Have you ever been asked to **fill a prescription** of Plan B?
   - 1 Yes
   - 0 No

8. Have you personally ever **filled a prescription** of Plan B?
   - 1 Yes
   - 0 No (skip to question #10)

9. Approximately how many Plan B prescriptions have you personally filled in the past 12 months? __________

10. Have you ever been asked to sell Plan B **over-the-counter**?
    - 1 Yes
    - 0 No

11. Have you personally ever sold Plan B **over-the-counter**?
    - 1 Yes
    - 0 No (skip to question #13)

12. Approximately how many times have you sold Plan B over-the-counter in the past 12 months? __________

13. Would you ever have the opportunity at your workplace to come in contact (sell, dispense, fill a prescription) of Plan B?
    - 1 Yes
    - 0 No

Next, I would like to ask you about your intention to dispense Plan B to each of the following groups. Please check the box that corresponds to the answer you choose.

**To what extent are you likely to sell Plan B over-the-counter to...**

<table>
<thead>
<tr>
<th></th>
<th>Very Unlikely</th>
<th>Somewhat Unlikely</th>
<th>Somewhat Likely</th>
<th>Very Likely</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>14. Women who have experienced incest or rape.</td>
<td></td>
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<tr>
<td>15. Women who have experienced a problem with their birth control method.</td>
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<tr>
<td>16. Women who request the method after having unprotected sexual intercourse.</td>
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<tr>
<td>17. A person other than the ultimate consumer of the product such as parents or a boyfriend.</td>
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</tbody>
</table>
Appendix P (Continued)

To what extent are you likely to dispense Plan B by prescription to...

<table>
<thead>
<tr>
<th>18. Women who have experienced incest or rape.</th>
<th>Very Unlikely</th>
<th>Somewhat Unlikely</th>
<th>Somewhat Likely</th>
<th>Very Likely</th>
<th>N/A</th>
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<tbody>
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<tr>
<td>19. Women who have experienced a problem with their birth control method.</td>
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<tr>
<td>20. Women who request the method after having unprotected sexual intercourse.</td>
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<tr>
<td>21. Sexually active teens under age 18.</td>
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</tbody>
</table>

Now I’d like to ask you some questions about what you generally know about Plan B. Please answer these questions to the best of your ability without looking up the answer.

22. How many pills are in a Plan B package?
   ____ 1 One
   ____ 2 Two
   ____ 3 Three
   ____ 4 Four
   ____ 5 Five
   ____ 6 Six
   ____ 7 Twelve
   ____ 8 Not Sure

23. According to the Plan B label, Plan B is effective if taken within how many hours of unprotected intercourse?
   ____ 1 Up to 12 hours
   ____ 2 Up to 24 hours
   ____ 3 Up to 36 hours
   ____ 4 Up to 72 hours
   ____ 5 Not Sure

24. Plan B prevents pregnancy via which of the following mechanisms?
   ____ 1 Inhibition or delay in ovulation
   ____ 2 Disruption of an implanted embryo
   ____ 3 Changes in the endometrial lining of the uterus
   ____ 4 All of the above
   ____ 5 Not sure
25. According to the Plan B label, what percentage of the time does Plan B prevent pregnancy if used properly?
   ____ 1 <25%
   ____ 2 25%-49%
   ____ 3 50%-74%
   ____ 4 75%-89%
   ____ 5 >89%

26. Sales of Plan B to eligible consumers may be made by:
   ____ 1 Pharmacists only
   ____ 2 Pharmacists or pharmacy technicians only
   ____ 3 Any member of the pharmacy staff working behind the pharmacy counter, as long as a pharmacist is on duty
   ____ 4 Sales clerks, but only if a pharmacist is not on duty

27. A woman asking to buy Plan B in advance of need:
   ____ 1 Must wait for a contraceptive emergency before buying it
   ____ 2 Should be advised to take a pregnancy test before taking it
   ____ 3 May purchase more than one package
   ____ 4 Can only make a purchase if she is using it for herself

28. When selling Plan B without a prescription to a man, pharmacists:
   ____ 1 Need to see proof that he is at least 18 years of age
   ____ 2 Must limit sales to one package
   ____ 3 Must ask for the name of the person who will be taking the product
   ____ 4 Are violating the law

Do you think the following statements are true or false?

29. Plan B can cause birth defects if taken by a pregnant woman.
   ____ 1 True
   ____ 2 False
   ____ 3 Not sure

30. Plan B can act as an abortifacient.
   ____ 1 True
   ____ 2 False
   ____ 3 Not sure

31. The sooner a woman takes Plan B, the more effective it will be.
   ____ 1 True
   ____ 2 False
   ____ 3 Not sure
Appendix P (Continued)

The next few questions will ask you about how you personally feel about Plan B. Please check the box that corresponds to the answer you choose.

<table>
<thead>
<tr>
<th></th>
<th>Completely Disagree</th>
<th>Somewhat Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Somewhat Agree</th>
<th>Completely Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>32. Easy availability of Plan B will discourage regular contraceptive use.</td>
<td></td>
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<tr>
<td>33. Easy availability of Plan B promotes promiscuity.</td>
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<td>34. I feel uncomfortable dispensing Plan B because of my religious/ethical beliefs.</td>
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<td>35. Repeated use of Plan B is wrong.</td>
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<td>36. I feel comfortable dispensing Plan B to adult women.</td>
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<tr>
<td>37. I feel comfortable dispensing Plan B to adolescents (teens &lt;18 years old).</td>
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<tr>
<td>38. I feel comfortable dispensing Plan B to men.</td>
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</tbody>
</table>

39. Should Plan B be offered to women who are raped in all hospital emergency rooms, regardless of hospital affiliation?
   ____ 1 Yes
   ____ 2 No
   ____ 3 Not sure
Appendix P (Continued)

The next questions will ask you about your perceptions of what other people think.

The people and groups listed below may be influential in your dispensing decision-making. Please indicate (by checking the box) how you think the following consider Plan B dispensing practices, either by prescription or over-the-counter.

<table>
<thead>
<tr>
<th></th>
<th>Definitely Should Not</th>
<th>Probably Should Not</th>
<th>Probably Should</th>
<th>Definitely Should</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>40.</strong> My partners/business colleagues think that I ________ dispense Plan B.</td>
<td></td>
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<tr>
<td><strong>41.</strong> The professional organization I am most active in recommends that I ________ dispense Plan B.</td>
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<tr>
<td><strong>42.</strong> My supervisor thinks that I ________ dispense Plan B.</td>
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<td></td>
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<tr>
<td><strong>43.</strong> In general, my close friends and family think that I ________ dispense Plan B.</td>
<td></td>
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</tbody>
</table>

44. Is there anyone in your pharmacy who refuses to dispense Plan B?
   - [ ] 1 Yes
   - [ ] 2 No
   - [ ] 3 Not sure
   - [ ] 4 My pharmacy does not carry Plan B

45. Is there a policy in place at your pharmacy if someone refuses to dispense Plan B?
   - [ ] 1 Yes
   - [ ] 2 No
   - [ ] 3 Not sure
   - [ ] 4 My pharmacy does not carry Plan B

Some pharmacists may feel that where they work affects their dispensing practices of Plan B. The following questions will ask you about your comfort level in dispensing Plan B.
Appendix P (Continued)

How easy is it for you to...

<table>
<thead>
<tr>
<th></th>
<th>Very Difficult</th>
<th>Somewhat Difficult</th>
<th>Somewhat Easy</th>
<th>Very Easy</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>46. Counsel clients about Plan B.</td>
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<tr>
<td>47. Refuse to dispense Plan B.</td>
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<tr>
<td>48. Educate clients about Plan B.</td>
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<tr>
<td>49. Dispense Plan B.</td>
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</table>

The last group of questions will ask some basic questions about you.

50. What is your gender?
   ____ 1 Female
   ____ 2 Male

51. How old are you?
   ____________

52. What pharmacy school did you graduate from?
   _______________________

53. What year did you graduate from pharmacy school?
   ____________

54. How would you describe yourself (choose only one)?
   ____ 1 Religious
   ____ 2 Spiritual
   ____ 3 Religious and Spiritual
   ____ 4 Undecided
   ____ 5 None of the above
   ____ 6 Prefer not to respond

55. Which religious group do you most closely identify with (choose only one)?
   ____ 1 Roman Catholic
   ____ 2 Baptist
   ____ 3 Methodist
   ____ 4 Episcopalian
   ____ 5 Lutheran
   ____ 6 Quaker
   ____ 7 Presbyterian
   ____ 8 Assembly of God
   ____ 9 Hindu
   ____ 10 Buddhist
Appendix P (Continued)

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<tr>
<td>___</td>
<td>11 Jewish</td>
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<tr>
<td>___</td>
<td>12 Islamic</td>
</tr>
<tr>
<td>___</td>
<td>13 Mormon</td>
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<td>___</td>
<td>14 Non-Denominational</td>
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<tr>
<td>___</td>
<td>15 None</td>
</tr>
<tr>
<td>___</td>
<td>16 Prefer not to respond</td>
</tr>
<tr>
<td>___</td>
<td>17 Other please specify (___________________)</td>
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</table>

56. What is your race/ethnicity (choose all that apply)?

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<tbody>
<tr>
<td>___</td>
<td>1 Caucasian</td>
</tr>
<tr>
<td>___</td>
<td>2 African American</td>
</tr>
<tr>
<td>___</td>
<td>3 Hispanic</td>
</tr>
<tr>
<td>___</td>
<td>4 Asian</td>
</tr>
<tr>
<td>___</td>
<td>5 Other please specify (___________________)</td>
</tr>
</tbody>
</table>

57. What is your current marital status?

<p>| | |</p>
<table>
<thead>
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<tbody>
<tr>
<td>___</td>
<td>1 Married</td>
</tr>
<tr>
<td>___</td>
<td>2 Living with a partner</td>
</tr>
<tr>
<td>___</td>
<td>3 Divorced</td>
</tr>
<tr>
<td>___</td>
<td>4 Separated</td>
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<tr>
<td>___</td>
<td>5 Widowed</td>
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<tr>
<td>___</td>
<td>6 Never been married</td>
</tr>
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</table>

58. What is your political affiliation?

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</thead>
<tbody>
<tr>
<td>___</td>
<td>1 Republican</td>
</tr>
<tr>
<td>___</td>
<td>2 Democratic</td>
</tr>
<tr>
<td>___</td>
<td>3 Independent</td>
</tr>
<tr>
<td>___</td>
<td>4 Green Party</td>
</tr>
<tr>
<td>___</td>
<td>5 None/Undecided</td>
</tr>
<tr>
<td>___</td>
<td>6 Other please specify (___________________)</td>
</tr>
</tbody>
</table>
Appendix Q.

