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The Knowledge, Attitudes, and Experiences of Youg Couples with Emergency Contraceptive Pills

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The Knowledge, Attitudes, and Experiences of Young Couples with Emergency Contraceptive Pills

by

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DISSERTATION

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[redacted]

Dedication

To the young couples who generously agreed to participate in the study
and shared of their time and of themselves

To my parents who encouraged me to pursue my education

To Hilda Merolli RN MSN
who provided me with the support and encouragement
I needed to become a nurse

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THE KNOWLEDGE, ATTITUDES, AND EXPERIENCES,

OF YOUNG ADULT COUPLES

WITH EMERGENCY CONTRACEPTIVE PILLS (ECP)

By

Richard Joseph Beaulieu

Abstract

The purpose of this Grounded Theory study was to explore the reasons for the seemingly underuse of emergency contraceptive pills (ECP) in older adolescent and young adults. Knowledge, attitudes, experiences, partner influence, and couple dynamics as they relate to decision making about ECP use were explored. Observations and interviews were conducted with 22 sexually involved, heterosexual couples with members ranging from 18 to 25 years of age. Basic knowledge of ECP was a requirement but prior use was not. Both individual and couple interviews were conducted with each dyad.

Participants revealed several meanings that ECP use held for them based on moral principles, personal responsibility, and the safety and efficacy of ECP. Each of these categories represented a continuum of value judgments. Despite the relatively high educational level of the participants, these ascribed meanings were often based on incomplete or erroneous information. The majority of couples favored ECP use though often in limited circumstances only; within couple concordance on this issue was high. Couple dynamics and decision making about ECP use revealed issues of trust and power, with female participants expressing feelings of control and their partners expressing

vulnerability. Theses emotions stemmed from the reality that females could make the final decision about ECP use. Perceived and actual contraceptive responsibility sometimes varied both with individuals and within couples.

Implications for practice include more comprehensive health education regarding contraception in general, including ECP, with a concerted effort to including young men in the process. Clinicians need to be aware of popular misconceptions about ECP so that they might provide accurate information. Those practicing with young adult populations also need to be aware that contraceptive decision making does not occur in isolation, but rather often includes a young woman's partner, and therefore, realize the salience of couple dynamics in their approach. Additionally, the results of this study may provide a basis for future theory development regarding ECP decision making in young adult couples.

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Chapter 1.

Introduction

The United States has one of the highest rates of unintended pregnancy in young women among all industrialized nations (Alan Guttmacher Institute [AGI], 2002; Manlove, Ikramullah, Minicieli, Holcombe, & Danish, S., 2009). In 2005, an estimated 2.4 million pregnancies occurred among females less than 25 years old (Center for Disease Control and Prevention [CDC], 2009). Thirty percent of those pregnancies that occurred in 20-24 year olds and greater than 50% of those in 18 & 19 year olds were unintended (CDC, 2005). The number of unintended pregnancies is higher among women 18-24 years old than any other age-group (Finer & Henshaw, 2006). Unfortunately, this disproportionate incidence is an extension of the pregnancy rate found in younger adolescents; nearly 750,000 women aged 15-19 become pregnant each year (Allen Guttmacher Institute [AGI], 2006a). Of the approximate 1.21 million abortions performed in the US annually, one half is performed on females less than 25 years of age (AGI, 2009). In addition to increased abortion rates, poor health outcomes associated with unwanted pregnancies are well documented (Cheng, Schwartz, Douglas and Huron, 2009; Mohllajee, Curtis, & Morrow, 2007).

Young women who become pregnant as adolescents are at a greater risk for school dropout, substance use, poverty, and depression (Elfenbein & Felice, 2003). Their children have a higher incidence of prematurity, low birth weight, learning problems, and are at a greater risk for abuse (Sawsan, Gantt, & Rosenthal, 2004). Women of all ages who experience an unintended pregnancy are more likely to engage in unhealthy prenatal behaviors such as late initiation of prenatal care (Cheng, et al., 2009) and exposure to possible teratogens (Than et al., 2005). Several studies have also documented the negative postpartum outcomes for these women, including depression and decreased

quality of life (AGI, 2006; Cheng, et al.). More concerning, recent data reveals a greater than 3% rate increase in births among all females less than 25 years of age from 2005 to 2006—this is the largest increase in this population since 1989 (Hamilton, Martin, & Ventura, 2009).

Emergency contraceptive pills (ECP) or "morning after pills" are indicated for use after unprotected sexual intercourse to prevent pregnancy (*American College of Obstetricians and Gynecologists* [ACOG] *Practice Bulletin*, 2005). Its origins evolved from veterinary medicine dating back to the 1920's, when it was demonstrated that the administration of postcoital estrogens interfered with pregnancy in dogs and horses. However, the first documented case of its clinical use in humans did not occur for another forty years, when physicians in the Netherlands administered estrogen to a young adolescent female who had been raped at midcycle (Ellertson, 1996).

The availability of postcoital hormonal contraception lagged for several more decades in the United States (Castle, Friedlander, Byrd, & Coeytaux, 1999). In contrast, dedicated products for ECP were approved and widely prescribed in Europe since 1984 (Ellertson, Schocet, Blanchard, & Trussel, 2000). While no dedicated product was available in the US, the Yuzpe method of ECP (Yuzpe, Thurlow, Ramzy, & Leyshon, 1974), which required only ordinary birth control pills (OCPs) that were already approved by the Food and Drug Administration [FDA], was at hand. However, to use OCPs for emergency contraception was considered "off-label use", and therefore lacked legitimacy. This situation changed in the mid 1990's when ACOG (1996) published clinical guidelines regarding its use, and the FDA (1997) issued a Federal Register notice, which approved six brands of oral contraceptive pills to be used as ECP. Both

publications included clinical indications and dosages, and declared the method safe and effective (Coeytaux, & Pillsbury, 2001).

There are two methods currently approved for use in the U.S., the Yuzpe regiment (two doses of 0.1 mg ethinyloestradiol and 0.5mg levonorgestrel, 12 hrs apart) and Plan B™, a dedicated product (two tablets each containing 0.75mg. levonorgestrel as one dose or 12 hrs apart). Either product needs to be taken as soon as possible but within 72-120 hrs after intercourse, since efficacy decreases over time (ACOG, 2005; Ellertson, et al., 2003). The primary mechanism of action of both treatments is inhibition or delay of ovulation (Croxatto, Ortiz, & Muller, 2003; Croxatto, et, al.). While some statistical evidence indicates that there may also be post-ovulatory pathways that also contribute to ECP's efficacy, all actions occur prior to implantation of a fertilized ovum—ECP has no effect on an established pregnancy (Croxatto, et al., 2001; Trussel, Ellertson, Stewart, Raymond, & Sochet, 2004).

The safety and efficacy of both formulations are supported by a large body of literature (Ellertson, et al., 2003; Kesharz, Roland, Merchant, & McGreal, 2002; World Health Organization [WHO], 1998). The most common side effects are nausea and a slight limited alteration in menses pattern (Raymond, et al. 2006). While both products are still approved for use in the US, recent studies have found levonorgestrel/Plan B™ to be more effective and produce fewer side effects (Cheng, et al., 2006); therefore, the Yuzpe method is only recommended in areas where levonorgestrel is not available (Black, 2009).

Despite its safety and efficacy, increasing access to ECP was met with resistance from several forces outside the health care community. Social conservatives and the Bush

administration worked to keep ECP from becoming available over the counter (Kaufman, 2004)—a change from prescription to non-prescription status would greatly increase ECP accessibility. In 2004, the FDA issued a "Not Approvable" letter in response to a request from the manufacturer to change Plan B™ to over-the-counter status (Harris, May 7, 2004). The denial overrode a 23-4 approval voted by members of FDA advisory committees, the Non-Prescription Drug Advisory committee, and the Advisory Committee for Reproductive Health Drugs.

The denial's ostensible reason was potential for harm to young women who might use ECP instead of protecting themselves against both pregnancy and disease by using condoms—a stance the FDA took despite overwhelming evidence to the contrary (Fincham, Harris, Fassett, & Richards, 2005; Wood, Drazen, & Greene, 2005). Population research experts, politicians, and reproductive health groups charged that the denial was a case of politics triumphing over science (Planned Parenthood, 2005; NARAL, 2005; Harris, May 7, 2004). The most senior FDA official on women's health issues resigned from the agency later that year in protest over what she described as political interference in the decision-making process (Kaufman, September 5, 2005). A detailed report by the nonpartisan Government Accountability Office (GAO) subsequently confirmed that the FDA's decision on Plan B™ was based on political issues and not on science standards. (Alonso-Zadivar, 2005). Critics charged that Plan B was a casualty in a larger cultural war embracing everything from birth control to gay marriage (Shorto, 2006).

Finally, in response to rising criticism, in 2006 the FDA approved Plan B™ for sale without a prescription, ending a three year battle (Allday, August 25, 2006).

However, it was not a complete victory for women's health advocates. Contrary to the recommendations of adolescent and young adult health experts (American Academy of Pediatrics [AAP], 2005; Society for Adolescent Medicine [SAM], 2004), the new policy still required young women under 18 years of age to obtain a prescription from a medical provider prior to purchasing Plan B™; a requirement that remains in effect presently.

This policy is particularly unfortunate since ECP is not only safe and effective; it is a form of contraception ideally suited to the cognitive and emotional development of most adolescents and some young adults. Adolescent sexuality and sexual behavior must be viewed within the context of global adolescent development, including cognitive development—specifically the development of formal operational thought processes. The ability to envision potential consequences of actions is a key aspect of the operational thought process; the incomplete development of this ability significantly increases health risks associated with sexual behavior (Feldman & Middleman, 2002; Gordon, 1990; Steinberg, 2004). Young people, who have not achieved this level of development and are also sexually active, are in the greatest need of ECP style contraception, as this method benefits those not engaged in advanced planning.

Fortunately, the political storm over access to emergency contraception has begun to abate, and public health initiatives have been instituted to increase awareness of ECP (ACOG, 2006) with varied success (Baldwin, et al., 2008; Cheng, Gulmezoqlu, Piaggio, Ezcurra, & Van Look, 2008). In addition to lack of awareness, other barriers to access still exist, particularly cost—ECP retails from $25 to $40 per dose (Allday, 2006; Stein, 2006). Yet barriers other than access must also prevail, since many who have access to ECP—including young women who have advance doses—are not using it (Raine et al.,

2005). As James Trussel, ECP advocate and director of the office of population research at Princeton University, has stated, "Emergency contraceptives don't work if they are left in the drawer. And studies have shown that even if women have the pills on hand, the drawer is where they remain" (Harris, 2006, August 25). Reasons for this underutilization of ECP are not entirely clear.

Recent studies indicate that partner influence and couple dynamics may provide a partial explanation (Bayley, Brown, & Wallace, 2009; Free & Ogden, 2005). Young women's birth control utilization is a complex processes (Adler, 1981; De Visser, 2007). The arena of sexuality and reproductive decision making includes a myriad of emotions along with cognitive processes that are impacted by many contextual factors, both internal—such as level of development, and external—such as support systems (Lerner, 2002). One of these factors may also be partner influence. Previously, few reproductive health studies focused on the couple as the unit of analysis (Becker, 1996), and the majority of those that did had limited samples of adult couples (Cubbins, Jordan, Rutter, & Tanfer, 2007, March). The small number that focused on young couples and contraceptive decision making did so in relation to forms of contraception other than ECP, such as condoms (Ryan, Franzetta, Manlove, & Holcomb, 2007; Manning, Longmore, & Giordano 2000), but ECP may require a different level of negotiation. It is an area in which further research is needed.

The purpose of this dissertation project was to use qualitative methods— a grounded theory study, to explore and better understand the reasons for the underuse of emergency contraception (ECP) among older adolescents and young adults. Developmental Contextualism (Lerner, 2002) provided the theoretical framework.

Developmental Contextualism is one perspective of developmental systems theory, which emphasizes the relationships between an individual and their context over time. Developed by Richard Lerner (2002) as an orientation to the study of human development, Developmental Contextualism views human beings as engaged in an ongoing, life-long interaction with their environments or contexts. This interaction is bidirectional: individuals are not only molded by context, they also influence the world in which they live, and are subsequently affected by a world that has been altered by their presence. This reciprocal interaction occurs at different levels of organization, both internal (biological and developmental), and external (family, community, culture). Developmental Contextualism stresses that the relationship of reciprocal interaction between individual and context is possible in part because humans are diverse and capable of change throughout the life span. This theory, while providing a framework for the study, melds well with the principles of grounded theory methodology; it does not limit the focus of the research, but rather emphasizes the importance of contextual influences and therefore, allows for the findings to be constructed from the data (Charmaz, 2006).

The research questions were:

1) What are the nature of experiences, perceptions, and attitudes of young women ages 18 to 25 and their sexual partners toward hormonal emergency contraception (ECP)?
2) What are the conditions, including barriers and facilitators to the use of ECP, among young women and their partners who have considered its use?

3) What is the process that young women and their partners use to negotiate the use of ECP?