Pharmacist Thank you/Reminder Postcard*

Date

Last week, a questionnaire seeking your perceptions about emergency contraception was mailed to you. Your name was randomly drawn from a list of all pharmacists registered with the Florida Board of Pharmacy.

If you have already completed and returned the questionnaire to us, please accept our sincere thanks. If not, please do so today. We are especially grateful for your help because it is only by asking people like you to share your thoughts and experiences that we can understand pharmacists’ perceptions and practices concerning emergency contraception in the state of Florida.

If you did not receive a questionnaire, or if it was misplaced, please call Alice R. Richman (813) 732-1903 and we will get another one in the mail to you today. Also, you are welcome to go online at www.ultimatesurveyor.com and complete the survey there.

Alice R. Richman
University of South Florida

*The template for this letter was taken from Dillman (2000).
Appendix R.

Panel of Experts Q&A

Questions for Pharmacist Panel of Experts
Combined Interview Responses
1) Male (blue), 2) Male (purple), 3) Female (green)

Male works at a CVS in Boston, MA
Male who works at Walgreens in Lakeland, Florida
Female works at Kaiser and formally worked with Kroger (Kings Super)

Date: May 26, 2006

General Questions:

1. Is there a National professional society or association that impacts/establishes policy re: pharmacist practices?

#1: The American Pharmaceutical Association (APhA) has a big impact politically as they work at the national level but most pharmacies are regulated by their local state Board of Pharmacies. In fact, pharmacies in general are regulated more by state law then from national policy.

#2: There are national pharmacy organizations but pharmacist procedures come from the State Board. Each state has its own Board of Pharmacy. First there are federal laws created and then each state makes sure the laws are followed.

#3 No, there isn’t one large association that impacts policy but there is APha. Female thought that the employer can influence policy over anyone else (over both the state and the national authorities)

Knowledge Questions:

2. When you were in school, what courses taught you the pharmacology of basic pharmaceuticals? What courses taught you about ethics and legality?

#1: Male didn’t exactly remember which courses taught him basic pharmacology because he’s been practicing pharmacy since 1975 but he remembers biology, chemistry, and biochemistry as the courses that covered this material. Also he thinks that now pharmacy students get this information from courses on biotherapeutics and pharmacology. Male remembers taking a pharmacy law class that taught him about pharmacy ethics and legality but now he thinks Pharmacy schools offer ethics classes.
Appendix R (Continued)

#2: Pharmacotherapy covered the pharmacology of basic pharmaceuticals and he took 2 semesters of pharmacy law that taught ethics and legality. He also mentioned that information on ethics was worked in to case studies and group assignments from other classes. He did not take an ethics course.

Pharmacotherapy: teaches which drugs cure which disease  
Medical Chemistry: teaches how drugs work chemically  
Pharmacology: teaches how drugs work in body

#3: Pharmacology taught her the basic pharmacology of pharmaceuticals and she’s had no formal ethics class though she thinks that in her pharmacy management class, they may have discussed ethics. She did take pharmacy law that discussed dispensing issues. She was in school 20 years ago so she thought it was a little difficult to remember.

As I also plan to do a curriculum review of the accredited schools of pharmacy in the U.S., what courses should I be looking for that teach the pharmacology or mechanism of EC and what courses may teach the ethics or legality of dispensing or not dispensing a medication?

#1: Male has been out of school for too long to answer this question.

#2: The pharmacology or mechanism of EC was taught in pharmacotherapy and ethics or legality of dispensing was learned in law class (when it’s okay not to fill) but Male said that ethics were applied throughout curriculum and he did not have an ethics class.

#3: She thinks that pharmacology is the course that will teach the mechanism of EC and pharmacy law may teach the ethics or legality of dispensing EC. When she went to school, she was just taught about dispensing; now students learn a lot more.

3. How do pharmacists acquire the required CEUs? How many are needed per year?

#1: Male is a pharmacist in Boston, Massachusetts, and he needs 15 per year. And 5 of those 15 credits must be live and 2 must be about pharmacy law. Most CEUs are good for 2 credits (2 hours) and he can do them on the internet by reading an article and answering questions or can attend conferences for example. He receives mailings for different programs offering CEUs and he can find out about CEUs from Journals. He has noticed that there are a lot on EC dispensing, especially since Massachusetts is about to have Collaborative Drug Therapy Agreements (CDTA) where a pharmacist will be able to counsel and prescribe EC at a pharmacy in conjunction with a physician. He mentioned one CEU course on EC dispensing training offered through Northeastern University: www.ace.neu.edu/rxce/index.php
Appendix R (Continued)

#2: Regular pharmacists need 12 hours/year in Florida. A consulting pharmacist, like a pharmacist who works in a nursing home checking charts of patients, needs 24 hours/year. 5 credits must be live, 2 credits must involve AIDS or terminal illnesses, and 1 credit must involve medication errors. Pharmacists can find CEUs online, from the Hills County Pharmacy Association Office. Also, national organizations have meetings twice per year and he can get all live credits for a 2 year period completed in one conference. (Random note: pharmacists call CEUs, CE’s.)

#3: Pharmacists in Colorado need 12 CEUs per year and these contact hours can be procured however they want. Colorado doesn’t differ between live and not live. She procures her CEUs from a Journal she prescribes to called Pharmacist Letter. It comes out monthly and covers all sorts of issues and then she takes the quiz at the end and gets her CEU credits. The remainder of her CEUs comes internally from Kaiser.

Here is the information for CEUs for Florida Pharmacists as found on the Florida Board of Pharmacy Florida Department of Health website
http://www.doh.state.fl.us/mqa/pharmacy/phceu.html

Pharmacist: - 30 hours of CE per biennium (two year licensure period) ten (10) hours must be live, one (1) hour HIV/AIDS, and 2 hours Pharmaceutical Education on medication errors per biennium (maybe counted toward required CE hours).

4. What are the typical journals that pharmacists read? In your opinion, do they tend to read practice or professional journals? Or is there even a distinction made?
   a. What kinds of issues are out there being circulated in the field, for example are there a lot of reproductive, contraception, or reproductive pharmaceutical related articles?

#1: Typical Journals include Application of Clinical Pharmacy, Pharmacy Times, or American Druggists. There is no real distinction made between practice or professional journals and there are not a lot of reproductive or contraception related articles out there. He guesses that the amount of reproductive related articles is within the accepted percentage for the Journals. He also noted that he doesn’t read a lot of Journals and if he does, it’s for CEU credits.

#2: Male says that some pharmacists read the same main medical journals as we do such as New England Journal of Medicine, AGHP, and American Pharmacist Association. He says that these Journals are more research based. Then there are other Journals such as Pharmacy Today and Drug Topics that keep pharmacists up-to-date on new drugs and medications. He says that these Journals are sent to Walgreens for free.
In terms of reproductive related articles in Journals he said that whatever is typically in the news is also in the Journals. He remembers seeing a lot of EC related articles when it almost went OTC in the general news.

#3: Pharmacists typically read Pharmacy Times or the Journal put out by APha. Pharmacists read both practice and professional journals and she doesn’t think that there is a distinction made between the two. Female doesn’t think that there are a lot of reproductive pharmaceutical related articles out there and since we last spoke she’s kept her eye out for articles on EC and hasn’t noticed any.

5. How do pharmacists get information on changes to contraception (for example the upcoming change of birth control pills)? How do pharmacists find out about all new medications?

#1: Surprisingly, no one ever really tells pharmacists about changes to medication. He will typically notice a change on a prescription a doctor writes and then if he doesn’t recognize the prescription or drug he will sometimes tries to self educate through looking medication up. Some drug salespeople do come by the store but he doesn’t usually talk to them because they are just pushing their drug. Sometimes, CVS will send a corporate letter saying what new drugs they will be carrying.

#2: Both changes to medication and new medications are found out through the following avenues:
   i. Package inserts on the new drugs when they arrive at the store
   ii. Drug companies will send information to pharmacists
   iii. Magazines will talk about new magazines
   iv. CEUs may come out on the particular drug or topic

#3: Pharmacists get information on changes to contraception from the following mechanisms:

- Reading Journals
- See new prescription that was written
- See it through practice

When she worked with Kroger, she found out about new medications through drug reps and Journals but now that she works for Kaiser it’s a closed formulary so no reps are allowed.

Attitude Questions:

6. Is there a National policy or code of ethics for pharmacist?
Appendix R (Continued)

#1: He thinks that there is something like the Hippocratic Oath for pharmacists but doesn’t know for sure. He recommends that we search for a code of ethics by state because everything is deferred to the state level. He also thinks that CVS has its own code of ethics and he’s going to search for it and send it to me if he can find it.

#2: Yes, there is a code of ethics for pharmacists (he’s going to see if he can find it). It’s given to pharmacy students when they start the program and when they graduate.

#3: Yes, they say it when students graduate from pharmacy school (she’s going to try and find it and get back to me).

7. How would you say an individual’s moral or ethical beliefs would impact their professional practice as a pharmacist?

#1: Male thinks that it’s dependent on where you live. He noted that Boston is very open and liberal and he doesn’t think that professional opinion affects practice. He talked about women getting repeat prescriptions of EC and how that bothered him a little bit but he never has changed his dispensing practices. At the same time, he also said that there are some people who will not dispense birth control pills or EC. (These seem to be conflicting statements that on the one hand he says that he doesn’t think beliefs impact practice but then on the other hand he has heard of people who will not dispense BCPs).

#2: Male thinks that BC and EC are the only times that moral or ethical beliefs would impact professional practice but he also mentioned that there is sometimes an issue with pain killers/relievers and cancer patients but not as much as with BC and EC. He has never known anyone who refused to fill prescriptions but he has heard of it a lot around Lakeland. He knows of one Publix in Lakeland doesn’t stock EC because the pharmacist will not fill EC. So, Publix then sends these customers to Walgreens to fill the prescription. Because his store has 24 hour access, they have 3 pharmacists around and available so if one person will not fill it, someone else will.

#3: Female thinks that an individual’s moral or ethical beliefs are impacting practice more than it use to, that is, you are more likely to see refusal to fill now then before. She said that it use to be that you got a prescription and you filled it. Now a pharmacist has the option to refuse based on ethical, moral, or drug based (contraindications) reasons.

Kaiser has no policy or record and no suggested policy but Kroger did have a policy that was not accessible to the public. The policy was that if you refuse to fill a prescription, it’s your responsibility to find someone who would fill it, either within
your own pharmacy or some other nearby pharmacy. So, for example, Walmart (who up until recently did not carry EC) would call Kroger with a client asking to fill EC. She herself has never known anyone to refuse but has heard about it.

Dispensing Practice Questions:

8. What are the general policies on dispensing at pharmacies? Is the policy corporate or state-driven? Is it accessible to the public?

#1: There is no general policy on dispensing at CVS. Dispensing hasn’t been a real issue or problem so there’s been no policy created BUT there has been a suggested method of handling a situation where a pharmacist is uncomfortable filling a prescription for religious or moral reasons. CVS suggested that if you’re uncomfortable filling a prescription (for religious or moral reasons), you first see if someone else is available to fill it (For Male at his CVS, there’s only 1 pharmacist on duty at any given time so there wouldn’t be anyone to fill it). Then, if there’s no one else to fill it, you give the client directions to another CVS store where they will fill it. This is the suggested guideline by CVS as they sent a letter around, but no formal policy has been set yet.

He also noted that policy is corporate driven and is not accessible to the public.

This is very interesting to me, that they suggest women to go to another pharmacy. How would this policy be affective in rural areas?

#2: There are no policies on dispensing at Walgreens though he feels that Walgreens would not be happy if you refuse to fill a prescription especially after hearing about how pharmacies were sued for it. If the pharmacy doesn’t stock it, then they send women to another store that does.

Male told me that he doesn’t agree with EC unless in cases of rape. He thinks that his store gets about 1 or 2 prescriptions of EC per month.

#3: There are no real policies created until there’s a problem. No company policy at Kaiser but at Kroger there was one. If there is a policy, it’s corporate and not accessible to the public.

9. How do you think corporate policy affects personal behavior?

#1: Male believes that corporate policy would be a VERY STRONG motivator that affects personal behavior and he noted that you can not buck the system very long until you will get thrown out.
#2: He thinks that fear of losing your job does have a large affect on personal behavior and he also thinks that if there were no consequences that more people would refuse to fill it.

#3: She thinks that corporate policy does affect personal behavior by making pharmacists aware of the need to take care of the client regardless of personal beliefs.

10. What is the recourse or ramifications if you refuse to fill a prescription for a client? In your opinion, why would a pharmacist not want to fill a prescription?

#1: If you refuse to fill a prescription, you need to find another person or pharmacy to fill it.

If Males opinion, a pharmacist may not want to fill a prescription based on:

- Religious Beliefs
- Moral Beliefs
- Political Beliefs

#2: Male thinks that if you refuse to fill a prescription for a client that it would depend on the situation but he thinks that you may lose your job over it. He heard that Eckerd fired someone for not filling a prescription.

In his opinion, a pharmacist would not fill a prescription due to religious or moral reasons. Also, if the patient is currently taking one drug and the prescription is for another drug that could harm the patient if these drugs were taken together, that is another reason for refusal (harm to the patient or contraindications). An example of this is that he’s refused Viagra to someone before b/c the combination of his two medications is known to be lethal.

#3: She thinks that refusing to fill prescriptions may be breaking state law and may result in a termination of your job but she doesn’t know.

A pharmacist may not want to fill a prescription based on moral or pro-life beliefs.

11. Are all OTC medications placed differently in a pharmacy? Meaning, are all OTC medications placed in front the counter or are some placed behind the counter. If some are placed in front and some behind, what distinguishes these differences?

#1: The only OTC medications required to be behind the counter are tobacco and Sudafed. However, some medications are placed behind the counter because they are worth a lot of money and people try to steal them. For example, powdered baby formula and crest white strips are held behind the counter because of their high ticket
value and because they will walk right out the door if not held behind the counter. Male believes if EC ever went OTC that it would be held behind the counter as well.

#2: In the past, all OTC medications were placed in front of the counter but now they have to keep Sudafed behind the counter. They also place home drug tests behind the counter because people were stealing them.

#3: Sudafed is the OTC drug required to be behind the counter but sometimes high priced items such as nicoderm and diabetic supplies will be behind the counter. She also thinks that if EC with OTC, that it would be held behind the counter b/c it would be in little packages that would be easy to steal.

Final Questions:

12. In the survey of pharmacists, we will need to ask questions about knowledge, attitudes, and dispensing practices of EC. Can you help think of ways to ask these questions most effectively to pharmacists (have some examples ready to help prompt ideas including existing questions on these variables as well as factors such as age of recipient, repetition of filling prescription, and OTC status)?

#1: Male said that he would be willing to edit some questions on the survey after we put it together and provide suggestions if the questions don’t seem to ask what we think they’re asking.

#2: Male mentioned that he is willing to help with the survey development when we have some questions for him to look at. He also mentioned, like Male, that if he saw a woman using EC repeatedly, he may choose to talk to her or to contact her doctor to have him/her talk to the patient. He also noted that there may have been negative attitudes towards HIV/AIDS patients thinking that they were promiscuous or dirty because they had HIV/AIDS but he said that think negative thinking was cleared up.

His email address is: buie933@hotmail.com

#3: If there are what a pharmacist perceives to be too many refills, some pharmacists personally call the doctor to make sure that’s what they meant to write on the prescription.

Also if a pharmacist notices that a woman is getting EC twice/month, she has called her doctor and spoken to the doctor before. (I think Female was telling me that she herself has called a doctor before to question why a women has been using EC repeatedly—this finding was in the other interviews and is interesting)
Appendix R (Continued)

13. Is it possible that I call you or email you a couple more questions in a few weeks if I need to?

#1: Yes, Male is more than willing for me to call him with questions anytime.

#2: Yes.

#3: Yes. She’s very interested in seeing the survey.

14. Do you have any questions for me?

#1: No.
#2: No.
#3: No.

Other:

#1:
- He noted that pharmacy is very regulated by drug companies and corporations.
- Noted that they don’t have access to the internet at work because they run a very tight system (Condour System)
- There are 5,000 CVS stores
- Additional website to check out: CVS.net (find CVS learn net) for good pharmacy information
- 6 of the top 18 drugs filled are birth control pills
- Most prescriptions for EC are filled on Monday and Tuesday (right after the weekend). He fills around 5 on Monday and 2-3 on Tuesday.

#2:
- Male Graduated in 2001 but then chose to do a 1-year residency to become more specialized in community pharmacy. He received his education from University of Florida (one of the 4 accredited Schools of Pharmacy in Florida).
### Table 54. Description of Survey Variables

<table>
<thead>
<tr>
<th>Model</th>
<th>Item (Question)</th>
<th>Responses</th>
<th>Level of Measurement</th>
</tr>
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<tbody>
<tr>
<td><strong>I. Background Variables</strong></td>
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</tr>
<tr>
<td>Gender</td>
<td>What is your gender?</td>
<td>Female/Male</td>
<td>Nominal</td>
</tr>
<tr>
<td>Age</td>
<td>How old are you?</td>
<td>List age</td>
<td>Ratio</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>What is your race/ethnicity (choose all that apply)?</td>
<td>____ 1 Caucasian ____ 2 African American ____ 3 Hispanic ____ 4 Asian ____ 5 Other please specify (___________________)</td>
<td>Nominal</td>
</tr>
<tr>
<td>Years in Practice</td>
<td>How many years have you been a practicing registered pharmacist?</td>
<td>list # of years</td>
<td>Ratio</td>
</tr>
<tr>
<td>Type of Pharmacy</td>
<td>The type of pharmacy where you work could be best described as (if you have more than one job, please circle the number that corresponds to your primary type of pharmacy)</td>
<td>____ 1 Community -- Chain ____ 2 Community -- Independent ____ 3 Hospital ____ 4 Government (e.g., US Public Health Service, military) ____ 5 Indian Health Service ____ 6 Not currently working in a pharmacy ____ 7 Other: Please specify</td>
<td>Nominal</td>
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<tr>
<td>Marital Status</td>
<td>What is your current marital status?</td>
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<tr>
<td></td>
<td>____ 1 Married</td>
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<td></td>
<td>____ 2 Living with a partner</td>
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<td></td>
<td>____ 3 Divorced</td>
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<td></td>
<td>____ 4 Separated</td>
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<td></td>
<td>____ 5 Widowed</td>
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<td></td>
<td>____ 6 Never been married</td>
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<tr>
<th>Religion</th>
<th>Which religious group do you most closely identify with (choose only one)?</th>
<th>Nominal</th>
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<tbody>
<tr>
<td></td>
<td>____ 1 Roman Catholic</td>
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<td></td>
<td>____ 2 Baptist</td>
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<td></td>
<td>____ 3 Methodist</td>
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<td></td>
<td>____ 4 Episcopalian</td>
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<td></td>
<td>____ 5 Lutheran</td>
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<td></td>
<td>____ 6 Quaker</td>
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<td></td>
<td>____ 7 Presbyterian</td>
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<td></td>
<td>____ 8 Assembly of God</td>
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<td></td>
<td>____ 9 Hindu</td>
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<td></td>
<td>____ 10 Buddhist</td>
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<td>____ 11 Jewish</td>
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<tr>
<td></td>
<td>____ 12 Islamic</td>
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<tr>
<td></td>
<td>____ 13 Mormon</td>
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<tr>
<td></td>
<td>____ 14 Non-Denominational</td>
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<td></td>
<td>____ 15 None</td>
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<td></td>
<td>____ 16 Other please specify</td>
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<tr>
<th>Religiosity</th>
<th>How would you describe yourself (choose only one)?</th>
<th>Nominal</th>
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<tbody>
<tr>
<td></td>
<td>____ 1 Religious</td>
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<td></td>
<td>____ 2 Spiritual</td>
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<tr>
<td></td>
<td>____ 3 Religious and Spiritual</td>
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<tr>
<td></td>
<td>____ 4 Undecided</td>
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</tr>
<tr>
<td></td>
<td>____ 5 None of the above</td>
<td></td>
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<tr>
<td></td>
<td>____ 6 Prefer not to respond</td>
<td></td>
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<tr>
<th>Political Affiliation</th>
<th>What is your political affiliation?</th>
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<tbody>
<tr>
<td></td>
<td>____ 1 Republican</td>
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<td></td>
<td>____ 2 Democratic</td>
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<td>____ 3 Independent</td>
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<td>____ 4 Green Party</td>
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<td></td>
<td>____ 5 None/Undecided</td>
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<tr>
<td></td>
<td>____ 6 Other please specify</td>
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<thead>
<tr>
<th>Employment Status</th>
<th>What is your current employment status?</th>
<th>Nominal</th>
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<tbody>
<tr>
<td></td>
<td>____ 1 Full-time</td>
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<tr>
<td></td>
<td>____ 2 Part-time</td>
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<tr>
<td></td>
<td>____ 3 Retired</td>
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</tr>
<tr>
<td>Pharmacy School Attended</td>
<td>What pharmacy school did you graduate from?</td>
<td>Open-ended</td>
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<td>--------------------------</td>
<td>--------------------------------------------</td>
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</tr>
<tr>
<td>Year of Graduation</td>
<td>What year did you graduate from pharmacy school?</td>
<td>List year</td>
</tr>
<tr>
<td>Job Title</td>
<td>What is your job title?</td>
<td></td>
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<tr>
<td></td>
<td>1 Staff Pharmacist</td>
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<td>2 Pharmacy Manager</td>
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<td>3 Other: Please specify</td>
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</table>