This dissertation consists of five chapters: an introductory chapter; chapters 2, 3, and 4 that are separate papers that have been prepared for submission for publication; and a final chapter. The second chapter is entitled "Global perspectives on adolescents' and young adults' awareness and knowledge of ECP". The paper is a review of the literature, which concentrates on studies that focus exclusively on adolescent and young adult groups, or that isolate results for these subgroups. Specific factors examined include general awareness of ECP, knowledge of effective ECP methods and timing, attitudes or fears about ECP use, and the sources from which young women obtained knowledge of ECP. Chapter three is entitled "The inherent meanings of ECP use among young couples". The purpose of this paper is to present the findings related to the meanings of ECP use, explicit and liminal, ascribed by the participants, which often guided their decision making. Methods of grounded theory were used to collect and analyze data from 22 young adult heterosexual couples in sexual relationships. Three face-to-face interviews were conducted with each couple: one individually with each partner, and one with the couple dyad. The fourth chapter is entitled: "Decision making of young adult couples regarding ECP use". Using data from the same study, this paper presents findings about partner influence and couple dynamics in decision making regarding ECP use. The final chapter summarizes and synthesizes the findings of chapters 2, 3, and 4, and provides suggestions for future research based on the findings of this paper.

Chapter 2.

Abstract

Background: Unintended pregnancy among adolescent and young adult women is a worldwide problem that presents significant health and social problems. Emergency contraceptive pills (ECP) might greatly reduce the incidence of these pregnancies. Despite widespread availability of ECP, it is underutilized in this population.

Objectives: This review aimed to delineate the current state of awareness and knowledge of ECP among adolescents and young adults and identify areas for future education.

Design: Relevant literature was identified through a search of CINAHL, MEDLINE, POPLINE, PsychINFO, ERIC, and Cochrane library published in the past five years, augmented by reference list searching and hand searches of select journals.

Findings: Despite widespread availability, awareness and knowledge of ECP remain low among young adults, who obtain most reproductive health information from sources other than healthcare providers.

Conclusion: Nurses who practice with young adults should be aware of the ECP knowledge gap and should strive both to increase awareness and to provide evidence-based information about ECP to this vulnerable population.

Keywords: Unintended pregnancy; Adolescents; Emergency contraceptive pills (ECP); Awareness; Knowledge

What is already known about this topic:

- Unintended pregnancy among young women is a public health problem worldwide.
- Emergency contraception pills (ECP) are a safe and effective form of contraceptive well suited to the cognitive and developmental levels of this population, especially younger adolescents.
- ECP is greatly underutilized by young women.

What this paper adds:

- Adolescent and young adult awareness, knowledge, and attitudes regarding ECP vary but remain low in most parts of the world. This paper is the first to provide a global perspective to this data, and contextual factors affecting low ECP use.
- Better understanding of universal and culturally specific barriers to ECP knowledge can improve nursing practice with young women and their partners.

1. Introduction

Unintended pregnancy is a worldwide problem that affects women and society (Boonstra, 2007b; United Nations Population Fund [UNFPA], 2008). Worldwide, an estimated two in every five pregnancies culminate in abortion or unplanned birth (United Nations [UN], 2003). Many of these pregnancies occur after unintended or unprotected sex. Despite the introduction of a safe contraceptive method for use after such an event, adolescents' use of emergency contraception pills (ECP) is minimal. This systematic review of the literature will examine reasons for this phenomenon to suggest implications for nursing practice and to generate future research. Surveys indicate that a large percentage of pregnancies, in particular adolescent pregnancies, are unwanted (Darroch,

Singh, & Frost, 2001). Estimates range from 10-16% in India and Pakistan, where early marriage and childbearing are still common, to 50% in other parts of Asia, Africa, Latin America, and the Caribbean (Alan Guttenberg Institute [AGI], 1998), and as high as 93% in some developing countries (Singh, 1998). An estimated 2 to 4.2 million adolescent abortions are performed annually in non-industrialized nations (Boonstra, 2007a); many are illegal and performed under unsafe conditions (AbouZahr, & Warlaw, 2004) with resultant high rates of morbidity and mortality (Olukoya, Kaya, Ferguson, AbouZahr, 2001).

Adolescent pregnancy rates vary considerably in industrialized nations (Singh & Darroch, 2000). In Japan there are only 4 births per 1,000 adolescents aged 15–19; yet in Bulgaria, Romania, the United States (U.S.), and Great Britain (*Social Exclusion Unit Report*, 2003), adolescent pregnancy remains a significant public health problem despite a continuous downward trend over the past 25 years (AGI, 2006a; Manlove, Ikramullah, Minicieli, Holcombe, & Danish, 2009). In the U.S. almost 750,000 women aged 15-19 become pregnant each year, and approximately 30% of these pregnancies result in abortion (AGI, 2006b). The most recent data for 2006 indicate a 3% increase in pregnancies among this group (Hamilton, Martin, & Ventura, 2007). Abortion ratio rates (percentage of pregnancies that end in abortion) for younger adolescents in the U.S. remain higher than for any other age group (Center for Disease Control and Prevention [CDC], 2005), and are strikingly high in many developed countries (Avery & Lazdane, 2008; Singh & Darroch). Although legal abortions are relatively safe (0.6 deaths per 1,000 in US), the financial and emotional costs are significant (AGI, 1999, 2006; Benagiano, & Pera, 2000).

Adolescent pregnancies that result in live births also present a significant health and social problem (Lindberg, 2003; Hoffert, Reed, & Mott, 2001). Many adolescents from developing countries are physically immature, increasing their risks for obstetrical complications (AGI, 2002; Cohen, 2007). Their infants have a 30% greater risk of dying in their first year of life compared to those born to older women (AGI). U.S. infants of adolescent mothers have a higher incidence of prematurity, low birth weight, and learning problems, and are at greater risk for abuse (Elfenbein & Felice, 2003; Sawsan, Gantt, & Rosenthal, 2004). Adolescent mothers often lose some control over their futures (UNFPA, 2008) and are at risk for poverty, depression, and decreased access to education (Elfenbein, & Felice; Kilma; Sawsan, Gantt, & Rosenthal).

Emergency contraceptive pills ("ECP" or "morning after pills") are indicated to prevent undesired pregnancy after unprotected sexual intercourse. The two approved formulations of ECP available worldwide (Schiappacasse & Diaz, 2006; Mittal, 2008) are the Yuzpe regimen (two doses of 0.1 mg ethinyloestradiol and 0.5mg levonorgestrel, 12 hours apart), which can be formulated from ordinary oral contraceptives (Yuzpe, Thurlow, Ramsey, & Leyshon, 1974), and levonorgestrel, usually marketed as a dedicated ECP product and taken as a single dose (Westly, von Hertzen, & Faudes, 2007). Either product needs to be taken as soon as possible, but preferable within 72-120 hrs after intercourse since efficacy decreases with time ("American College of Obstetricians and Gynecologists [ACOG] Practice Bulletin", 2005). The regimen works primarily by inhibiting or delaying ovulation (Croxatto, et al., 2001; Trussel, Ellertson, Stewart, Raymond, & Sochet, 2004), although some additional post-ovulatory

mechanisms may also be present (Croxatto, Ortiz, & Miller, 2003; Sheffer-Mimouni, Pauzner, Maslovitch, Lessing, & Gamzu, 2003).

The World Health Organization [WHO] (1998) considers ECP to be one of the safest forms of contraception. The methods have been prescribed in Europe for over twenty years, and many studies document their safety, efficacy, and minimal side effects (Cheng, Gulmezoqlu, Piaggio, Ezcurra, & Van Look, 2008; Ellertson, 1996; Schochet et al., 2004). ECP is well tolerated by adolescents (Harper, Rocca, Darney, von Hertzen, & Raine 2004; Sambol, et al., 2006). Levonorgestrel alone as emergency contraception (EC) is more effective and has fewer side effects than the Yuzpe regimen (WHO, 1998, 2007) and is on the WHO "List of Essential Medicines" (Westley, et al., 2007). Even the estrogen-containing Yuzpe regimen has no contraindications due to the short duration of exposure and the low total hormone content (Trussel, Ellertson, Stewart, Raymond, & Sochet, 2004; Vasilakis, Jick, & Jick, 1999).

There is no evidence that ECP increases the incidence of ectopic pregnancy (Sheffer-Mimouni, et al., 2003), nor does the method interrupt an established pregnancy (ACOG, 2005). Few studies have examined teratogenic effects of ECP in women who became pregnant despite treatment (Ahn, et al. 2008); however, many have examined the relationship between traditional oral contraceptives and birth defects and found no adverse outcomes (Bracken, 1990). ECP is more widely approved for use than other post-coital contraceptives such as mifepristone ("RU486") (Gemzell-Danielsson, Mandl & Marions, 2003; Von Hertzen et al., 2002) and can be dispensed in localities where the absence of medical care renders impracticable the implantation of an intrauterine device

(IUD), still one of the most effective forms of postcoital contraception (Bhathena & Guillebaud, 2008; Deans & Grimes, 2009).

A common concern is that some women might use ECP as their primary means of birth control instead of more comprehensive barrier or hormonal methods, thereby increasing their risk for pregnancy and sexually transmitted infections (STIs). Early studies with women of all reproductive ages did not support these concerns (Perez, 1995; Rogala, 1995; Pyett, 1996). Subsequent studies focused on adolescents obtained similar findings; advance supply of ECP did not increase sexual risk taking or the incidence of STIs, but did increase the likelihood that ECP would be taken--and taken sooner--when indicated (Ekstrand, Larsson, Darj, & Tyden, 2008; Raine, et al., 2005; Raymond, Stewart, Weaver, Monteith, & Van Der Pol, 2006). The most recent data indicate that given a free unlimited advance supply of ECP, some young women may substitute it for their usual contraceptive method (Raymond & Weaver, 2008; Weaver, Raymond, & Baecher, 2009). This form of unrestricted access is, however, far more aggressive than simple OTC availability.

Early predictions that hormonal ECP could reduce the incidence of unintended pregnancy by up to 80% (Cheng, Gulmezoqlu, Piaggio, Ezcurra, & Van Look, 2008; Trussel, 2004) have proved overly optimistic (Trussel, Swartz, Guthrie, & Raymond, 2008). A contradictory finding in recent adolescent studies is that advance provision increased ECP use, but pregnancy rates did not vary. Nevertheless, because ECP can reduce pregnancy risk for individual women, improved awareness is desirable (Raymond, Trussel, & Pollis, 2007). Knowledge of ECP can be particularly helpful to adolescents, who have not yet developed formal operational thought processes required to envision

potential consequences of actions (Lerner & Steinberg, 2004) and are therefore more likely to engage in sexual activity without a comprehensive plan for contraception (Gordon, 1990; Steinberg, 2004; Nelson & Neinstein, 2002). Because ECP requires no advance planning, it is a form of contraception ideally suited to the cognitive and emotional development of adolescents.

2. Purpose of Review

This systematic review will survey research that addresses awareness, knowledge levels, and attitudes of adolescent women toward emergency contraception. Specific factors examined include general awareness of ECP, knowledge of effective ECP methods and timing, attitudes or fears about ECP use, and the source from which young women obtained knowledge of ECP. Although there is expanding literature on ECP knowledge and use among women of all ages (Campbell, Busby, & Steyer, 2008; Gee, Delli-Bovi, Chuang, 2007), this review concentrates on studies that focus exclusively on adolescents, or that isolate results for an adolescent group. This narrow focus will help delineate the current state of adolescent awareness of emergency contraception and identify areas for future education.

3. Methods

3.1 Search strategy

Established methods for systematic literature review were used (Engberg, 2008; Thomas, Ciliska, Dobbins, & Micucci, 2004). Inclusion criteria included all articles published in English for the past five years, from January 2003 until the present. Six electronic databases were searched using initial search terms ‘contraception’, ‘emergency contraception,’ ‘ECP,’ ‘postcoital contraception,’ ‘Yuzpe,’ ‘levonorgestrel,’ ‘morning

after,' 'adolescent,' 'teen,' 'young adult', and additional terms emerging during the search process: 'attitudes,' 'awareness,' 'knowledge,' 'decision making,' 'health education,' 'sex education' to select relevant articles as follows: CINAHL (537), MEDLINE (660), POPLINE (545), PsychINFO (299), ERIC (36), and Cochrane library (21). Hand searches of select journals were also conducted.

3.2 Relevance to research question

Only articles which contained an assessment of knowledge and/or awareness of emergency contraception were included in the study. These articles were further screened for population type: those that did not clearly delineate adolescents or young adults in the result section were discarded. Nearly the entire sample of remaining articles addressed hormonal emergency contraception; one that covered knowledge of IUDs was deleted. The remaining 44 articles were assessed for methodological quality.

3.3 Methodological issues

Nearly all quantitative studies consisted of a cross-sectional design (n=39), most of them using a written questionnaire (n=29). The only exceptions were two quasi-experimental intervention studies conducted in Honduras and Sweden. Common shortcomings were threats to external validity and limited generalizability due to flaws in sampling method. Four notable exceptions were studies based on national samples. Most quantitative studies did not address reliability or validity of the questionnaires. All utilized appropriate statistical methods for analysis, though most were limited to descriptive statistics. Studies using face-to-face and telephone interview methods (n=10) contained many of the flaws noted for the written questionnaire studies in addition to

possible “social acceptability” bias, especially regarding attitudes to emergency contraception. The qualitative studies (n=4) all met established guidelines (CASP, 2006).

4. Findings

The studies were grouped by geographical area in anticipation that regional similarities in cultural mores and political/educational systems may impact the dissemination of reproductive health information. Table 1 provides a summary of all studies. A broad overview of ECP awareness is presented by country (Figure 1) and continent (Figure 2). Detailed discussion follows by geographic region.

4.1 Studies conducted in Africa

Awareness of EC among young African women varied, from a nadir of 15% in South Africa (Myer, Mlobeli, Cooper, Smit, & Morroni, 2007) to 75% in Nigeria (Abasiatti, Umoiyoho, Bassey, Etuk, & Udoma, 2007). Multiple studies in some countries provided a clear picture of national trends (Myer, et al.) with a total of three South African studies revealing relatively low awareness of EC (Mqhayi et al., 2004; Roberts, Moodley, & Esterhuizen, 2004). Conversely, five studies conducted in Nigeria (Abasiatti, et al.; Akani, Enyindah, & Babatunde, 2008; Aziken, Okonta, & Adedapo, 2003; Ebuehi, Ekanem, & Ebuehi, 2006; Ikeme, Ezegwui, & Uzodimma, 2005) all found EC awareness levels at or above 50%. Population samples may partly explain this discrepancy: the Nigerian studies all surveyed university students while the South African studies yielding the lowest knowledge levels surveyed young women attending public clinics (Mqhayi, et al.; Myer, et al.). Yet education alone cannot fully account for differing results: two remaining African studies, one conducted in Uganda (Byamugisha, Mirembe, & Gemzell-Danielson, 2006) and the other in Ethiopia (Kebede, 2006), both

surveyed university students yet produced varied results. Specific knowledge of ECP--such as timing of doses and mechanism of action--was found to be poor across all the African studies, and respondents' attitudes toward ECP were generally negative. Another common factor was healthcare providers' minimal role in disseminating information about EC; most young people surveyed obtained knowledge of EC from other sources, including family, friends, and the media.

A large percentage of Nigerian women indicated awareness of some preparation that could be taken orally after intercourse to prevent pregnancy, but further inquiry revealed that many referred to ineffective and dangerous substances including quinine (an anti-malarial drug) and potash (a caustic substance distilled from wood ash) (Akani, et al., 2008; Aziken, et al., 2003). In the earliest study (Aziken et al.) of nearly 900 female undergraduates, 58% had heard of a post-coital product for birth control, yet only 42% could identify the Yuzpe method or levonorgestrel, and only 18% of this subsample could identify the correct time parameters for efficacy. Menstrogen, a drug recommended only for treatment of low estrogen levels, was most frequently cited as ECP (50%). When female undergraduates (n=420) attending universities in Eastern Nigeria were again surveyed two years later, researchers found no demonstrated improvement in knowledge levels (Ikeme, et al., 2005). Despite significant general awareness of ECP (66%), most respondents did not know the recommended timing. Only 17% identified Levonorgestrel; nearly as many chose Menstrogen. Approximately 25% feared future fertility problems following use of emergency contraception. Despite these findings, nearly one-third reported using some form of "post-coital contraception" in the past. When informed of ECP, 40% indicated that they would recommend it to a friend. A subsequent survey

(Ebuehi, et al., 2006) at the University of Lagos, Nigeria (n=420) supported the earlier findings and correlated demographic variables with knowledge of EC. Older students, married students, and those in the health sciences showed significantly higher knowledge levels. One particularly disturbing finding was that patent medicine dealers, who are often viewed as healthcare providers yet practice without oversight of training or credentials, were the most commonly identified source of information (40%) (Adikwu, 1996).

The most recent Nigerian studies reveal continued reliance on medicine dealers for information about EC; 40% of respondents in one study (Abasiattai, et al., 2007) identified them as their main source of information, while in another study (Akani, et al., 2008) 92% of those who had used EC reported obtaining it from a medicine dealer. Again, although over one-half of all respondents were aware of ECP (56% and 52% respectively), specific knowledge was low. More disturbing, in both studies greater than one-half of those who reported having used EC admitted to taking quinine, Menstrogen, or gynacosid (a hormone combination indicated for dysfunctional uterine bleeding) for this purpose. While levonorgestrel or combined oral contraceptives are both readily available over the counter in Nigeria, less than 25% in both studies reported using one of these preparations.

South African surveys produced similar results. General awareness of ECP among college students (Roberts, et al., 2004) was moderate (56%), but only 20% of respondents could identify the correct time parameters, and 40% were unaware that ECP could be obtained without prescription. Studies of non-university population groups showed much lower knowledge of ECP (Myer, et al., 2007; Mqhayi, et al., 2004) with teenagers

exhibiting the lowest awareness. Studies of undergraduates in Ethiopia (Kebede, 2006) and Uganda (Byamugisha, et al. 2006) likewise found low awareness of ECP (24% in Ethiopia, 45% in Uganda). Three-quarters of Ethiopian women correctly identified the time parameters, while the Uganda study found poor knowledge of mechanism of action and time parameters.

These studies indicate that knowledge adequate for correct and safe use of ECP among young women in Africa is extremely low. This lack of knowledge would raise concern for any group of sexually active young adults but is especially alarming in this region, where risks of and negative outcomes from unintended pregnancies are particularly acute: incidence of sexual assault is high (Myer et al. 2007); fertility awareness is low (Byamugisha et al. 2006); use of long term-contraceptives is low (Aziken et al. 2003; Ebuehi et al. 2006); and morbidity and mortality from illegal abortions are high (Abasiattai et al. 2007; Ikeme et al., 2005). Educational programs to inform young people about ECP are acutely needed throughout Africa.

4.2 Studies Conducted in Asia

Awareness of ECP in Asia varied, from extremely low in India— where awareness levels are as low as in South Africa (Agrawai, Fatima, & Singh, 2007; Puri, et al., 2007)— to comparatively high in the more industrialized countries of East Asia (Wan & Low, 2005). High awareness of ECP in Hong Kong may reflect its relatively long history of availability there, but awareness in South Korea is equally high despite recent introduction (Kang & Moneyham, 2008). In-depth knowledge was less widespread and many misconceptions about ECP exist in both countries. On mainland China, where adolescent pregnancy is a new phenomenon and reliable statistics are not available in part

due to under-reporting, Xu & Chen (2008) estimate that the abortion rate for this group approaches 6,000 per year in Shanghai alone; less than half of teen abortion seekers in their study (n=591) were aware of ECP.

In a 2005 survey of over 1,700 Hong Kong women attending birth control clinics, 425 (25%) were adolescents aged 15–24 and 73% were aware of ECP with >90% knowledgeable of time parameters for effective use (Wan & Lo, 2005). Education was also predictive of knowledge. Unlike young people in many other countries, only 5% of the Hong Kong women believed that ECPs were an abortifacient. Less reassuring were other findings regarding attitudes toward ECP: 50% of the entire sample felt that over-the-counter availability of ECP would promote irresponsible contracepting behaviors. Although ECP has been available over the counter since 1998 in other areas of China, teen pregnancy rates continue to increase (Xu & Chen, 2008). Assessment of ECP awareness among teen abortion seekers at three clinics in Shanghai (n=591) found that over 90% of the young women had not used any form of contraception, less than half had heard of ECP, and only one-third of those knew the correct time parameters. Peers and the media were the most common sources of information.

In South Korea a nationwide coed sample of college students (n=1,046) found that most (75%) were aware of ECP but revealed significant knowledge deficits regarding timing and side effects (Kang & Moneyham, 2008). Less than half were aware that ECP did not prevent STIs. Females had significantly higher knowledge; males had more favorable attitudes towards ECP, while females favored condoms.

An Indian survey of female college students' (n=1,017) awareness of ECP determined that only 7% had any knowledge, and only 15% of those knew the correct

timing of doses (Puri et al., 2007). Most (98%) feared that taking ECP would cause detrimental hormonal changes. A second Indian study assessed girls attending secondary school and confirmed the Puri study's findings of low knowledge levels; less than 20% were aware of ECP (Agrawai, et al., 2007). The results of these two studies are significant because 78% of pregnancies in India are unplanned, and despite available legal abortion, unsafe abortions are increasing (Puri, et al.).

4.3 Studies Conducted in Australia

The lone study conducted in Australia surveyed a co-ed sample of first year university students. Awareness was not assessed but knowledge about the timing of ECP was generally poor, and nearly one-half thought it might act as an abortifacient. The majority of respondents were supportive of ECP use, yet 55% had concerns about safety. These results are particularly concerning since the age group of the sample has the highest rate of abortions in Australia (Chan, Scot, Nguyen, & Sage, 2008).

4.4 Studies Conducted in Europe

Although ECP has been approved and widely prescribed in Europe for many years, current studies found that knowledge and attitudes regarding ECP vary widely. In Scandinavia ECP is presented in the context of a comprehensive school reproductive health curriculum, and teen awareness exceeds 95% (Falah-Hassani, Kosunen, Shirir, & Rimpela, 2007; Larsson, Eurenius, Westerling, & Tyden, 2004). Conversely, studies in Eastern Europe (where most respondents identified friends and the media as sources of information) revealed that less than 10% of some high-school students know of ECP (Selak, Juric, Hren, & Juric, 2004), and even those young women aware of ECP had misconceptions about how it should be taken and how it prevents pregnancy (Kozinski &

Bartai, 2004; Olszewski, Olszewski, Abacjew, Chmylko, Gaworska-Krzeminska, et al., 2007).

Studies of like populations demonstrated significant regional differences in awareness and knowledge. A Hungarian study at a women's health clinic compared ECP knowledge in a group of adolescents (15–19 years old) seeking abortions to a control group of the same age seeking care for other reasons and a group of older women requesting abortions (Kozinski, & Bartai, 2004). Adolescents seeking abortions demonstrated much lower ECP knowledge levels than did their older counterparts and the same-age control group ($p. <0.001$). Both groups of young women showed unrealistic fears of side effects from all oral contraceptives, including ECP. Adolescents seeking abortion indicated they received their information from a sexual partner or the media, while those in the same-age control group identified family as their main source. Young women in both groups who were using long-term oral contraceptive pills (OCPs) as their primary method of birth control identified their healthcare provider as their source of information on reproductive health.

A survey conducted in Scotland of 78 women seeking abortions found much greater awareness of ECP (Sarju & Urquhart, 2005). Most (75%) indicated they had heard of ECP and 90% would consider using it in the future. In a follow-up study of young women at the same clinic two years later, nearly the entire sample (96%) showed awareness of ECP, but confusion about correct usage had actually increased—particularly in the 16 to 20 year age group, where more than 50% did not know the correct timing (Fitter & Urquhart, 2008). Overall attitudes remained positive (90%). A 2005 study conducted in France with a like population (women seeking abortions), but a

much larger sample size (n=1,365), found similar results (Moreau, Bouyer, Goulard, & Bajos, 2005). Ninety percent of respondents were aware of ECP but less than 25% knew the correct timing. Younger women (<25 years old) were more knowledgeable than older women about the specifics of correct usage. Only 16% indicated that they learned of ECP from their healthcare provider, most citing the media (40%) or friends (55%) as their primary source of knowledge.

Other studies of student populations suggest religion as a potential explanatory factor for variations in ECP knowledge within Europe. The study revealing the lowest knowledge of ECP was conducted among high-school students in the former Yugoslavia, where the Roman Catholic Church remains influential (Selak, et al. 2004). The survey of a stratified random co-ed sample of students aged 15–17 revealed that less than 20% were aware of ECP and none knew the correct timing. Only 10% obtained contraceptive knowledge from their health care providers. The majority (52%) cited shame as the main barrier to their seeking information about all reproductive health, including contraception.

A more recent study of female university students in Poland also highlighted the influence of religion (Olszewski, et al., 2007). Most (86%) were aware of ECP, but 70% viewed it as an abortifacient. Although the study offered no data on source of information, its authors posited that poorly informed healthcare providers, influenced by their own religious convictions, may not be providing objective information. In a previous Polish study, 40% of respondents identified the Catholic Church as the main obstacle to sexual education (Nowakoska, 2003). Paradoxically, 14% of the sample in the Olszewski study stated they had previously used ECP, which is a markedly higher

percentage than found in more secular countries (Falah-Hassani, et al., 2007; Moreau et., al, 2005).

Religion exerted a strong influence on perceptions of the acceptability of emergency contraception in a Turkish study of university students (Bozkurt, et al., 2006). Nearly half (48%) stated that ECP would be incongruent with their religious beliefs. This survey also revealed a marked discrepancy between awareness of ECP and knowledge. A subsequent Turkish study found only 54% of nursing and midwifery students were aware of ECP (Celik, Ekerbicer, Ergun, & Tekin, 2007). Only 8% could identify the composition, 4% could name one potential side effect, and only 40% indicted they would be willing to use ECP or recommend it to a friend. These low numbers are particularly disturbing in individuals who will be responsible for disseminating information about ECP to patients. The most recent university study in Turkey (Sahin, 2008)--one of only two studies exclusively assessing male knowledge of ECP--found that 75% percent of respondents were sexually active, yet less than 15% were aware of ECP.