### II. Dispensing Practices

Does your pharmacy stock any of the following products?
- Condoms
- Spermicide
- Oral contraceptive pills

<table>
<thead>
<tr>
<th>Does your pharmacy stock Plan B?</th>
<th>Yes/No</th>
<th>Nominal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you personally ever filled a prescription of Plan B?</td>
<td>Yes/No</td>
<td>Nominal</td>
</tr>
<tr>
<td>Have you ever been asked to fill a prescription of Plan B?</td>
<td>Yes/No</td>
<td>Nominal</td>
</tr>
</tbody>
</table>

Approximately how many Plan B prescriptions have you personally filled in the past 12

<table>
<thead>
<tr>
<th>Open-ended</th>
<th>Ratio</th>
</tr>
</thead>
</table>

278
<table>
<thead>
<tr>
<th>Question</th>
<th>Response Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you ever been asked to sell Plan B over-the-counter?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Have you personally ever sold Plan B over-the-counter?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Approximately how many times have you sold Plan B over-the-counter in the past 12 months?</td>
<td>Open-ended</td>
</tr>
<tr>
<td>Would you ever have the opportunity at your workplace to come in contact (sell, dispense, fill a prescription) of Plan B?</td>
<td>Yes/No</td>
</tr>
</tbody>
</table>

### III. Intention to Dispense Plan B

*To what extent are you likely to sell Plan B over-the-counter to...*

- **4-point Likert Scale, with 1 = Very Unlikely, 2= Somewhat Unlikely, 3= Somewhat Likely, 4= Very Likely, 5=N/A**
- Women who have experienced incest or rape.
- Women who have experienced a problem with their birth control method.
- Women who request the method after having unprotected sexual intercourse.
- A person other than the ultimate consumer of the product such as parents or a boyfriend.

<table>
<thead>
<tr>
<th>Response Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ordina/Interval</td>
</tr>
<tr>
<td>To what extent are you likely to dispense Plan B by prescription to...</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>4-point Likert Scale, with 1 = Very Unlikely, 2= Somewhat Unlikely, 3= Somewhat Likely, 4= Very Likely, 5=N/A</td>
</tr>
</tbody>
</table>

### IV. Knowledge

<table>
<thead>
<tr>
<th>How many pills are in a Plan B package?</th>
<th>Nominal</th>
</tr>
</thead>
</table>
| 1 One | 1
| 2 Two | 2
| 3 Three | 3
| 4 Four | 4
| 5 Five | 5
| 6 Six | 6
| 7 Twelve | 7
| 8 Not Sure | 8 |

<table>
<thead>
<tr>
<th>According to the Plan B label, Plan B is effective if taken within how many hours of unprotected intercourse?</th>
<th>Nominal</th>
</tr>
</thead>
</table>
| 1 Up to 12 hours | 1
| 2 Up to 24 hours | 2
| 3 Up to 36 hours | 3
| 4 Up to 72 hours | 4
| 5 Not Sure | 5 |

<table>
<thead>
<tr>
<th>Plan B prevents pregnancy via which of the following mechanisms?</th>
<th></th>
</tr>
</thead>
</table>
| 1 Inhibition or delay in ovulation | 1
| 2 Disruption of an implanted embryo | 2
| 3 Changes in the endometrial lining of the uterus | 3
| 4 All of the above | 4
<p>| 5 Not sure | 5 |</p>
<table>
<thead>
<tr>
<th>Sales of Plan B to eligible consumers may be made by:</th>
<th>1 Pharmacists only</th>
<th>2 Pharmacists or pharmacy technicians only</th>
<th>3 Any member of the pharmacy staff working behind the pharmacy counter, as long as a pharmacist is on duty</th>
<th>4 Sales clerks, but only if a pharmacist is not on duty</th>
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<tbody>
<tr>
<td>According to the Plan B label, what percentage of the time does Plan B prevent pregnancy if used properly?</td>
<td>1 &lt;25%</td>
<td>2 25%-49%</td>
<td>3 50%-74%</td>
<td>4 75%-89%</td>
</tr>
<tr>
<td>A woman asking to buy Plan B in advance of need:</td>
<td>1 Must wait for a contraceptive emergency before buying it</td>
<td>2 Should be advised to take a pregnancy test before taking it</td>
<td>3 May purchase more than one package</td>
<td>4 Can only make a purchase if she is using it for herself</td>
</tr>
<tr>
<td>When selling Plan B without a prescription to a man, pharmacists:</td>
<td>1 Need to see proof that he is at least 18 years of age</td>
<td>2 Must limit sales to one package</td>
<td>3 Must ask for the name of the person who will be taking the product</td>
<td>4 Are violating the law</td>
</tr>
<tr>
<td>Do you think the following statements are true or false?</td>
<td>Emergency contraceptive pills cause birth defects if taken by a pregnant woman. Emergency contraception can act as an abortifacient. The sooner a woman takes emergency contraception, the more effective it will be.</td>
<td>Nominal</td>
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<tr>
<td>True</td>
<td>False</td>
<td>Not Sure</td>
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### V. Attitudes

*The next few questions will ask you about how you personally feel about emergency contraception. Please check the box that corresponds to the answer you choose.*

**5-point Likert Scale, with 1 = Completely Disagree, 2 = Somewhat Disagree, 3 = Neither Agree nor Disagree, 4 = Somewhat Agree, 5 = Completely Agree**

- Easy availability of emergency contraception will discourage regular contraceptive use.
- Easy availability of emergency contraception promotes promiscuity.
- I feel uncomfortable dispensing Plan B because of my religious/ethical beliefs.
- Repeated use of emergency contraception is wrong.
- I feel comfortable dispensing Plan B to adult women.
- I feel comfortable dispensing Plan B to adolescents (teens <18 years old).
- I feel comfortable dispensing Plan B to men.

### VI. Subjective Norms

*Should emergency contraception be offered to women who are raped in all hospital rooms, regardless of hospital affiliation?*

- 1 Yes
- 2 No
- 3 Not sure

Nominal
The next questions will ask you about your perceptions of what other people think.

The people and groups listed below may be influential in your dispensing decision-making. Please indicate (by checking the box) how you think the following consider emergency contraception dispensing practices, either by prescription or over-the-counter.

5-point Likert scale
1 = Definitely should not, 2 = Probably should not, 3 = Probably should, 4 = Definitely should

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<tr>
<td>59. My partners/business colleagues think that I ________ dispense Plan B.</td>
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<tr>
<td>60. The professional organization I am most active in recommends that I ________ dispense Plan B.</td>
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<td>61. My supervisor thinks that I ________ dispense Plan B.</td>
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<tr>
<td>62. In general, my close friends and family think that I ________ dispense Plan B.</td>
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<tr>
<td>Is there anyone in your pharmacy who refuses to dispense Plan B?</td>
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<td>Is there a policy in place at your pharmacy if someone refuses to dispense Plan B?</td>
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VII. Perceived Behavioral Control

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283
Some pharmacists may feel that where they work effects their dispensing practices of Plan B. The following questions will ask you about your comfort level in dispensing Plan B.

How easy is it for you to...

<table>
<thead>
<tr>
<th>4-point Likert scale with N/A option</th>
<th>Counsel clients about Plan B.</th>
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<td>1=Very Difficult, 2=Somewhat Difficult, 3=Somewhat Easy, 4=Somewhat Easy, 5=N/A</td>
<td>Refuse to dispense Plan B.</td>
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<tr>
<td></td>
<td>Educate clients about Plan B.</td>
</tr>
<tr>
<td></td>
<td>Dispense Plan B.</td>
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Ordinal/Interval
Appendix T

Focus Group Topical Guide

1) Introduction

Good *morning, evening, afternoon* and welcome to our session. Thank you for taking the time to join our discussion. Your assistance is important; the ideas you share today will help us understand the perceptions about emergency contraception among pharmacy students. My name is Alice Richman and assisting me today is Lisa Nugent.

2) Purpose

I am a doctoral student at the University of South Florida and I am conducting research on pharmacists and access to emergency contraception. I am trying to understand what pharmacy students learn about emergency contraception in their pharmacy school classes.

We are interested in all of your thoughts and comments. There are no right or wrong answers but rather differing points of view. Please feel free to share your point of view even if it differs from what others have said. Before we begin, let me remind you of some groundrules…

3) Procedure & Ground Rules

Group discussion – so don’t wait to be called on, but please speak one at a time so I can get your opinions on the tape.