Scandinavian studies found much higher ECP awareness levels. A Swedish intervention study evaluating an ECP-awareness campaign (Larsson, et al., 2004) revealed high levels of awareness even at baseline (> 95% ECP awareness in both control and intervention groups of women 16–30). In Finland, the largest European study to examine adolescents' knowledge of ECP (Falah-Hassani et al., 2007) analyzed data from three years (1999, 2001, and 2003) of a self-administered written survey mailed to a national sample of 12, 14, 16, and 18 year olds. Nearly all teens aged 14–18 and the majority of 12-year-old females were aware of ECP across all three survey years, indicating that most young women know of ECP prior to sexual debut. Above-average

school achievement, history of dating relationships, urban environment, and tobacco and alcohol consumption were all predictive of increased ECP awareness, while socioeconomic status was not. A positive correlation between alcohol consumption and ECP awareness may be a beneficial finding, as young women who consume alcohol are more likely to engage in unprotected sex.

The Scandinavian studies' high awareness numbers may derive, in part, from the comparative absence of religious opposition to ECP and other forms of birth control in the region. In Sweden, ECP is not a controversial form of birth control and has been available in school-based clinics since 1989 (Larsson, et al.; Rogala & Anzen, 1995). These studies likewise demonstrate the effectiveness of sex education. In Finland, as in Sweden, reproductive health education has been an integral part of school curriculum for many years (Falah-Hassani et al. 2007); even ten years ago awareness rates of ECP in Finland were found to be greater than 95% in adolescents ages 14 to 17 (Kosunen, Rimpela, Rimpela, & Hutala, 1999). The reproductive health curriculum provided in Scandinavian countries might act as a model for those European countries where lower knowledge levels and negative attitudes toward ECP still prevail.

4.5 Studies conducted in North America

ECP has been described as "America's best kept secret" (Hatcher et al., 1995, p.1). Even where awareness of ECP is high, young people exhibit significant knowledge gaps and confuse post-coital contraception with abortion (Salganicoff, Wentworth, & Ranji, 2004; Mollen et al, 2008). The knowledge gap has been especially evident on college campuses, where in one study 88% of students could not differentiate between ECP and RU486 (Corbett, Mitchell, Taylor, & Kemppainen, 2006). Recent widespread

educational campaigns appear, however, to have been at least partially successful in improving U.S. adolescents' knowledge of ECP (Castle, Friedlander, Byrd, & Coeytaux, 1999; Coeytaux & Pillsbury, 2001). One promising 2009 study in New York City (Cremer, Holland, Adams, Klausner, & Nichols, 2009) demonstrated that educational intervention could yield significant results, even when initial awareness of ECP was low. Most adolescents (>75%) were able to comprehend key points necessary for effective use after reading a copy of the levonorgestrel label.

When Sawyer and Thompson (2008) surveyed a coed convenience sample of undergraduates at an East Coast university (n=693) in 2003, nearly 90% reported awareness of ECP; most (75%), however, reported knowledge deficits regarding usage, functioning, and effectiveness. While the majority (66%) expressed willingness to use ECP in the future, approximately the same percentage considered the mechanism of action to be "somewhere in between" contraception and abortion. This confusion regarding mechanism of action was even more starkly revealed in a subsequent survey of college students in North Carolina (Corbett et al., 2006). The sampling method of this study greatly compromised external validity: its authors asked all students present in a university library on a single afternoon (n=97) to complete an anonymous written survey. But it is included in this review for its unexpected findings: 97% of respondents had heard of ECP or "morning after pills," yet 88% could not differentiate between ECP and the abortion drug RU486. Despite this confusion, 68% reported no moral or religious objections to ECP. Most students cited friends, relatives, and the media as their primary sources of information regarding ECP.

By contrast, the most recent survey of U.S. college students on ECP awareness produced guardedly encouraging results (Vahretian, Patel, Wolff, & Xu, 2008). Ninety-four percent of a random coed sample of students (n=1582) from a Midwest university who participated in the Web-based survey were aware of ECP. Even though 12% indicated they did not know the longest time window of effectiveness and only 5% knew the most recent recommendation of 120 hours, approximately half were aware of the previously recommended 72-hour time parameter. Studies in other contexts have also suggested positive changes in knowledge and attitudes about ECP (Aiken, Gold, & Parker, 2005), although some studies found that knowledge gains were correlated with increased age (Foster, Ralph, Arons, Brindis, & Harper., 2007; Cremer, et al., 2009). A recent telephone and mail survey of postpartum women in Oregon (n=2,490) (Goldsmith, Kasehagen, Rosenberg, Sandoval, & Lapidus, 2008) found an association between unintended pregnancy and lack of awareness of ECP. Women most likely to have had an unintended birth were young (less than 20 years of age), implying that these women may be in greatest need of information about emergency contraception. An earlier Montana Department of Health study surveying women at time of pregnancy testing had observed no correlation between unintended pregnancy and lack of ECP awareness, although that study did find that younger women and those with unintended pregnancies expressed greater willingness to use ECP in the future (Spence, Elgen, & Hartwell., 2003) .

A replication of an earlier study (Gold & Miller, 1997) from Pittsburgh showed limited improvement over time. Aiken and colleagues (2005) reexamined knowledge levels in a sample of adolescent girls recruited from a hospital-based clinic and a drug treatment center They found that between 1996 and 2002, the percentage of adolescents

aware of ECP increased by 30% ($p<0.001$), and more detailed knowledge regarding use also significantly increased. Yet the group exhibiting greater knowledge constituted only half of the sample; 50% still did not know how to use ECP correctly. Similarly mixed results emerged from the one qualitative study conducted in the U.S. (Mollen, et al., 2008), which used in-depth interviewing for a sample of 32 African American females ages 15 to 19. The study found generally positive attitudes but specific knowledge gaps regarding ECP, including misconceptions about the recommended time frame for taking the medication. The interviews also revealed some negative perceptions. Some respondents called ECP "the miracle drug," while many felt the need for ECP resulted from irresponsible behavior. The opinions of mothers, boyfriends, and female friends significantly influenced their contracepting decision-making.

The design and sampling methods of many of these studies preclude making associations with the larger population. There have been, however, several population-based surveys in California with strong external validity; these studies confirm that older teens in particular have improved in their knowledge of ECP (Foster, et al., 2004; Foster et al., 2007; Salganicoff, 2004). The Henry J. Kaiser Foundation (Salganicoff) population-based telephone survey of California females and males (ages 15–44) found those between ages 15 and 17 had lower ECP knowledge than any other age group. Approximately 40% confused ECP with RU486. The California Women's Health Survey, another population-based survey, queried a random sample of 4,000 women ages 15–44 on health related issues, including EC. Those aged 18–24 years were significantly more likely to be aware of and knowledgeable about emergency contraception (Foster et al 2004; Foster et al., 2007). Knowledge in this group increased 23% between 1999 and

2004. When the same data were reexamined to include only the responses of minors—ages 15 to 17 (Baldwin et al., 2008)—adolescents were found to have lower knowledge levels than any other age group.

A New York City study of female adolescents suggests that educational intervention can measurably improve younger adolescents' knowledge of ECP (Cremer et al., 2009). In surveys administered to a convenience sample of teens ages 12 to 17, recruited from private high schools and public venues, only 32% of respondents indicated they were aware of ECP prior to the survey. Nevertheless, using a copy of the levonorgestrel label given to them as part of the study, 75% or greater were able to identify correctly indications, time parameters, and contraindication (pregnancy) to ECP. Age was predictive of comprehension, with women ages 16 and 17 scoring highest ($p=.001$).

North American studies conducted outside the U.S. were scant and produced varied results. Baseline data from a cluster-randomized controlled trial to assess the impact of an educational intervention with condom use among high school students in Mexico ($n=10,918$) found ECP awareness to be greater than 60%, but only 36% of girls and 39% of boys demonstrated specific knowledge (Walker, Torres, Gutierrez, Flemming, & Bertozzi, 2004). The only published research from Canada focused on a relatively small subgroup—immigrant women—and examined knowledge gaps and attitudes in the context of ethnic influences (Shoveled, Chabot, Soon, & Levine, 2007). Significant misperceptions were found even among those who had previously used ECP. Many participants stated they were intimidated by their limited English, male healthcare providers, and fears of being judged as promiscuous. Unfounded fears about possible side

effects were most prevalent among Asian participants but existed to some extent across ethnicities. A qualitative study conducted in Jamaica with university students (Sorhaindo, Becker, Fletcher, Garcia, & Mitchell, 2003) yielded results consistent with U.S. studies (Aiken et al., 2005; Corbett et al., 2006), finding high general awareness but lack of specific knowledge about ECP; at the end of the focus group sessions most participants viewed ECP as a useful contraceptive option, although some expressed concerns that greater availability would promote promiscuity.

Collectively, the North American studies demonstrate that although awareness of ECP has increased, specific knowledge is often lacking and many misconceptions persist. Most notably in the U.S., awareness and knowledge are lowest among the youngest adolescents who are often the most vulnerable to pregnancy.

4.6 Studies conducted in Central/South America

The few studies from Central and South America that have addressed young people and EC highlight the Roman Catholic Church's influence on acceptance of emergency contraception, recalling the results of studies conducted in Eastern Europe (Bozkurt, et al. 2006; Olszewski, et al. 2007) A qualitative focus group series conducted in Brazil, Chile, and Mexico surveyed adolescent girls, their mothers, and healthcare providers regarding knowledge and acceptability of ECP (Diaz, Hardy, Alvarado, & Ezcurra, 2003). Participants in Brazil were more knowledgeable and had fewer misconceptions about ECP. In Mexico and Chile, where religion was considered to be more influential, participants were either unaware of ECP or confused it with abortion—often citing the church as a barrier to sex education. At the conclusion of the study all

categories of participants displayed positive attitudes towards ECP, with adolescents expressing "extremely positive views".

The most recent study from this region was conducted in Honduras using a pre-post- test design (Garcia, Lara, Landis, Yam, & Pavon, 2006). Data were collected prior to a national campaign to increase ECP awareness and knowledge. The Catholic Church countered the campaign with public decrees that ECP was an abortifacient and anyone using it would be excommunicated. Thus, while overall awareness of ECP rose significantly during the campaign (5% to 20%), willingness to use it decreased in all demographic categories—except among young women aged 15–19 years, who demonstrated the greatest increase over time in both awareness and willingness to use.

5. Discussion

Our review of the literature has shown that although ECP has been available for some time in many parts of the world, awareness remains low among young women in most regions. Even where awareness exists, unfounded fears and lack of specific knowledge prevent young women from utilizing ECP effectively. Many surveyed women were students living in urban environments; less educated young people in rural settings are likely to be even less well informed (Bozkurt, 2006). Some barriers derive from local customs or regionally specific mores—Catholic Church influence in Eastern Europe and Latin America (Garcia, et al., 2006; Hardy, et al., 2003; Olszewski, et al., 2007), or the continued influence of patent medicine dealers in Nigeria (Abasiatti, et al., 2007; Akani et al., 2008). More pervasive cross-cultural factors include adolescents' reliance on sources other than healthcare providers for reproductive health information.

Overall awareness in developing countries remains low, but this review revealed regions in industrialized nations where progress has occurred in adolescent and young adult knowledge of ECP. Most prominent are the Scandinavian studies (Falah-Hassani et al. 2007; Larsson, et al., 2004), which indicate that when information about ECP is incorporated into a comprehensive reproductive health curriculum, awareness and knowledge are nearly universal across all age groups. Several U.S. studies indicate slow but definite gains in awareness of ECP (Aiken, et al., 2005; Foster et al., 2007; Vahretian, et al., 2008), although younger adolescents continue to lag behind (Baldwin et al., 2008). Most recently, the Cremer (2009) study indicates that even when initial awareness is low, many adolescents are able quickly to comprehend operative knowledge of ECP when provided with correct information.

While awareness of ECP is essential for successful use, awareness is only the first step in a complex process with many potential obstacles. Availability and cost of ECP vary throughout the world (Anderson & Blenkinsopp, 2006; Bogges, 2002; Miller & Sawyer, 2006), and an extensive international literature indicates that health care providers' attitudes toward, and prescribing patterns for emergency contraception can impact use of ECP (Bildircin & Sahin, 2005; Fairhurst, Ziebland, Wyke, Seaman, & Glasier, 2004; Goyal, Zhao, & Mollen, 2009). Several recent studies in the U.S. and Europe examining advance provision of ECP found, moreover, that even given easy access and positive attitudes from healthcare providers, young women who purported an intention to avoid pregnancy are not using ECP on many occasions when it is indicated (Ekstrand, Larsson, Darj, & Tyden, 2008; Harper, Cheong, Rocca, Darney, & Raines, 2005; Raine, et al., 2005).

These findings mirror the results of studies examining adolescents' use of other forms of contraception (Iuliano, Speizer, Santelli, & Kendall, 2006; Kendall, et al., 2005; Stevens-Simmons & Sheeder, 2004). In these other studies, fear of side effects and perceived low risk of pregnancy were often cited as reasons for non-use; similar fears, as well as concerns about efficacy, have been identified as barriers to use of ECP in this population. In a follow-up study of advance provision to a cohort of young women (Rocca, et al., 2007) concern about side effects was the second most common reason given for not taking ECP, while 11% stated that they did not know if they needed it. In a focus group of 17-year-old females in Sweden (Ekstrand, Larsson, Von Essen, & Tyden, 2005), concerns about possible side effects and effectiveness were common themes for non-use. Perceived low risk of pregnancy again emerged in a qualitative study of young women ages 14–24 in England: some participants perceived pregnancy as "something that happened to others" (Free, Lee, & Ogden, 2002, pg. 3). This sense of personal invulnerability may be a more significant barrier to use of ECP by younger adolescents, as perceived invincibility is a hallmark of this developmental stage (Elkind, 1967; Wickman, Anderson, & Greenberg, 2008). More research is needed in this area.