Audiotape: we’re tape recording the session b/c we don’t want to miss any of your comments. Although we may use your first names in the discussion, no names will be attached to comments. You may be assured of complete confidentiality.

No right or wrong answers: want both positive and negative comments

Please feel free to disagree with each other, respectfully of course, and ask the group questions.

If you have to use the bathroom, please feel free to get up at any time during our discussion.

About 1 hour

4) Questions

Opening Question
Tell us your first name and why you want to be a pharmacist? (5 min)
Appendix T (Continued)

Introductory Question:

When I say emergency contraception which is also sometimes referred to as the morning after pill, what is the first thing that comes to your mind?

Warm up:

What have you learned about emergency contraception that you think is important for people to know?

Probe Questions: What is it? How does it work? Who should use it? When should people take it? Mechanism of action? Purpose?

Warm up:

Where have you gotten information this information?

Probe Questions: could be a range of people and places: in school, from pharmacy practice experience, pharmacy representatives, magazines, from friends, teachers, parents? Where else have you learned about it?

Key Question:

Thinking back to the courses you have taken in your Pharm D program, what do you remember learning about emergency contraception?

Things I am looking for: Timing of administration? Mechanism of action? Purpose? Elective or required?

Key Question:

Think back to any instruction you received on emergency contraception in your pharmacy school classes. Were you aware of any attitudes towards the medication by the instructor?

Positive/negative/neutral

Key Question:

How do you feel about dispensing emergency contraception?

Probe Questions: There are a number of circumstances where EC is thought to be controversial: feelings about dispensing to adolescents, rape victims, women whose birth control fails, women who use it repeatedly.
Appendix T (Continued)

Key Question:

Do you feel any differently about dispensing emergency contraception than you do dispensing any other medications?

 Probe Question if they feel negatively: Where do your feelings about dispensing come from?

Key Question:

The Food and Drugs Administration (FDA) recently approved for emergency contraception to be administered over-the-counter to women 18 years of age and over in the U.S. What do you think about this decision?

Key Question:

Does that (OTC status) change your views about it?

Key Question:

Some pharmacists have refused to dispense emergency contraception. How do you feel about this?

Key Question:

Should moral or religious views guide dispensing of pharmaceutical products? What about dispensing of emergency contraception?

Recap

Brief summary of key issues. How well does that description capture what we have talked about? Have we missed anything? Any other comments?
Appendix T (Continued)

Initial Paper & Pencil Survey for Focus Groups

1. Did you take any classes in your Pharm D program which taught you about emergency contraception? (please check a box)
   - Yes
   - No (skip to question 9)
   - Not sure (skip to question 9)

2. Which classes taught you about emergency contraception? (please list below)
   Please also check the box if these classes were required or offered as an elective.
   - ________________________________  □ required
     - ________________________________  □ elective
     - ________________________________  □ required
     - ________________________________  □ elective
     - ________________________________  □ elective

3. In your estimation, how much time would you say was spent on learning about emergency contraception in a given class?

4. What types of instructional methods were used to teach you about emergency contraception in your pharmacy school classes? (e.g. lectures, course readings, power point discussions, videos, course discussions)

5. Of the instructional methods that taught you about emergency contraception in your pharmacy school classes, which method/s did you learn the most from and why?


6. Was there any information concerning emergency contraception that you wished you had learned or had more detailed instruction on?

7. Have your pharmacy school classes discussed the new over-the-counter status of emergency contraception?

   - Yes
   - No
   - Not sure

8. Have your pharmacy school classes discussed the dispensing issues (e.g. pharmacists refusals to dispense) surrounding emergency contraception?

   - Yes
   - No
   - Not sure

9. Do you think you will dispense emergency contraception upon becoming a pharmacist?

   - Yes
   - No
   - Not sure

10. Do you think pharmacists are well enough informed to confidently dispense emergency contraception?

    - Yes
    - No
    - Not sure

*Thank you for completing this survey!!*
## Appendix U (p. 290-293)

**List of 91 pharmacy schools that received Dean’s survey**

<table>
<thead>
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<th>State</th>
<th>School Name</th>
<th>Address</th>
<th>Phone</th>
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</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>Auburn University Harrison School of Pharmacy</td>
<td>2316 Walker Building Auburn, AL 36849</td>
<td>334-844-8348</td>
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<tr>
<td></td>
<td>Samford University McWhorter School of Pharmacy</td>
<td>800 Lakeshore Drive Birmingham, AL 35229</td>
<td>205-726-2820</td>
</tr>
<tr>
<td>Arizona</td>
<td>The University of Arizona College of Pharmacy</td>
<td>1295 N. Martin Avenue PO Box 21020 Tucson, AZ 85721</td>
<td>520-626-1427</td>
</tr>
<tr>
<td></td>
<td>Midwestern University College of Pharmacy - Glendale</td>
<td>19555 North 59th Avenue Glendale, AZ 85308</td>
<td>623-572-3500</td>
</tr>
<tr>
<td>Arkansas</td>
<td>University of Arkansas for Medical Sciences College of Pharmacy</td>
<td>4301 West Markham - #522 Little Rock, AR 72205</td>
<td>501-686-5557</td>
</tr>
<tr>
<td></td>
<td>Kentucky University of Kentucky College of Pharmacy</td>
<td>725 Rose Street Pharmacy Building Lexington, KY 40536-0082</td>
<td>859-257-2736</td>
</tr>
<tr>
<td></td>
<td>The University of Louisiana at Monroe College of Pharmacy</td>
<td>700 University Avenue Monroe, LA 71209</td>
<td>318-342-1600</td>
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<tr>
<td></td>
<td>Xavier University of Louisiana College of Pharmacy</td>
<td>1 Drexel Drive New Orleans, LA 70125</td>
<td>504-520-7500</td>
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<tr>
<td>Maryland</td>
<td>University of Maryland School of Pharmacy</td>
<td>20 North Pine Street Baltimore, MD 21201</td>
<td>410-706-7651</td>
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<tr>
<td>Massachusetts</td>
<td>Massachusetts College of Pharmacy and Health Science School of Pharmacy-Boston</td>
<td>179 Longwood Avenue Boston, MA 02115-5896</td>
<td>617-732-2781</td>
</tr>
<tr>
<td></td>
<td>The University of Toledo College of Pharmacy</td>
<td>2801 West Bancroft Street Mail Stop #608 Toledo, OH 43606</td>
<td>419-530-1904</td>
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<tr>
<td>Oklahoma</td>
<td>University of Oklahoma College of Pharmacy</td>
<td>PO Box 26901 Oklahoma City, OK 73190</td>
<td>405-271-6485</td>
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<tr>
<td></td>
<td>Southwestern Oklahoma State University College of Pharmacy</td>
<td>100 Campus Drive Weatherford, OK 73096</td>
<td>580-774-3760</td>
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<tr>
<td>Oregon</td>
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<td>203 Pharmacy Building Corvallis, OR 97331</td>
<td>541-737-3424</td>
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<tr>
<td>Pennsylvania</td>
<td>Duquesne University Mylan School of Pharmacy</td>
<td>306 Bayer Learning Center Pittsburgh, PA 15282</td>
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<td>Lake Erie College of Osteopathic Medicine LECOM School of Pharmacy</td>
<td>1858 West Grandview</td>
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<td>Skaggs School of Pharmacy &amp; Pharmaceutical Science 9500 Gilman Drive, MC 0657 La Jolla, CA 92093-0657 858-822-4900</td>
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<td>University of California at San Francisco</td>
<td>School of Pharmacy 521 Parnassus Avenue Clinical Sciences, Room C-156 San Francisco, CA 94143 415-476-2733</td>
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<td></td>
<td>Loma Linda University</td>
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<td>College of Pharmacy and Pharmaceutical Sciences 333 New Pharmacy</td>
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<td>Building Tallahassee, FL 32307-3800 850-599-3301</td>
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<td>Nova Southeastern University</td>
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<td></td>
<td>Drive Fort Lauderdale, FL 33328 954-262-1300</td>
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<tr>
<td>Palm Beach Atlantic University</td>
<td>School of Pharmacy 901 South Flagler Drive West Palm Beach, FL 33416</td>
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<td>Georgia</td>
<td>The University of Georgia College of Pharmacy Green Street Athens, GA 30602</td>
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<tr>
<td>University of Nebraska</td>
<td>College of Pharmacy 986000 Nebraska Medical Center Omaha, NE 68198</td>
<td>402-559-4333</td>
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<tr>
<td>Nevada</td>
<td>University of Southern Nevada College of Pharmacy 11 Sunset Way</td>
<td></td>
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<tr>
<td></td>
<td>Henderson, NV 89014 702-990-4433</td>
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<tr>
<td>New Jersey</td>
<td>Rutgers, the State University of New Jersey Ernest Mario School of</td>
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<tr>
<td></td>
<td>Pharmacy 160 Frelinghuysen Road Piscataway, NJ 08854-8020 732-445-2675</td>
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<tr>
<td>New Mexico</td>
<td>University of New Mexico College of Pharmacy MSC09 5360 1 University</td>
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<tr>
<td></td>
<td>of New Mexico Albuquerque, NM 87131 505-272-3241</td>
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<tr>
<td>New York</td>
<td>University at Buffalo School of Pharmacy and Pharmaceutical Sciences</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>126 Cooke Hall - Box 601200 Buffalo, NY 14260-1200 716-645-2823</td>
<td></td>
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</tr>
<tr>
<td>University of Utah</td>
<td>College of Pharmacy 30 South 2000 East Room 201 Salt Lake City, UT 84112</td>
<td></td>
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<tr>
<td></td>
<td>801-581-6731</td>
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<tr>
<td>Virginia</td>
<td>Hampton University School of Pharmacy Kittrell Hall Hampton, VA 23668</td>
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<tr>
<td></td>
<td>757-727-5071</td>
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<tr>
<td>Shenandoah University</td>
<td>Bernard J. Dunn School of Pharmacy</td>
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<tr>
<td>Georgia</td>
<td>Drive</td>
<td>Atlanta, GA 30341 678-547-6304</td>
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<tr>
<td></td>
<td>South University</td>
<td>School of Pharmacy 709 Mall Boulevard Savannah, GA 31406 912-201-8120</td>
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</tr>
<tr>
<td>Idaho</td>
<td>Idaho State University</td>
<td>College of Pharmacy Stop 8288 921 S. 8th Avenue Pocatello, ID 83209 208-282-2175</td>
<td></td>
</tr>
<tr>
<td>Illinois</td>
<td>University of Illinois at Chicago</td>
<td>College of Pharmacy (M/C 874) 833 South Wood Street Suite 145 Chicago, IL 60612 312-996-7240</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Midwestern University</td>
<td>Chicago College of Pharmacy 555 31st Street Downers Grove, IL 60515 630-971-6417</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Southern Illinois University Edgewater</td>
<td>School of Pharmacy 200 University Park Drive Campus Box 2000 Edwardsville, IL 62026 618-650-5150</td>
<td></td>
</tr>
<tr>
<td>New York</td>
<td>Long Island University</td>
<td>Arnold &amp; Marie Schwartz College of Pharmacy and Health DeKalb Avenue Brooklyn, NY 11201 718-488-1234</td>
<td></td>
</tr>
<tr>
<td></td>
<td>St. John's University</td>
<td>College of Pharmacy and Allied Health Professions 8000 Utopia Parkway Jamaica, NY 11439 718-990-1415</td>
<td></td>
</tr>
<tr>
<td>North Carolina</td>
<td>Union University</td>
<td>Albany College of Pharmacy 106 New Scotland Avenue Albany, NY 12208 518-694-7200</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Campbell University</td>
<td>School of Pharmacy PO Box 1090 205 Day Dorm Road, Room 101 Buies Creek, NC 27506 910-893-1685</td>
<td></td>
</tr>
<tr>
<td></td>
<td>University of North Carolina</td>
<td>School of Pharmacy Beard Hall, CB#7360 Chapel Hill, NC 27599 919-966-1121</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wingate University</td>
<td>School of Pharmacy Campus Box 3087 Wingate, NC 28174 704-233-8331</td>
<td></td>
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<tr>
<td></td>
<td>North Dakota State</td>
<td>North Dakota State</td>
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<tr>
<td></td>
<td>Virginia Commonwealth University</td>
<td>School of Pharmacy MCV Campus - Box 980581 410 North 12th Street Richmond, VA 23298 804-828-3006</td>
<td></td>
</tr>
<tr>
<td>Washington</td>
<td>University of Washington</td>
<td>School of Pharmacy H-364 Health Science Building Box 357631 Seattle, WA 98195 206-543-2030</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Washington State University</td>
<td>College of Pharmacy PO Box 646510 105 Wegner Hall Pullman, WA 99164 509-335-5901</td>
<td></td>
</tr>
<tr>
<td>West Virginia</td>
<td>West Virginia University</td>
<td>School of Pharmacy Room 1136 HSN, Health Science Center PO Box 9500 Morgantown, WV 26506 304-293-5101</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wisconsin University - Madison</td>
<td>School of Pharmacy 777 Highland Avenue</td>
<td></td>
</tr>
</tbody>
</table>
Indiana

Butler University
College of Pharmacy and Health Sciences
4600 Sunset Avenue
Indianapolis, IN 46208
317-940-9322

Purdue University
School of Pharmacy and Pharmaceutical Sciences
Heine Pharmacy Building
575 Stadium Mall Drive
West Lafayette, IN 47907
765-494-1368

Iowa

Drake University
College of Pharmacy and Health Sciences
2507 University Avenue
Des Moines, IA 50311
515-271-2172

The University of Iowa
College of Pharmacy
115 South Grand Avenue
Iowa City, IA 52242
319-335-8794

Kansas

University of Kansas
School of Pharmacy
1251 Wescoe Hall Drive
Malott Hall #2056
Lawrence, KS 66045-7582
785-864-3591

University
College of Pharmacy, Nursing, and Allied Sciences
123 Sudro Hall
1401 Albrecht Boulevard
Fargo, ND 58105
701-231-6469

Ohio

University of Cincinnati
James L. Winkle College of Pharmacy
3225 Eden Avenue
PO Box 670004
Cincinnati, OH 45267-0004
513-558-3784

Ohio Northern University
College of Pharmacy
525 South Main
Ada, OH 45810
419-772-2275

The Ohio State University
College of Pharmacy
217 Parks Hall
500 West 12th Avenue
Columbus, OH 43210
614-688-4756

Madison, WI 53705-2222
608-262-1416

Wyoming

University of Wyoming
School of Pharmacy
Department 3375
1000 E. University Avenue
Laramie, WY 82071
307-766-6120

*List of pharmacy schools taken from American Association of Colleges of Pharmacy (AACP) website [www.aacp.org](http://www.aacp.org) The listing includes colleges and schools of pharmacy whose professional degree programs have been granted full or candidate accredited status by the Accreditation Council for Pharmacy Education (ACPE) and whose requests for membership have been approved by the AACP House of Delegates.
Appendix V

Second follow-up letter to Deans

About two weeks ago we sent you a survey via email. We are asking Deans of the schools of pharmacy in the U.S. about the curricula that addresses instruction on emergency contraception.

As of today, we have not received a completed survey from you. I realize that we all have busy schedules; however we are hoping for at least a 50% response rate on this brief 3-question survey. As we mentioned before, answers are confidential and will be combined with others before disseminating the results. In case the previous questionnaire has been deleted from your email account, we have included it again and hope you will respond.

Should you have any questions or concerns, feel free to contact me (Alice Richman) or Ellen Daley at the contact information provided below. Thank you for your cooperation.

Alice R. Richman
USF College of Public Health
Phone: (813) 732-1903
Email: arichman@health.usf.edu

Ellen Daley, Ph.D.
USF College of Public Health
Phone: (814) 974-8518
Email: edaley@health.usf.edu

(Link to Survey Inserted Here)
Appendix W (p. 297-298)

List of course titles containing emergency contraception course content

Questions on Deans Survey:

You answered yes that your School does offer required courses that provide content on emergency contraception. Would you please list the titles of these courses in the box below.

You answered yes that your School does offer elective courses that provide content on emergency contraception. Would you please list the titles of these courses in the box below.

Answers provided for required courses that contain emergency contraception content:

<table>
<thead>
<tr>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women's Health (a combination course with Men's Health).</td>
</tr>
<tr>
<td>1) Pharmacologic Basis of Therapeutics III: The endocrinology section of this</td>
</tr>
<tr>
<td>basic science course includes a lecture that addresses the mechanism of action</td>
</tr>
<tr>
<td>of emergency contraceptives, the period of time during which they can be</td>
</tr>
<tr>
<td>effectively used, and their side effects.</td>
</tr>
<tr>
<td>2) Early Practice Experience I: As part of this early clinical course, the</td>
</tr>
<tr>
<td>students obtain certification from the State in emergency contraception. They</td>
</tr>
<tr>
<td>learn about prescriptive authority, and are trained to counsel patients</td>
</tr>
<tr>
<td>appropriately.</td>
</tr>
<tr>
<td>Professional Skills Development II</td>
</tr>
<tr>
<td>Health Assessment and Pharmacotherapy II</td>
</tr>
<tr>
<td>Integrated Science and Therapeutics II. It's part of a 2-hr contraception</td>
</tr>
<tr>
<td>lecture.</td>
</tr>
<tr>
<td>Therapeutics - Women's Health</td>
</tr>
<tr>
<td>Syllabi not available at this time.</td>
</tr>
<tr>
<td>PHA 5930--Issues in Contemporary Pharmacy Practice.</td>
</tr>
<tr>
<td>Clinical Therapeutics</td>
</tr>
<tr>
<td>IPDM (Integrated Pharmacology &amp; Disease Management III -</td>
</tr>
<tr>
<td>Endocrinology/Gastroenterology</td>
</tr>
<tr>
<td>Principles of Pharmacotherapy 1: Selfcare and Alternative Medicine</td>
</tr>
<tr>
<td>Principles of Pharmacotherapy 8: Special Populations</td>
</tr>
<tr>
<td>Ethics and Professional Responsibility</td>
</tr>
<tr>
<td>Pharmacotherapy II</td>
</tr>
<tr>
<td>Pharmacy Ethics</td>
</tr>
<tr>
<td>It is in one of our Pharmacotherapy courses</td>
</tr>
<tr>
<td>It is contained within a pathophysiology and therapeutics course that has a</td>
</tr>
<tr>
<td>section on women's health. The syllabus only states that the topic of</td>
</tr>
<tr>
<td>contraception is covered.</td>
</tr>
<tr>
<td>see printed out syllabus -- reproductive health course.</td>
</tr>
<tr>
<td>There are a couple of lectures in Pharmacy 505 which is a pharmacy practice</td>
</tr>
<tr>
<td>course titled Pharmaceutical Care and a case discussion in pharmacy 514 -</td>
</tr>
<tr>
<td>Pharmacy Ethics.</td>
</tr>
<tr>
<td>Pharmacotherapy 4: contemporary topics 2hours, 5th year spring semester class</td>
</tr>
</tbody>
</table>
Phrm 6206 includes endocrine and reproductive medicine.

Material Covered in Over-the-Counter Medications Course under OTC Contraception. Not specifically mentioned in the syllabus.

Integrated Sequence 4

To the best of my knowledge, I believe we are teaching this in these courses:
- PHA 551 Endocrine Disorders
- PHA 502 Pharmacy Law and Ethics
- PHA 566 Women's Health

Therapeutics I

It is taught in our Self Care course in the lecture covering the prevention of unintended pregnancy. I apologize for not being able to attach the syllabus.

In PHR 920 (Communication and Behavior in Pharmacy Practice) from a social behavioral aspect, in PHR 930 (Legal, Ethical and Access Issues in Pharmacy), in PHR 933 (Pharmacological Basis for Therapeutics: Endocrine Systems) from a pharmacologic perspective and in PHR 946 (Advanced Pharmacotherapy I) in the block on "women's health" from a pharmacological and therapeutic perspective. The course syllabi are not very descriptive of the topics - they only indicate "contraception" or "Plan B".