6. Conclusion

Unwanted pregnancy among adolescents and young adults remains a significant public health problem worldwide. Emergency contraceptive pills are a safe, effective form of birth control well suited to the developmental needs of this population. Despite widespread availability, awareness and knowledge of ECP remain low among young adults, who obtain most information about reproductive health from sources other than healthcare providers. While contraceptive decision-making is a complex process, both

awareness and knowledge of ECP are necessary for successful use. Nurses who practice with young adults should be aware of the ECP knowledge gap and should strive both to increase awareness and to provide evidence-based information about ECP to this vulnerable population.

Chapter 3.

Abstract

Emergency contraceptive pills (ECP) are a safe and efficacious method of birth control and are well tolerated in young women. Despite widespread availability, ECP is underutilized in this population. While partner influence and level of involvement have been shown to influence contraceptive behavior in young women, there is a dearth of knowledge regarding any possible association between relationship issues and ECP use. In order to explore and better understand the reasons for the seemingly underuse of ECP, a Grounded Theory study was conducted to elucidate the relationship of couple dynamics and ECP decision making in adolescents and young adults. Consistent with contemporary constructivist grounded theory methods, the categories that were identified included: female autonomy regarding decisions affecting their bodies, power and trust dynamics within the couple dyads regarding decision making, and the meanings associated with ECP use. This article presents an elaboration of the latter—the meanings that ECP use hold for young couples.

Key words: Post-coital contraception, Adolescence/young adulthood, Couples

Despite the dramatic rise in the median age of marriage in the US over the past several decades (Model, 1989), and an increasing emphasis on individualism (Arnett, 1994), late adolescence through the young adult years (ages 18-25 years of age) remains a period when intimate couple relationships are established with a focus on the future (Arnett, 2000). It is through these relationships that individuals develop and refine negotiation skills necessary to sustain long-term commitment to another person (Tuval-Mashiach & Shulman, 2006).

Late adolescence/young adulthood is also a period when an unwanted pregnancy is most likely to occur. (Finer & Henshaw, 2006). Over one million unwanted pregnancies occur annually in the United States among women under the age of 25, with the highest incidence in 18 to 24 year olds (Center for Disease Control [CDC], 2009). Emergency contraceptive pills (ECP) are a safe and effective form of contraception (*American College of Obstetricians and Gynecologists* [ACOG] *Practice Bulletin*, 2005) well suited to the contraceptive needs of this age group (Gordon, 1990; Rocca, et al., 2007). Despite these advantages, ECP use remains low for reasons that are not entirely clear (Raine et al., 2005). One of the reasons for this underuse may be partner influence (Free & Ogden, 2005) however; few studies have focused on this area (Cubbins, Jordan, Rutter, & Tanfer, 2007). The purpose of this grounded theory study was to explore and better understand the reasons for the seemingly underuse of ECP among older adolescents and young adults in coupled relationships.

Background

Unintended Pregnancy in Young Women

Despite a downward trend for many years, unintended pregnancy among adolescents and young adult women remains a significant public health problem in the United States (Hamilton, Martin, & Ventura, 2009). In 2005 2.4 million pregnancies occurred in females under 25 years of age—approximately 50% were unintended (CDC, 2009). That same year, 1.21 million abortions were performed in the US—one half were performed on females less than 25 years of age (Alan Guttmacher Institute [AGI], 2009). The incidence of unintended pregnancies is highest among women 18-24 years (Finer & Henshaw, 2006). Along with the increased number of abortions, negative outcomes

associate with these pregnancies include depression and decreased quality of life (AGI, 2006). Exacerbating this dilemma, recent data indicates a reversal of the downward trend; pregnancy rates have increased across all age-groups less than 25 years old (Kissen, Anderson, Kraft, Warner, & Jamieson, 2008; Martin et al., 2009).

Emergency Contraception Pills (ECP)

Post-coital hormonal contraception, which is also known as "the morning after pill" is a safe and effective form of birth control with few side effects (ACOG, 2005; WHO, 1998), and is well tolerated in young women (Harper, et al., 2004; Sambol, et al., 2006). Although some post-ovulatory mechanisms may be present with ECP use that decrease the likelihood of implantation of a fertilized ovum, contraception is achieved primarily by inhibiting ovulation (Croxatto, et al., 2001; Trussel, Ellertson, Stewart, Raymond, & Sochet, 2004). ECP has the potential to significantly reduce the number of unintended pregnancies (Society for Adolescent Medicine, 2004). Earlier predictions of a reduction of nearly 80% (Trussel, Rodriguez, & Ellertson, 1998) have proven overly optimistic; contradictory findings in recent studies revealed that advanced provision of ECP resulted in increased use but did not impact pregnancy rates (Raymond, Trussel, & Pollis, 2007). It can however, reduce pregnancy risk for individual women (Cheng, Gulmezoqlu, Piaggio, Ezcurra, & Van Look, 2008). Since advanced planning is not required, it is well suited to the developmental needs of most adolescents and many young adults who have not yet developed the formal operational thought processes required to envision potential consequences of actions, and are therefore more likely to engage in unprotected sexual activity (Gordon, 1990; Steinberg, 2004). The only contraindication to ECP is pregnancy; however, since it has no detrimental effect on

existing pregnancies, clinical evaluation or testing is not required before ECP is provided (ACOG, 2005).

Despite these advantages, there continues to be low ECP use among young women. It has been posited that healthcare provider attitudes (Beckman, Harvey, Sherman, & Petitti, 2001) and lack of access (Camp, Harper, & Raine, 2003) are responsible for infrequency of ECP use in this population. However, several studies have refuted these hypotheses; even with advanced provision, ECP use remains low (Gold, Wolford, Smith, & Parker, 2004; Polis, et al., 2007). Rocca et al., (2007) assessed the acceptability of ECP in young women and nearly all the participants reported favorable attitudes towards it. However, only 50% of this same group, who had ECP on hand and reported having unprotected sex, chose to use it (Raine et al., 2005). The reasons for this discrepancy between attitudes and actual use remain unclear.

Relationship Dynamics

Two recent studies conducted in the United Kingdom (Free, Lee, & Ogden, 2002; Free & Ogden, 2005) suggest there are other contextual factors influencing young women's views on ECP. One of these factors is the role that male partners play in decisions related to its use. Relationships by definition are predicated on interpersonal goals, expectations, and interactions that influence each partner's subsequent behaviors (Reis, Collins, & Berscheid, 2000). While there is a growing focus on the couple dyad as the unit of analysis in reproductive health research (Cubbins, et al., 2007), most of these studies are limited to adult married dyads (Becker, 1996). The few studies that did examine relationship factors and the use of other forms of contraception in young couples, found that while contraception was often a difficult topic to discuss (Coleman &

Ingham, 1999), the length and quality of the relationship (Ryan, Franzetta, Manlove, & Holcomb, 2007; Manning, Longmore, & Giordano 2000), and comfort and openness in sexual communication (Widman, Welsh, McNulty, & Little, 2006) were predictive of successful contraception. How couple dynamics influence decision making related to ECP use in young adults is unknown. Therefore, the purpose this grounded theory study was to explore and better understand the reasons for the seemingly underuse of ECP among adolescents and young adults in coupled relationships. Since the dynamics of the couple dyad was the primary focus of analysis for this study, Grounded theory was chosen as the methodology since its goal is to construct abstract theoretical explanations from social processes (Glaser & Strauss, 1967).

Methods

Recruitment and Participants

Approval was obtained from the University of California, San Francisco Committee on Human Research prior to any study procedures. Couples were recruited through public notices and snowball sampling (Fain, 2004). Inclusion criteria were females ages 18-25 years old, English speaking (as their partners), and currently in a sexual relationship. The women made the first contact with the researcher via telephone or email. Prior use of ECP was not required, but all participants were screened to insure they had some knowledge of ECP and were willing to discuss it with their partners. For those meeting the inclusion criteria, a mutually convenient place and time were chosen for the young women and their partners to meet with the interviewer. The settings included various public venues and couples' homes. Each member of the dyads was given $25.00 per interview as compensation for their time.

Twenty-two sexually active couples, (*N*=44), with both partners between the ages of 18 and 25 years old, were interviewed. Racial and ethnic self identification included: 4 African-Americans, 3 Asians, 3 Hispanics, and 34 Caucasians. One female (Asia) and two males (Brazil and India) had immigrated to the United States within the past 5 years; the remainder had spent their formative years in the U.S. The majority of participants (*n*=41) had at least one year of college. Couples had been sexually involved from 6 months to 4 years. One half of the couples (*n*=11) had used ECP at least once, the majority (*n*=10) in their present relationships; of these two had used ECP twice, one three times, and one four times. Another female and her partner had both used ECP in previous relationships only. The remainder of the couples (*n*=11) had no personal experience with ECP. All of the females in the study were aware of ECP prior to first contact as were the majority of males; one was informed by his partner immediately prior to the first interview.

At the first meeting any further questions were answered, and written consent and demographic information were obtained. The design of the study included three interviews with each dyad (couple): the individual interviews—usually conducted consecutively, with each lasting 30 to 45 minutes, and the couple interview—conducted approximately one week later, taking 45 minutes to 1 hour to complete. The exceptions to this process occurred with one couple in which the partner was initially unavailable requiring the postponement of two interviews, and one couple who failed to return for the joint interview.

Data Analysis

Consistent with the principles of Grounded Theory, analysis began simultaneously with data collection. All analytical processes were performed by the first author under the supervision of three senior researchers all experienced in qualitative research and grounded theory. Interviews were audio-taped and transcribed verbatim. The data were initially analyzed using strategies of open coding and memoing (Charmaz, 2006). Axial and comparative coding were then performed, along with ongoing memoing, to identify themes and their relationships. As axial codes emerged, additional couples were recruited to allow for theoretical sampling (Corbin & Strauss, 1989) and focused coding (Charmaz, 2006), and also to augment authenticity (Beck, 2009). Revisions were made to the original interview guide to pursue the emerging findings. Interviews were conducted from November 2008 to August 2009. In depth field notes of participants' behaviors, obtained through participant observation, were also taken to provide for credibility (Beck), and the data was incorporated into the analysis to augment the findings.

Consistent with contemporary grounded theory methods (Clark, 2005), the data were then reassembled to construct abstract schemas to begin to explain the knowledge, attitudes, and experiences of young couples with ECP. Saturation—when no new categories emerge (Strauss & Corbin, 1998) was reached after interviewing eighteen couples, but an additional five were recruited to insure comprehensive analysis and coverage of the data, as well as theoretical verification. A total of 63 interviews were analyzed. Several core concepts emerged around couple dynamics in decision making and the meanings of ECP use. This article focuses on the latter—the meanings ECP use held for these couples.

Findings

Our analysis identified several meanings, both explicit and liminal, that the use of ECP held for participants. Most of these meanings that participants ascribed to ECP use represented a continuum or range of value attributes from negative to positive (Table 2). Notably, many of these meanings were based on erroneous or incomplete information, yet nonetheless often provided the basis for the couples' decision making. One of the first concepts to emerge was that for many of the participants, decision making regarding ECP was at least partially based on a moral belief system. These beliefs formed a continuum from ECP use is immoral under any circumstances to ECP use is unconditionally acceptable. The continuum reflected the uncertainty many of the participants held regarding the action of ECP and its possible relationship to abortion.

Making Moral Decisions

Some participants suggested that ECP is akin to abortion and therefore felt that its use should be restricted. At the extreme end of the continuum, one young woman professed that the use of ECP was morally wrong under any circumstances:

> **Female:** I've heard bad things about it. It's like because I grew up in a Catholic family, so it's like considered really bad…I think that emergency is on the side of abortion to me, because that's just like killing something. The condoms and the pills – that's different because you're preventing that from happening. That's already happened, and that's something you're trying to get rid of.

This particular female was the only participant who professed such an immutable stance against ECP use. This solitary view may be an indication of a self selection process

among the participants—those with more conservative views may have been unwilling to participate because they felt that their views were less socially acceptable.

While no other participant took such an inflexible moral outlook regarding ECP, some expressed extremely value laden views. One young woman felt that the morality of ECP use was based on the timing of its use. She had also conceptualized a moral continuum of methods of contraception, and where she positioned ECP in this range was based on the chronology of its action in relation to the process of conception. What she saw as the ambiguity of this interaction strongly influenced her decision making regarding the use of ECP.

> **Female:** I mean I haven't taken it but I've heard like if you feel you're going to get pregnant, or you've gotten pregnant from unprotected sex, and you don't want to have a child…There's not much I guess (difference between ECP and other forms of contraception) because it is the same effect: keeping you from getting pregnant, but I think if you get pregnant and the fetus could be able to start to grow within 5 days, then I think it would be more of like, killing the fetus than just keeping yourself from getting pregnant…It just depends I guess, if I did get pregnant I think I would probably have the child. I wouldn't be able to do that (take ECP).