Integrated Therapeutics III Course and Laboratory offers review of material regarding emergency contraception. It may also be discussed in the mandatory Healthcare Ethics class.

- PHP 414 - Therapeutic Core /Endocrinology/Women's Health
- PHP 518 - Self Care 1
- PHP 519 - Elective - Self Care 2

Pathophysicsiology and Therapeutics III under Women's Health

NonPrescriptions Drug Products under contraception Possibly in pharmacology, not sure

I know we teach this but I don't know specifics on courses since several have changed recently.

Topic is covered in our Pharmacotherapy- Disease State management course. The topic is not listed in the syllabus- it is discussed as part of the contraception discussion.

Answers provided for elective courses that contain emergency contraception content:

- Overview of Contraceptive Management; I'll send the syllabus via email attachment
- "Women's Health"
- Women's Health
- PHP 519 - Self Care 2
Panel of Experts Interview Guide for Review of Pharmacists’ Questionnaire

You are being asked to be part of a special panel of experts that will review a questionnaire to make sure it is valid. The survey you are reviewing will be administered to Florida pharmacists and it is designed to measure emergency contraception knowledge, attitudes, and dispensing practices of pharmacists who practice in the state of Florida. Your honest input and feedback is essential to producing a valid instrument and I want to personally thank you for your participation.

This review will inquire about five six main topics:

1. level of knowledge about emergency contraception,
2. personal attitudes held about emergency contraception and about emergency contraception dispensing,
3. perceived social pressures around issues of dispensing,
4. perceived behavioral control over the behavior of dispensing emergency contraception,
5. emergency contraception dispensing practices and (6) basic demographics and background questions.

Directions:

First, rate each question on the instrument according to the extent to which you think it looks as if it is measuring the designated topic (i.e., face validity), with 1 = this item does not look as if it has anything to do with measuring the topic, and 7 = this item looks very much as if it is on-target with measuring the topic. Please explain your ratings that are below 5, that is, items that you do not think look as if they are measuring the designated topic. What would you do, if anything, to fix them?

Second, are there important aspects of the designated topic that the instrument is not measuring (i.e., content validity)?
<table>
<thead>
<tr>
<th>Question</th>
<th>Rating 1 2 3 4 5 6 7</th>
<th>Explain ratings &lt;5, what would you do to fix them?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1: How many pills are dispensed in Plan B® packaging? ____</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q2: Emergency contraception or Plan B® is effective if taken within how many hours of unprotected intercourse?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>____ 1 Up to 24 hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>____ 2 Up to 36 hours</td>
<td></td>
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<tr>
<td>____ 3 Up to 72 hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>____ 4 Up to 120 hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>____ 5 Not Sure</td>
<td></td>
<td></td>
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<tr>
<td>Q3: The mechanism of action of emergency contraception is most similar to (please choose one):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>____ 1 Spermicides</td>
<td></td>
<td></td>
</tr>
<tr>
<td>____ 2 Oral Contraceptives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>____ 3 Mifepristone (RU-486)</td>
<td></td>
<td></td>
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<tr>
<td>____ 4 Not Sure</td>
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<tr>
<td>Q4: If used properly, emergency contraception or Plan B® prevents pregnancy what percentage of the time?</td>
<td></td>
<td></td>
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<tr>
<td>____ 1 &lt;25%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>____ 2 25%-49%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>____ 3 50%-74%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>____ 4 75%-89%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>____ 5 &gt;89%</td>
<td></td>
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<tr>
<td>Q5: To what extent do you think the following statements are true or false?</td>
<td></td>
<td></td>
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<tr>
<td>Repeated use of emergency contraceptive pills can pose health risks.</td>
<td></td>
<td></td>
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<tr>
<td>____ 1 True</td>
<td></td>
<td></td>
</tr>
<tr>
<td>____ 2 False</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q6: To what extent do you think the following statements are true or false?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency contraceptive pills cause birth defects if taken by a pregnant woman.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>____ 1 True</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q7: To what extent do you think the following statements are true or false?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency contraception can act as an abortifacient.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>____ 1 True</td>
<td></td>
<td></td>
</tr>
<tr>
<td>____ 2 False</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q8: To what extent do you think the following statements are true or false?</td>
<td></td>
<td></td>
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<tr>
<td>The sooner a woman takes emergency contraception, the more effective it will be.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>____ 1 True</td>
<td></td>
<td></td>
</tr>
<tr>
<td>____ 2 False</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q9: To what extent do you think the following statements are true or false?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plan B® is the same as the abortion pill (RU-486).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>____ 1 True</td>
<td></td>
<td></td>
</tr>
<tr>
<td>____ 2 False</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q10: To what extent do you think the following statements are true or false?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency contraception can protect against HIV and other sexually transmitted infections (STIs).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>____ 1 True</td>
<td></td>
<td></td>
</tr>
<tr>
<td>____ 2 False</td>
<td></td>
<td></td>
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Are there important aspects of the topic emergency contraception knowledge that the instrument is not measuring (i.e., content validity)? ________________________________  


301
<table>
<thead>
<tr>
<th>Topic 2: Attitudes about Emergency Contraception</th>
<th>Rating 1 2 3 4 5 6 7</th>
<th>Explain ratings &lt;5, what would you do to fix them?</th>
</tr>
</thead>
</table>
| Q1: ____ I feel the benefits of emergency contraception outweigh the risks.  
   1=Completely Disagree  
   2=Somewhat Disagree  
   3=Not sure  
   4=Somewhat Agree  
   5=Completely Agree | | |
| Q2: ____ Emergency contraception will discourage regular contraceptive use.  
   1=Completely Disagree  
   2=Somewhat Disagree  
   3=Not sure  
   4=Somewhat Agree  
   5=Completely Agree | | |
| Q3: ____ Emergency contraception will promote promiscuity.  
   1=Completely Disagree  
   2=Somewhat Disagree  
   3=Not sure  
   4=Somewhat Agree  
   5=Completely Agree | | |
| Q4: ____ I feel uncomfortable prescribing emergency contraception for religious/ethical reasons.  
   1=Completely Disagree  
   2=Somewhat Disagree  
   3=Not sure  
   4=Somewhat Agree  
   5=Completely Agree | | |
| Q5: ____ Repeated use of emergency contraception by adolescents is wrong.  
   1=Completely Disagree  
   2=Somewhat Disagree  
   3=Not sure  
   4=Somewhat Agree  
   5=Completely Agree | | |
| Q6: ____ I feel comfortable dispensing | | |
emergency contraception to women.
1=Completely Disagree
2=Somewhat Disagree
3=Not sure
4=Somewhat Agree
5=Completely Agree

Q7: _____ I feel comfortable dispensing emergency contraception to adolescents.
1=Completely Disagree
2=Somewhat Disagree
3=Not sure
4=Somewhat Agree
5=Completely Agree

Q8: In general, I think that dispensing emergency contraception for clients is…
   _____ 1 Good
   _____ 2 Positive
   _____ 3 Beneficial
   _____ 4 Harmful
   _____ 5 Negative
   _____ 6 Bad

Q9: What is the maximum number of times emergency contraception should be given to one individual woman over her lifetime?
   _____ 1 0 times
   _____ 2 1 time
   _____ 3 2-5 times
   _____ 4 6-10 times
   _____ 5 10+ times
   _____ 6 Not sure

Are there important aspects of the topic emergency contraception attitudes that the instrument is not measuring (i.e., content validity)? ________________________________

_________________________

_________________________

_________________________

_________________________

_________________________

303
<table>
<thead>
<tr>
<th>Topic 3: Emergency Contraception Dispensing Practices (includes both intention to dispense and actual dispensing practices)</th>
<th>Rating 1 2 3 4 5 6 7</th>
<th>Explain ratings &lt;5, what would you do to fix them?</th>
</tr>
</thead>
</table>
| Q1: Does your pharmacy dispense any forms of emergency contraception (e.g. Plan B®)?  
____ 1 Yes  
____ 2 No | | |
| Q2: Have you ever been asked to fill a prescription of emergency contraception?  
____ 1 Yes  
____ 2 No | | |
| Q3: Have you personally ever filled a prescription of emergency contraception?  
____ 1 Yes  
____ 2 No | | |
| Q4: Approximately how many emergency contraceptive pill prescriptions have you personally filled in the past 12 months?  
__________ | | |
| Q5: Have you ever been asked to dispense emergency contraception over-the-counter?  
____ 1 Yes  
____ 2 No | | |
| Q6: Have you personally ever dispensed emergency contraception over-the-counter?  
____ 1 Yes  
____ 2 No | | |
| Q7: Approximately how many times have you dispensed emergency contraceptive pills over-the-counter in the past 12 months?  
__________ | | |
| Q8: To what extent are you likely to dispense emergency contraception over-the-counter to…  
Women who have experienced incest or rape  
1=Very Unlikely | | |
<table>
<thead>
<tr>
<th>Q9: To what extent are you likely to dispense emergency contraception over-the-counter to…</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women who have experienced a problem with their birth control method</td>
</tr>
<tr>
<td>1=Very Unlikely</td>
</tr>
<tr>
<td>2=Unlikely</td>
</tr>
<tr>
<td>3=Not sure</td>
</tr>
<tr>
<td>4=Likely</td>
</tr>
<tr>
<td>5=Very Likely</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q10: To what extent are you likely to dispense emergency contraception over-the-counter to…</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexually active 18, 19, and 20 year olds</td>
</tr>
<tr>
<td>1=Very Unlikely</td>
</tr>
<tr>
<td>2=Unlikely</td>
</tr>
<tr>
<td>3=Not sure</td>
</tr>
<tr>
<td>4=Likely</td>
</tr>
<tr>
<td>5=Very Likely</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q11: To what extent are you likely to dispense emergency contraception over-the-counter to…</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women who request the method after having unprotected sexual intercourse</td>
</tr>
<tr>
<td>1=Very Unlikely</td>
</tr>
<tr>
<td>2=Unlikely</td>
</tr>
<tr>
<td>3=Not sure</td>
</tr>
<tr>
<td>4=Likely</td>
</tr>
<tr>
<td>5=Very Likely</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q12: To what extent are you likely to dispense emergency contraception over-the-counter to…</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men requesting emergency contraception</td>
</tr>
</tbody>
</table>
Table 1: Dispensing Emergency Contraception by Prescription