Another female participant perhaps best explained why this conceptual blurring between ECP and abortion occurred for some young couples—it is at least partially rooted in the question of when does life begin.

> **Female:** I don't think emergency contraception is a form of birth control…in terms of moral issues, if you have a fertilized egg, is that life or not? I'm not

sure…So I think that those issues can make emergency contraception a little less ideal …yes, I kind of consider it in between both (contraception and abortion).

Several other participants spoke of similarities between the action of ECP and abortion, which they found acceptable; therefore, it did not pose a moral dilemma. The majority of couples though, were also free of moral conflicts with ECP use regardless of their views on abortion, since they saw no similarities between the two

Male: I don't really consider it abortion. I mean it's within the first couple days – it's not like a human being or anything, in my mind.

Female: Yeah. One is preventive. And this is like what happens if there's sort of been a mistake. But I don't see it as like an abortion…**Partner:** Yeah, I mean I definitely would not equate or put those even in the same ballpark, Plan B versus like abortion.

One young woman articulated this view very succinctly.

Female: It had briefly come up before, as like he asked me, "Would you ever get it (ECP)?" And I was like, "Well, yeah, if it was necessary." Because I'm against abortion... I would never do it, and he knows that. So he was like, "Would you ever do that?" (Take ECP)…But I don't think that it's any type of murder to a baby – I mean there's no baby yet whatsoever, so I don't see an issue with it.

Judging the Level of Personal Responsibility Related to ECP Use

Couples views on ECP use with regard to responsible behavior also forged a continuum. A minority felt that the antecedent behavior—unprotected consensual sex, was a serious lapse in judgment regardless of the circumstances. Many other couples took a much more forgiving stance and expressed the opposing view—"mistakes happen".

Those that claimed the middle ground did so by basing their views on contextual issues. One young woman supported the availability of ECP politically, but initially did not see it as an option for herself.

> **Female:** Yeah, I again see regular birth control as the responsible, and fairly easy thing to do. E.C… I hope I never have to use. Because in my mind, there will have been a pretty substantial mistake that happened before that, to lead me to have to use it.

Notably though, her view softened somewhat when she returned for the couple interview, having had discussed it with her partner.

> Yeah. I think what we did talk about is something that certainly we both know is an option (ECP) if that ever did happen…I've been thinking about it more, for example, because I just switched my birth control methods, and I'm having to go back to take a pill every day…

One young man however, was unyielding in his views

> **Male:** I think Plan B, it's like a stupid thing to use it. Because if you're using Plan B, it's because you were stupid enough not to use condom or any other kind of precautions.

Another young man, while not as vehement in his speech, definitely viewed ECP use, especially repeated use, the result of irresponsible behavior.

> **Male:** If a person is engaging in unhealthy activity, having sex here and there, not keeping a monogamous relationship, they might be more prone to use it more often… Um, yeah, I mean it would be like a last resort type of thing, for not being careful.

Another female concurred:

> **Female:** Yeah, we talked about it a few times. I don't think that it should be used, because if you're gonna make your decisions, then you should stick with your plans, even if you're like stupid about it…it's your decision to make in the first place.

Most of those who believed the need for ECP resulted from irresponsible behavior had not used it themselves. However, one young man whose partner had recently taken ECP needed to justify their use of it—it was not irresponsible since it occurred in the context of a "true emergency".

> **Male:** I feel we're very safe about it – because it's really weird that we had to use the morning-after pill…I use a condom every time, and then just one of the times, it happened to break, and I didn't notice it, and so we had to get the morning-after pill… Well, the reason why I feel like I haven't done anything wrong…we did all the necessary steps to do everything.

His statement clearly implied that ECP use, at least for him and his partner, is acceptable only under prescribed circumstances. Though she took a more lenient stance, this notion of conditional approval was also expressed by a young woman who felt that the use of ECP was neither responsible nor irresponsible in itself, but rather dependent upon the situation.

> **Female:** But I think that things happen, and I can understand that. I think it would have been more responsible to be on some sort of birth control, but taking it (ECP) isn't the end of the world. But I do really feel strongly that taking it shows that, in a way, you've been responsible….it's important that people know

that that's not the resort they should take multiple times. But I do think in a sense It's a little irresponsible.

Most participants were also much less judgmental of ECP use by either themselves or others; this was true of both those that had previously used it and those who had not.

Male: I should know to put on a condom, and if I'm not, she should also have the common sense to be like, "Yo!" *(Laughter)*. Sometimes it doesn't happen – people can't be as responsible as they wanna be sometimes.

Another young man, who never experienced the need for ECP in any of his relationships, also held no negative views toward those who might use it. "Yeah. I was gonna say I have absolutely no kind of – there's no like stigma attached to the use of E.C. – for me, it's not." Another concern that a small number of couples had about repeated use of ECP in a monogamous relationship was the low efficacy rate—yet many had concerns about safety.

Judging the Safety of ECP

Couples' views about the safety of ECP also patterned a continuum, but the range of responses was concentrated toward the extreme of toxicity. The most favorable views on safety were mainly neutral, with a minority of participants reporting they had not heard anything negative about ECP. Several couples indicated that they believed ECP was harmful to a woman's body, especially with repeated use. This was true of both couples who had used ECP in the past—often having obtained it from a health care professional, and those who had not used it. Some viewed it as an extremely potent or "super birth control pill".

Female: It's just basically a huge dose of hormones…So I mean that's another difference – I mean regular contraception can certainly have the side effects. But I think I would just feel guilty with putting my body through something like that if I didn't necessarily have to (taking ECP).

Male: I was under the impression that there were side effects – it (ECP) could affect the ovaries permanently, and maybe even cause infertility in some people.

Female: It's not birth control – it's emergency contraceptive…I guess it causes harmful effects, you know what I mean? Like it could put like the woman through a lot.

Female:, From what I understand…it's like taking a whole thing of birth control, and it's pretty potent. I can't imagine it would be very good for your body.

Male: It's like a super-strong dose of the hormone…And to me; it doesn't sound like any super-strong dose of anything is a particularly good idea.

Female: I've heard that the more you use it you become immune to it, like the less effective it is. And I've heard it's bad for you. I don't know how, maybe it's your eggs, your fallopian tubes? I don't know what.

Male: Emergency contraception – just the idea seems to be like more rough on the body than other forms seem to be more like planned ahead and less harmful or not harmful in any way.

Female: I've read somewhere, maybe a study, that taking it multiple times could be really bad for you because that's a lot of hormones all at once. So that's unfortunate.

One young woman relayed the information she had received about the safety of ECP this way:

> **Female:** My teacher told me the Plan B will hurt your ovaries. So not use too much, maybe one year, one time, she say…Yeah, she say if you take too much, probably your ovaries will just break or something like that.

A minority of participants harbored few or no fears about the safety of ECP.

> **Female:** Maybe just some side effects, but I haven't heard anything really negative.
>
> **Male:** I haven't heard much about the safety of it…I could only believe that in the U.S., that a drug that had become so readily available without a prescription – anybody over 18 – that it has to be FDA-approved – that it has to be safe.
>
> **Female:** I've heard it's pretty safe. I know that some of my friends have used it, and their side effects have been pretty mild. So I think it's pretty safe from what I know.

Judging the Efficacy of ECP

Despite the pervasive negative assumptions about the safety of ECP, the range of views on efficacy favored a positive direction—the majority of participants firmly believed ECP would produce the desired results. Their reasons though were varied. Some based it on information obtain from a health care provider or provided on the package insert. More often though, it was word of mouth and/or their own experience that guided their judgment. The following young woman's statement is typical of the majority of participants.

Female: When I see on the box, it says like it's 90-whatever percent effective, like I'm gonna believe that. And like I've heard stories from other people, and they're like, "It works," so I'm gonna believe it.

A young man concurred:

Male: Yeah, I would definitely (encourage his partner to take ECP), if there was a situation that arose where we would need to use it, I definitely would, and feel confident, just because it has happened before, you know."

While very few participants questioned the efficacy of ECP, remarkably, the one young man who was most skeptical was a member of the dyad that had used ECP more than any other couple in the study—four times, and had not experienced a pregnancy. Apparently contextual factors and word of mouth weighed more heavily than his own experience in forming his view.

Male: If I could guess I'd probably say about 80% or something like that. I don't know. I know that my girlfriend's sister got pregnant using it…I know my girlfriend's nephew is a product of Plan B.

Discussion

Despite the widespread availability of ECP and public health initiatives to improve awareness (Coeytaux & Pillsbury, 2001), the level of misinformation and lack of knowledge about ECP among the participants were striking. These erroneous assumptions about ECP were inextricably enmeshed with the meanings ECP use held for many couples. The most prevalent misconception involved the safety of ECP; one or both members of nearly one half of the couples (n=9) expressed unfounded fears or concerns about the potential harm to a woman's body that may result through either the use or

repeated use of ECP. Some also expressed concerns about potential harm to a fetus in situations in which ECP is ineffective. These concerns have the potential to prevent or delay the use of ECP when it is indicated and thereby increase the risk of an unwanted pregnancy.

The second pervasive misconception was that ECP is somehow related to abortion. A few participants were aware of the possibility of a postovulatory effect of ECP interfering with implantation (Croxatto, et al. 2003) and therefore had moral concerns about its use; yet others who did not have this level of knowledge and sophistication viewed ECP as a true abortifacient regardless of when in the menstrual cycle it is taken— that it can somehow disrupt an established pregnancy. Even some participants who explicitly stated that that ECP was just another form of contraception and ethically equated to oral contraceptive pills, went on to use terms such as "ending the pregnancy" or "expelling the fetus" when explaining its action. This misconception may not only prevent those who are morally opposed to abortion of availing themselves to ECP, it may also pose a barrier to those who have no moral opposition but are concerned about the "seriousness" of ECP use or possible harmful sequelae. It may also create conflict in a relationship when one partner is misinformed and the other is not, as evidenced by one of the couples. This conflict may arise the first time ECP is needed— often the first time it was discussed between partners in the study, and cause a delay in obtaining it when efficacy is dependent upon expediency (ACOG, 2005).

While the lack of knowledge and misconceptions about ECP found in these couples are particularly concerning since the participants were relatively well educated and most had access to health care, this finding is consistent with previous research. In a

survey of a coed sample of college students (Corbett, Mitchell, & Taylor, 2006) 86% of respondents were unable to differentiate between ECP and RU-486 (the abortion pill), and nearly one third voiced moral objections to its use. Additionally, only 34% of females who had a gynecological exam in the previous year reported being informed of ECP by their providers. In similar U.S. studies with samples of college students, overall knowledge of ECP was found to be low (Sawyer & Thompson, 2003) as were reported discussions about ECP between females respondents and their healthcare providers (Vahratian, Patel, Wolff, & Xu, 2008). Perceived safety of ECP use, a salient finding in this study, was not examined in previous studies.

Due to the pervasive misconceptions and lack of knowledge regarding ECP that emerged, nurses and all clinicians who provide care to adolescents and young adults need to focus more on education and exploring ways to dispel these misconceptions. The most basic intervention would be to routinely incorporate discussions about contraception, including ECP, into primary care visits. Also, clinicians who work with this population need to be aware of the prevailing misconceptions—in this sample that ECP is toxic and it acts as an abortifacient—and address these myths when providing care. It is only with accurate information that young couples will be able to make sound decisions.

Clinicians also need to expand their focus with reproductive health teaching to include young men, and begin to acknowledge the salience of couple dynamics. All participants in this study were surveyed about the circumstance in which they first learned of ECP, yet among the young men, only one reported being informed by a health care provider. Ideally, this teaching should occur in the context of routine care. This approach may have a limited impact though, since young men access primary care

services with considerably less frequency than their females counterparts (Raine, Marcell, Rocca, & Harper, 2003). However, if clinicians would address relationship issues when discussing contraception with both genders, it would provide a means to integrate the males, who are not directly accessible, into care. Additionally, awareness by clinicians that young men and women do not make decision about contraception independently of one another, and recognition of the importance of couple dynamics in this process, increase the likelihood of successful contraceptive behavior. This approach to the reproductive health would facilitate the ultimate goal—preventing unwanted pregnancies among adolescents and young adults.

Through the processes of contemporary constructivist grounded theory methodology, key concepts were identified to partially explain the complexities of decision making regarding ECP use in young couples. Even with the high level of education among the participants, pervasive knowledge deficits and misconceptions emerged, which were enmeshed with the meanings that ECP use held for many couples. Further research is needed in this area.

Limitations

One of the limitations of this study—a result of the self selection process of participants, was the lack of diversity among the couples. Most were well educated, all were heterosexual, and none experienced a pregnancy despite ECP use. Through the process of theoretical sampling, a future grounded theory study might include lesbian couples and those having varied backgrounds and experiences. This widened focus may yield different findings and clinical implications. Despite, or perhaps as a result of this limitation, this study is consistent with the goals of contemporary constructivist grounded

theory—pursuing angles of vision that elucidate situated complexities rather that generalities (Clark, 2005). Another limitation is that the study makes no claims to a substantive theory. Yet the findings move beyond description into the realm of explanation, which is also consistent with contemporary constructivist grounded theory (Clark). This study was the first step in developing a substantive theory of young adult couples' decision making regarding ECP use.

Chapter 4.

Abstract

Unintended pregnancy is an increasing societal problem in the US. The incidence is greatest in women under the age of 25. Emergency contraceptive pills (ECP) are a safe, effective form of contraception that is well suited to this age group. Despite these advantages, there continues to be low use of ECP among young women. Little is known about how partner influence and couple dynamics impact the decision making about ECP use. The purpose of this grounded theory study was to explore and better understand the reasons for the seemingly underuse of ECP among adolescents and young adults in coupled relationships. Semi-structured face-to-face interviews were used to obtain data from twenty-two couples aged 18-25 years old. Consistent with contemporary grounded theory methods, data analysis was use to construct four distinct categories to help explain the complexities involved in young couples' decision making regarding ECP use.

Clinical Relevance: The results of this study contribute to the body of knowledge with regard to decision making related to ECP use in adolescents and young adults.

Despite a decreasing trajectory beginning in 1991 and continuing over several years, the United States has one of the highest pregnancy rates in adolescent and young adult women among industrialized nations (Alan Guttmacher Institute [AGI], 2006a). A large percentage of these pregnancies are unwanted (Trussel et al., 2009). The detrimental consequences of unwanted pregnancies in young women are well documented (Cheng, Schwartz, Douglas, & Horon, 2008). Exacerbating the problem, recent data reveals a reversal of the trajectory—pregnancy rates are now on the rise in this population (Hamilton, Martin, & Ventura, 2007).

Emergency contraceptive pills (ECP) are a safe effective form of contraception (*American College of Obstetricians and Gynecologists* [ACOG] *Practice Bulletin*, 2005) that has been underutilized by young women for reasons that are not entirely clear. Partner influence and couple dynamics may be contributing factors (Free & Ogden, 2005), but there has been little research in this area (Cubbins, Jordan, Rutter, & Tanfer, 2007). This grounded theory (Glasser & Strauss, 1967) study was conducted with coupled young adults to explore and better understand their experiences with ECP and the reasons for this underuse.

Unintended pregnancy

Unintended pregnancy, particularly in young women, is an ongoing societal problem in the U.S. (Martin et al., 2009). In 2005, an estimated 2.4 million pregnancies occurred among females less than 25 years old; nearly 50% of those were unintended (Center for Disease Control [CDC], 2009). The number of unintended pregnancies is highest among women 18-24 years (Finer & Henshaw, 2006, Trussel et al., 2009). Several studies have documented the negative outcomes for young women associated

with these pregnancies including: an increased number of abortions, depression, and decreased quality of life (AGI, 2006b). More alarmingly, recent data reveals a greater than 3% rate increase in births among all females less than 25 years of age from 2005 to 2006—this is the largest increase since 1989 (Hamilton, et al., 2007).

Emergency Contraceptive Pills (ECP)

Emergency contraceptive pills are indicated to prevent undesired pregnancy after non-contracepted sexual intercourse (ACOG, 2005). A large body of literature documents that ECP is a safe and effective form of birth control with few side effects (Trussel, Ellertson, Stewart, Raymond, & Shochet (2004); World Health Organization [WHO], 1998); and it has the potential to significantly reduce the number of unintended pregnancies (Society for Adolescent Medicine, 2004). ECP is also well suited to the developmental needs of many young people since advanced planning is not required (Gordon, 1990). Additionally, recent changes in the healthcare system now make ECP easily available at most pharmacies (Harris, 2006). Despite strong evidence in support of the use of ECP, many young women—who would most benefit, have not availed themselves to it. The reasons for this underuse remain unclear.

Complexities of Contraceptive Decision Making

Young women's birth control utilization is a complex processes (Adler, 1981; De Visser, 2007). The arena of sexuality and reproductive decision making includes a myriad of emotions along with cognitive processes that are impacted by many contextual factors, (Lerner, 2002). One of these factors is the role that male partners play (Free & Ogden, 2005). To date only limited research has explored this relationship. The studies that have focused on the couple dyad as the unit of analysis have narrowed samples to adult, often

married, couples (Becker, 1996; Cubbins, et al., 2007). The few studies that explored the influence of couple dynamics in adolescent and young adult contraceptive use focused mainly on methods that require advance planning such as oral contraceptive pills (OCPs) and condoms (Ryan, Franzetta, Manlove, & Holcomb, 2007; Manning, Longmore, & Giordano 2000); ECP use may not require the same level of negotiation. Most studies examining young people and ECP use restricted samples to primarily females (Gold, Sucato, Conrad, & Hillard, 2004; Raine, et al., 2005); those that did include males made limited use of that data or focused solely on knowledge level (Cohall, Dickerson, Vaughn, & Cohall, 1998). The only U.S. study that explored couple dynamics in relation to ECP decision making included women of various reproductive ages; it found that male dominance in decision making, pressure for sex, and a strong desire by the male to avoid pregnancy were associated with ECP use, while relationship satisfaction was not (Harper, Minnis, & Padian, 2003). However, this study, which utilized a secondary analysis of data, was limited by only one measure of ECP—ever used—and the data was collected at a time when access to ECP was limited (1995-1998).

A more recent study conducted in the UK, in which focus groups were convened to explored teens' beliefs about ECP (Bayley, Brown, & Wallace, 2009), found that while males wanted to communicate their wishes to their partners regarding ECP use, they were inhibited by the possibility of being perceived as applying pressure. Some female participants validated their concerns—they construed a male's request to his partner for ECP use to be a display of selfishness. Additional influences of this nature, both explicit and liminal, which have yet to be elucidated, may also be salient to young adult couples' ECP decision making.

Developmental Antecedents

In addition to the dearth of studies that focused on the young couple dyad, little attention has been paid to the developmental perspectives of its members. Identity formation and the development of a capacity for intimacy are the hallmark developmental tasks of late adolescence (Erikson, 1968). Expanding upon Freudian theory, Erikson further posited that while the processes are interrelated, they are independent and sequential, and it is only possible to experience true intimacy after identity has been established. Subsequent theorists argue that the processes involve several levels of organization and extend into the emerging adult period; therefore, they are not sequential but overlap and contribute to one another other (Reis, Collins, Berscheid, 2000). Regardless of the sequence and interaction of these critical life tasks, romantic relationships are crucial to both, and ultimately to successful development. They provide context for psychosocial interaction and maturation (Hennighausen, Hauser, Billings, Schultz, & Allen, 2004; Montgomery, 2005), and their characteristics are often reflective of the participants' positions in their own developmental trajectories. Relationships between partners who have not achieved a capacity for intimacy are characterized by isolation and self interest; while characteristics such as commitment and collaboration more often describe relationships between partners capable of intimacy (Paul & White, 2003).

These relationship characteristics may also be salient contextual factors in young couples' decision making regarding ECP. Therefore, how couple dynamics influence the use/nonuse of ECP in young women is an area that requires further exploration. The purpose of this study was to explore and better understand the reasons for the seemingly

underuse of ECP among adolescents and young adults in coupled relationships. This article elaborates on the findings as they relate to couple negotiations and decision making processes about ECP use. Approval was obtained from the University of California, San Francisco, Committee on Human Research prior to any study procedures.

Methods

This was a grounded theory study**.** Grounded theory is a highly-developed methodology that is characterized by an inductive approach to systematically interpret qualitative data. Its goal is the development of theory derived from the data, which explain the meanings of human behavior from the perspective of the participants (Glaser & Strauss, 1967). While theory development was the original goal (Glaser & Strauss), a grounded theory study may also focus on a more limited scope of situated human interaction to develop a theoretical narrative, which explains the meaning of those the interactions and processes through grounded theorizing (Clark, 2005).

Sampling and procedures

A convenience sample was recruited via public notices and snowball sampling (Fain, 2004). Inclusion criteria were: females aged 18 to 25 years, English speaking, with basic knowledge of ECP, and currently involved in a sexual relationship with a partner—also English speaking and willing to participate in the study. Prior ECP use was not a requirement. All interested young women initiated the first contact with the researcher by email or telephone; at that time potential participants were screened for knowledge of ECP and an explanation of the study was provided. If a young woman met the inclusion criteria a convenient time and location was arranged for the initial meetings that would also included her partner. The only exception to this procedure was one couple in which

the partner was initially unavailable and met with the researcher at a later date. An in-depth explanation of the study was provided to both partners at the first meeting, after which written consent and demographic information were obtained. The study design included three semi-structured interviews conducted with each couple/dyad: individual interviews scheduled consecutively—each lasting 30 to 45 minutes, and a 45 to 60 minute couple interview approximately one week later. The interviews took place in various public settings or the couples' homes. Each member of the dyad was given $25.00 per interview as compensation. Interviews were conducted from October 2008 to August 2009.

Participants

Twenty-two heterosexual couples (*N*=44), sexually involved from 6 months to 4 years, were interviewed. All participants were 18 to 25 years of age. The large majority (*n*=40) had a minimum of one year of college. Racial and ethnic self identification included: 4 African-Americans, 3 Asians, 3 Hispanics, and 34 Caucasians. All participants had some knowledge of ECP prior to the first interview. One-half of the couples (*n*=11) had no personal experience with ECP use, while 10 had used it at least once in their present relationship, and the partners in one couple had each used it in a previous relationship only.

Data collection and analysis

All interviews were audio-taped and transcribed verbatim. Additional data was obtained through participant observation; individual behaviors and couple interactions were recorded in comprehensive field notes to augment authenticity (Beck, 2009). Analysis began simultaneously with data collection as dictated by the tenets of grounded

theory. All analytical processes were performed by the first author under the guidance of three senior researchers experienced in qualitative research and grounded theory. The initial analysis consisted of strategies of open coding and memoing (Glasser & Strauss, 1967). As these processes progressed, axial coding and continued memoing were performed to identify core categories and their relationships. As new categories emerged, the original interview guide was revised and additional couples were recruited to allow for theoretical sampling (Strauss & Corbin, 1998) and focused coding (Charmaz, 2006). Member checking occurred throughout the analysis; findings were shared with subsequent couples to meet the requirement of confirmability (Denzin & Lincoln, 2000). Saturation—when no new categories emerge (Strauss & Corbin) was reached after interviewing eighteen couples, but five more couples were included to insure comprehensive analysis, as well as theoretical verification. As the analysis continued through the processes of grounded theorizing, distinct categories consistent with contemporary grounded theory principles (Clark, 2005) were constructed to explain the experience of young couples regarding ECP. The findings presented below (and in table 1) focus on couple negotiations and decision making related to ECP use.

Findings

While nearly every couple agreed that in "a perfect world" the responsibility for contraception in a relationship should be shared, many realized this was not always the reality.

> **Female:** In a perfect world, it should be shared. I think you should be able to take turns. I'll be on birth control because you're not…if I wasn't on birth control, he'd take the responsibility. But it's just easier and more enjoyable for us for me

to use it. But in a perfect world, if you could take a pill he would. I wouldn't be taking it all the time. **Partner:** I don't know about that. In my perfect world, it is a shared responsibility, but the responsibility doesn't necessarily equate to who's taking a pill…it's like my role in the shared responsibility is making sure that she takes it, which a lot of times is just telling you to take your birth control, or going to pick up her prescription. **Female:** And that's what we do, but in my perfect world, I wouldn't have to take the pill at all.

With regard to ECP decision making though, couples' views varied from that of other forms of contraception in part due to the irregularity of the need for it. Two concepts that were interwoven within the narratives about this process were trust and power. Issues of power dynamics most often became prominent when individuals spoke of lack of trust toward their partners. Young men spoke of vulnerability regarding ECP decision making when they were with someone they did not share an emotional attachment with such, as a new partner; conversely, young women in similar situations spoke of being in control. While these women often described hormonal contraception in the context of a women's burden, both genders were well aware of the biological reality—ECP use could ultimately be decided by a female without considering her partner's wishes.

Feeling vulnerable

Male: It's my responsibility, too, because I'm not ready for children, so I don't really wanna have that risk. It's definitely a problem.

Male: Yeah, definitely. I have friends who like slept with someone, and then they don't tell them that they're pregnant. And then they just go ahead and have

the baby…that's not really responsible on the woman's behalf; because what if the guy didn't wanna have the kid...so I would definitely say go with emergency contraception.

Male: Yeah, after the fact, the female can like decide to carry out the pregnancy for whatever reason, and that wouldn't really leave the guy with much decision in anything.

In one couple that had never used ECP, the young man's vulnerability was precipitated by his partner's ambivalence about possible future use of ECP if needed.

Male: I think you should use it (ECP) if I think something was gonna happen, so I would be like, well, you should, but it's not really my decision 100%. But I would be like, "Hey, can we try it out just in case?", because we can't have a child right now.

Another young man felt confident that he would be involved in the decision making in his current relationship because it was based on trust. In general though, he felt males have little power in the decision making process if their partners chose not to involve them.

Male: I'm in a relationship—I think it is a mutual thing. I know if I were dating a girl and if I were to get her pregnant, there is really not anything I can do about it. It's really ultimately her choice. I can have my input and everything, but that's only worth what she wants to say, so it's really on me just as much as it is the girl to avoid pregnancy in the first place, you know?

While many of the young men had confidence in their partners' judgment, they realized the use of all hormonal contraception, including ECP, was ultimately the young woman's choice.