| Q13 | To what extent are you likely to dispense emergency contraception by prescription to...
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Women who have experienced incest or rape</td>
</tr>
<tr>
<td></td>
<td>1=Very Unlikely</td>
</tr>
<tr>
<td></td>
<td>2=Unlikely</td>
</tr>
<tr>
<td></td>
<td>3=Not sure</td>
</tr>
<tr>
<td></td>
<td>4=Likely</td>
</tr>
<tr>
<td></td>
<td>5=Very Likely</td>
</tr>
</tbody>
</table>

| Q14 | To what extent are you likely to dispense emergency contraception by prescription to...
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Women who have experienced a problem with their birth control method</td>
</tr>
<tr>
<td></td>
<td>1=Very Unlikely</td>
</tr>
<tr>
<td></td>
<td>2=Unlikely</td>
</tr>
<tr>
<td></td>
<td>3=Not sure</td>
</tr>
<tr>
<td></td>
<td>4=Likely</td>
</tr>
<tr>
<td></td>
<td>5=Very Likely</td>
</tr>
</tbody>
</table>

| Q15 | To what extent are you likely to dispense emergency contraception by prescription to...
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sexually active teens under age 18</td>
</tr>
<tr>
<td></td>
<td>1=Very Unlikely</td>
</tr>
<tr>
<td></td>
<td>2=Unlikely</td>
</tr>
<tr>
<td></td>
<td>3=Not sure</td>
</tr>
<tr>
<td></td>
<td>4=Likely</td>
</tr>
<tr>
<td></td>
<td>5=Very Likely</td>
</tr>
</tbody>
</table>

| Q16 | To what extent are you likely to dispense emergency contraception by prescription to...
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>still alive</td>
</tr>
<tr>
<td></td>
<td>1=Very Unlikely</td>
</tr>
<tr>
<td></td>
<td>2=Unlikely</td>
</tr>
<tr>
<td></td>
<td>3=Not sure</td>
</tr>
<tr>
<td></td>
<td>4=Likely</td>
</tr>
<tr>
<td></td>
<td>5=Very Likely</td>
</tr>
</tbody>
</table>


Women who request the method after having unprotected sexual intercourse
1=Very Unlikely
2=Unlikely
3=Not sure
4=Likely
5=Very Likely

Are there important aspects of the topic **emergency contraception dispensing practices** that the instrument is not measuring (i.e., content validity)? 

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1: My partners/colleagues think that I _________ dispense emergency contraception.</td>
<td>Rating</td>
<td>Explain ratings &lt;5, what would you do to fix them?</td>
</tr>
<tr>
<td>1=Definitely Should Not</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>2=Probably Should Not</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3=Neutral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4=Probably Should</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5=Definitely Should</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q2: My professional organization recommends that I _________ dispense emergency contraception.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1=Definitely Should Not</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2=Probably Should Not</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3=Neutral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4=Probably Should</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5=Definitely Should</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q3: My boss thinks that I _________ dispense emergency contraception.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1=Definitely Should Not</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2=Probably Should Not</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3=Neutral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4=Probably Should</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5=Definitely Should</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Q4: My corporation or pharmacy thinks that I________ dispense emergency contraception.
   1=Definitely Should Not
   2=Probably Should Not
   3=Neutral
   4=Probably Should
   5=Definitely Should

Q5: In general, most people or groups that are important to me think that I________ dispense emergency contraception.
   1=Definitely Should Not
   2=Probably Should Not
   3=Neutral
   4=Probably Should
   5=Definitely Should

Q6: My clients or customers thinks that I________ dispense emergency contraception.
   1=Definitely Should Not
   2=Probably Should Not
   3=Neutral
   4=Probably Should
   5=Definitely Should

Are there important aspects of the topic perceived social pressures concerning dispensing practices of emergency contraception that the instrument is not measuring (i.e., content validity)? __________________________

Topic 5: Perceived Ease or Difficulty (comfort level) with Dispensing Emergency Contraception

<table>
<thead>
<tr>
<th>Topic 5: Perceived Ease or Difficulty (comfort level) with Dispensing Emergency Contraception</th>
<th>Rating</th>
<th>Explain ratings &lt;5, what would you do to fix them?</th>
</tr>
</thead>
</table>
| Q1: How easy would it be for you to…
   _____ Counsel clients about emergency contraception
   1=Very Difficult
   2=Difficult
   3=Not sure |

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<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4=Easy</td>
<td>5=Very Easy</td>
</tr>
<tr>
<td>Q2: How easy would it be for you to…</td>
<td>_______ Dispense emergency contraception</td>
</tr>
<tr>
<td>1=Very Difficult</td>
<td>2=Difficult</td>
</tr>
<tr>
<td>3=Not sure</td>
<td>4=Easy</td>
</tr>
<tr>
<td>5=Very Easy</td>
<td></td>
</tr>
<tr>
<td>Q3: How easy would it be for you to…</td>
<td>_______ Refuse to dispense emergency contraception</td>
</tr>
<tr>
<td>1=Very Difficult</td>
<td>2=Difficult</td>
</tr>
<tr>
<td>3=Not sure</td>
<td>4=Easy</td>
</tr>
<tr>
<td>5=Very Easy</td>
<td></td>
</tr>
<tr>
<td>Q4: How easy would it be for you to…</td>
<td>_______ Educate clients about emergency contraception</td>
</tr>
<tr>
<td>1=Very Difficult</td>
<td>2=Difficult</td>
</tr>
<tr>
<td>3=Not sure</td>
<td>4=Easy</td>
</tr>
<tr>
<td>5=Very Easy</td>
<td></td>
</tr>
<tr>
<td>Q5: How comfortable are you talking about emergency contraception with customers?</td>
<td>1=Very Uncomfortable</td>
</tr>
<tr>
<td>2=Somewhat Uncomfortable</td>
<td>3=Somewhat Comfortable</td>
</tr>
<tr>
<td>4=Very Comfortable</td>
<td></td>
</tr>
</tbody>
</table>

Are there important aspects of the topic perceived ease or difficulty (comfort level) with dispensing emergency contraception that the instrument is not measuring (i.e., content validity)? ____________________________

______________________________

______________________________

______________________________

______________________________

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### Topic Measuring: Years in Practice

**Q1:** How many years have you been in practice (registered as a pharmacist)?

____ year/years

### Topic Measuring: Type of Pharmacy

**Q2:** The type of pharmacy where you work could be best described as (if you have more than one job, please circle the number that corresponds to your primary type of pharmacy)

1. Retail
2. Independent
3. Chain
4. Hospital
5. Nuclear
6. Government
7. VA
8. Academia
9. HIS
10. Home Infusion
11. Other: Please specify

_________________________

### Topic Measuring: Employment Status

**Q3:** What is your current employment status?

1. Full-time
2. Part-time
3. Retired

### Topic Measuring: Pharmacy Availability of Birth Control Products

**Q4:** Does your pharmacy carry any of the following birth control products?

- Condoms
  - Yes: 1
  - No: 0

---

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<table>
<thead>
<tr>
<th>Topic Measuring: Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q5: What is your gender?</td>
</tr>
<tr>
<td>1 Female</td>
</tr>
<tr>
<td>2 Male</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Topic Measuring: Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q6: How old are you?</td>
</tr>
<tr>
<td>______________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Topic Measuring: School of Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q7: Where did you go to school to become a pharmacist?</td>
</tr>
<tr>
<td>_________________________________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Topic Measuring: Year of Graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q8: What year did you graduate school to become a pharmacist?</td>
</tr>
<tr>
<td>__________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Topic Measuring: Religion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q9: If you had to choose only one, which would it be?</td>
</tr>
<tr>
<td>1 Religious</td>
</tr>
<tr>
<td>2 Spiritual</td>
</tr>
<tr>
<td>3 Religious and Spiritual</td>
</tr>
<tr>
<td>4 Undecided</td>
</tr>
<tr>
<td>5 None of the above</td>
</tr>
<tr>
<td>6 Not religious or Spiritual</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Topic Measuring: Religious Identity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q10: If you had to choose one, which religious group do you most closely identify with?</td>
</tr>
<tr>
<td>1 Roman Catholic</td>
</tr>
<tr>
<td>2 Baptist</td>
</tr>
<tr>
<td>3 Methodist</td>
</tr>
<tr>
<td>4 Episcopalian</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>5</td>
</tr>
</tbody>
</table>

**Topic Measuring: Ethnicity**

Q11: What is your ethnicity?
- 1 Caucasian
- 2 African American
- 3 Hispanic
- 4 Asian
- 5 Multi-Racial
- 6 Other please specify

(___________________)

**Topic Measuring: Marital Status**

Q12: What is your marital status?
- 1 Married
- 2 Living with a partner
- 3 Divorced
- 4 Separated
- 5 Widowed
- 6 Never been married

**Topic Measuring: Ethnicity**

Q13: To what extent are you likely to dispense emergency contraception by prescription to...

Women who have experienced incest or rape
- 1=Very Unlikely
- 2=Unlikely
- 3=Not sure
- 4=Likely
Q14: What is your political affiliation?
   ____ 1 Republican
   ____ 2 Democratic
   ____ 3 Independent
   ____ 4 None/Undecided

Are there important aspects of the questions asked in this last section titled Demographic & Background Questions that the instrument is not measuring (i.e., content validity)?

Thank you for your time. Please save your answers and follow the directions outlined in the email provided.
About the Author

Alice Richman received a Bachelor’s Degree in English Literature with a minor in Women’s Studies from North Carolina State University in 1999 and a Master’s Degree in Public Health with a concentration in Maternal and Child Health from Boston University in 2003. Following the completion of her MPH, she began the Ph.D. program at the University of South Florida College of Public Health in 2003.

Over the last eight years, Ms. Richman has worked in a variety of public health settings with diverse communities, providing both face-to-face client contact as well as being involved in policy, planning, research, and training. She has been engaged in a variety of research projects, taught several public health courses at a variety universities, has both independently written and co-authored and published her work, and has disseminated findings at regional and national conferences. After graduation, Ms. Richman will begin a two-year post doctoral fellowship at the University of North Carolina at Chapel Hill School of Public Health.