> **Male:** I've always thought that we kind of make decisions as a couple. But I think it's pretty driven by (partner) because it's her body…. it's kind of on her, and so she makes decisions based on how the drug is interacting with her body, and I just support her.
>
> **Male:** I'd say together, but it's the girl's choice at the very end if you can't agree.
>
> **Male:** I mean I think it's her body – you should know what you wanna do with it. I can't force her to do it if she doesn't want it.

Relinquishing any role in decision making

While most men expressed feelings of vulnerability and found their lack of authority in the decision making process disquieting, a minority indicated they were quite comfortable with their partners making the decisions.

Male: "Which I'm in agreement with completely – your reproductive rights—keep them." This young man's statement may have been guided by bravado—it was made during the couple interview in retort to his partner's statement avowing that at this point in their relationship the decision making was hers alone. However, another young man expressed a similar viewpoint during the individual interview, and therefore not in direct response to his partner.

Interviewer *And in general, who do you think should be responsible for birth control? Do you think it's the man's, the woman's?* **Male**: "The woman's" (He did not elaborate, but the immediacy and brashness of his response and body language indicated a resolve

that it was his partner's responsibility—his partner had stated that it was the responsibility of both.)

A few individuals attested to an egalitarian approach to contraceptive decision making in their relationships, yet described a reality in which one partner carried significantly more responsibility.

> **Male:** Yeah, they should make the decision together (regarding ECP)...For the most part, it's just her; I haven't really dealt with it (ECP—partner had taken it previously on two occasions)…It's mostly – like at that point, to keep an extra dose, it's up to her.

Several young women considered most forms of birth control, including ECP, a female's burden—conversely, they also realized along with this burden came the power to control contraception, and with ECP to make the final decision. Some stated they would not want to rely on their partner in the hypothetical situation in which a male hormonal contraceptive was available due to questionable compliance on his part. When referring to the realities of ECP use though, they and several other young women cited deeper issues, such as the right to make decisions about their own bodies. While nearly every couple agreed on the use/non-use of ECP (n=20) with most expressing at least conditional approval (n=19), all the young women in the latter group said they would still use ECP if needed in the suppositional situation of a partner who objected. Therefore, all of them realized they were ultimately in control of the decision making process.

Being in Control/Having Autonomy over One's Own Body

> **Female:** Like the first time I took it, yeah, we discussed it, and it was just like, "We need to do something," and we did it…I've actually used it twice since

we've been together. Actually with (partner) there's been two other times where I've used it and haven't discussed it with him, where I just decided to go ahead and use it… I think I just felt sort of, I don't know, unsure of his – sometimes I think that he just really wants to procreate – this sort of like narcissism, like "I wanna be immortal." This was like in the beginning when I didn't know him as well, and that's just what I was thinking, and there were two times. But there were two times that we did discuss it, and it seemed like the best thing.

Female: I think the woman, just because…I think it's more my life, compared to his because it's my body… And the morning-after pill, that's more my responsibility, too.

Female: I mean if I wanted to take it, like he couldn't really do anything to stop me….I mean if he said, "No, I don't want you to take it," it's like, well, it's my body. So…we didn't really discuss that. I don't think we're at that point where like my reproductive rights are in both of our hands. We're not like at that point in our relationship

One couple, who had never had a need for ECP in their relationship but supported its use, took the position that they both would always be involved in the decision making process—they would never be involved with someone who did not support their views about contraception.

Male: I don't think I could get into a relationship with a person like that.

Female: I think that would be very difficult, especially for me, to be dating a man particularly who sort of felt that way. I hope to never be dating a man who would feel like I needed to do something that I didn't want to do with my body.

Being in conflict with partner

Notably, there were only two couples who expressed dissonance regarding ECP. In the first instance the conflict centered on the meaning of ECP and was resolved—after the first use.

> **Female:** I was like (Partner) have you heard about the Plan B and he's like "yeah, isn't that an abortion pill", and I said it is not. And I got all aggressive…and I told him it's not the abortion pill, and he's like "Well, it's stopping with the child" and I was like no, and I explained to him and then he's like "Oh, Ok", but he was one of those abortion people. **Male:** When I first heard about it, I thought it was the abortion pill or something…You know, the first time she took it, I still thought it was, until she was like it's just a stronger birth control pill I said "Ok, that makes more sense.

While the young man believed ECP was an abortifacient, he did not experience any ethical misgivings with its use. The second couple though, exhibited a marked moral polarity in their views during the initial interviews. This dyad included the young woman who believed the use of ECP was wrong under any circumstances

> **Female:** So what I have about it is a bad perception. I think that it's kind of unethical; in my opinion…I think that emergency contraception is on the side of abortion to me, because that's just like killing something.
>
> **Male:** Well, you know, even before coming to this interview…I didn't know much about it. Like if this is available, I don't know how effective it is. But if it's very effective, then why would you use contraception? Maybe you would just like – you know, we don't have to worry about any contraception, and we just

can take this. You can just take this next day and it'll be fine. **Interviewer:** *So you don't see it as similar to killing the fetus or anything like that?* **Male:** No, I don't, but in fact it is. I mean so it's not a bad thing from my point of view. But again, you know, there is family and stuff that are involved in. **Interviewer:** *So hypothetically speaking, I mean are you in favor of – if someone wants an abortion, is that okay with you?* **Male:** I'm in favor, yeah definitely.

While both of their views were based on an erroneous assumption—ECP is an abortifacient, they were clearly conflicted in their moral evaluations of ECP use. These two individuals were most likely unaware of each other's views at that point though because they discussed ECP for the first time immediately prior to the individual interviews; the young man was still forming his opinion when he spoke with the interviewer. Unfortunately, they did not reveal how they were negotiating what would probably evolve into a conflict since they did not return for the joint interview. This couple was also notable because the young man identified family as a significant contextual influence in the decision making process, which may be an area for future research.

Discussion

An encouraging finding concerning decision making was that most couples (n=20) agreed that ideally, contraception should be a shared responsibility in a relationship. This concept of shared responsibility has been shown to be an emerging value among college age populations for several years (Sheehan, Ostwald, & Rothenberger, 1986). Also, the discrepancies found between perceived and actual decision making supports the findings of previous research. In a survey of over 1,000

couples of reproductive age (Cubbins, et al., 2007), perceptions of contraceptive decision making were influenced by partners' objective and relative characteristics such as age, education, sexual experience, etc.

One of the most notable findings was the emergence of trust and power in the decision making process. Males reported vulnerability related to ECP decision making when intimacy was lacking in the relationship, while females expressed perceptions of control. However, further study is needed to explore the nature of these factors; level of emotional of development of the partners versus relationship factors such as duration, or a combination of both (Hennighausen et al., 2004; Lear, 1995). Some participants clearly related lack of trust and feelings of vulnerability to the brief history of a relationship; others, such as the young woman who took ECP without informing her partner, described instances where emotional development may have been a salient factor.

An unexpected finding was the level of agreement within the dyads on ECP decision making—only two couples had opposing views regarding the use of ECP. A systematic review of the literature on married couples and reproductive health (Becker, 1996) found only 60% to 70 % concordance rates between spouses on family planning attitudes and intentions. The lack of dissonance found here, specifically among couples who had used ECP, may be in-part due to the realities of the situation; if both partners' wished to avoid pregnancy, they may have been in a situation where they viewed ECP as their only option. Another factor may be partner selection; as one couple indicated, some individuals may choose to engage in relationships only with partners who concur with their views, though this would be in contrast to Becker's findings. Lastly, and perhaps

most importantly, the high concordance rate may be due to the sampling design—self selection of participants; conflicted couples may have been reticent to participate.

Limitations

The findings of this study need to be interpreted with caution due to several limitations. The sampling process allowed for self selection, which may have resulted in both a majority of participants who were supportive of ECP use and also the high concordance of views found within couples. In addition, the sample included only heterosexual couples. A study which includes couples with divergent views situated in varying socioeconomic and cultural backgrounds might produce different findings. The absence of ECP failures among the participants may also be a result of self selection. A future grounded theory study might focus on these issues through the process of theoretical sampling. Lastly, the study makes no claims to substantive theory; however, the findings move beyond description into the realm of explanation consistent with contemporary constructivist grounded theory methods (Clark, 2005). Despite these limitations, the findings of this study add to our understanding of the complexities of decision making regarding ECP in adolescents and young adults.

Conclusions

This study provides a further understanding and the basis for future grounded theory formation regarding decision making processes in young adult couples about ECP use. The findings highlight the importance of partners' influences in the contracepting behaviors of young women in coupled relationships—particularly ECP use/non use. Nurses whose practices include young people need to be aware of these dynamics and address them when discussing contraception with both genders. Addressing couple issues

in reproductive health teaching will augment successful contraception, and ultimately reduce the incidence of unintended pregnancies among young people.

Chapter 5.

The purpose of this grounded theory study was to explore the knowledge, attitudes, and experiences of young couples regarding ECP to help explain the reasons for the underuse among young women. The review of the literature revealed that globally, lack of awareness and sufficient knowledge for effective use are the primary barriers. Reasons for the lack of knowledge varied by region and cultures; in Latin American countries, the Catholic Church still has a negative influence on sexual education and contraceptive use, and continued reliance on traditional medicine men presents a barrier in many areas of Africa. However, the one nearly universal factor impeding knowledge dissemination about ECP was that most young people obtain reproductive health information primarily from friends, with healthcare providers identified as being far less influential. The pervasive lack of knowledge regarding ECP found world-wide is especially concerning since the WHO (2005) considers fertility regulation in young women to be a major health challenge in the 21st century.

Awareness of ECP was an inclusion criterion for the present study and therefore, not a relevant indicator of knowledge. However, the findings do reveal several areas where lack of knowledge or incorrect information about ECP posed a barrier to use. The misinformation or misconceptions were found to be enmeshed with the meanings that ECP use held for couples, especially negative meanings. Perhaps the starkest example of this was the notion that ECP in some way acts as an abortifacient. One young woman, who held this misconception found abortion morally unacceptable, and therefore, also the use of ECP. Among the participants who were accepting of abortion and therefore experienced no moral conflict, this misconception was still cause for hesitation, due to the implied "seriousness" it renders on ECP use. Additionally, there were some

participants who clearly stated that ECP was not abortion, yet used terms such as "getting rid of the baby" when describing its actions. Statements like these may indicate a subliminal blurring of the concepts, which may also result in ambivalence about ECP use. This misconception has been found in previous studies; 40% of the respondents in a California based population survey (Salganicoff, 2004) and nearly 90% of a sample of college students (Corbett, 2006), could not differentiate between ECP and RU 486 (medical abortion). Approximately one half of a sample of women of child-bearing age in a Pennsylvania study viewed ECP as a form of abortion (Whittaker, Armstrong, & Adams, 2008). These findings are not surprising given that some healthcare professionals conscientiously refuse to provide ECP because they also consider it equivalent to abortion (Card, 2007).

The most prevalent misconception about ECP use, found in one or both members of approximately one half of the couples, was that it may cause some vague, yet serious, harm to a woman's body. These beliefs ranged from "it can't be good for your body" to possible sterility with repeated use. This notion that ECP may be toxic was found among both those couples who had used ECP and those who had not. Even though this misconception did not necessarily preclude usage, it caused significant anxiety among many of the participants, which may potentially delay use. This concern about possible long-term negative sequelae from ECP use has only been reported in one other recent US study, which consisted of semi-structured interviews with a sample of adolescent females (Mollen, et al., 2008). The paucity of this finding is surprising given its pervasiveness among the participants in this study, though quantitative methods, which have been used in most ECP studies, may not be capable of eliciting this type of data.

The final meaning that couples attributed to ECP use, which is also a potential barrier to use, was not based on correct or incorrect factual information, but rather on beliefs about personal responsibility. While most couples placed no value judgments on ECP use or supported conditional use, others viewed the need for it the result of irresponsible behavior—engaging in unprotected sex. The young women in the Mollen et al. study (2008) expressed similar views. This finding has implication for future use. Paraphrasing one young woman in this study: People decide to have unprotected sex, so they should live with the repercussions, even if the original decision was based on poor judgment. Other young people sharing this belief, who find themselves in need of ECP therefore, may be reluctant to use it.

Our study revealed that in terms of contraceptive decision making and responsibility, nearly all couples supported the concept that the process should be shared equally between partners. This finding may be related to the educational level and cultural background of the participants; an egalitarian approach has been found with similar populations (Sheehan et al., 1986), but a later study of adult Hispanic men and women (Gomez & Marin, 1996) found that both males and females viewed contraception as a woman's responsibility. Further research is needed in this area; a study of young couples from various ethnic backgrounds or with less education may also find an adherence to more traditional views of contraceptive responsibility.

Despite strong support for equality in contraceptive decision making, including decision making about ECP use, partners sometimes described different realities. Among a small number of couples, the partners avowed they shared decision making equally, but their narratives revealed one partner to have greater responsibility. This discrepancy has

been reported previously in the literature. In a survey of adult couples (Cubbins et al., 2007) perceptions of contraceptive decision making were found to be influenced by both relative and objective partner characteristics.

A significant finding of our study was the perception of the distribution of power between partners regarding ECP use, especially in relationships or situations where trust was lacking. The young women reported being in control, while their partners reported feeling vulnerable, since the final decision could be made without the males' input. Most females, while valuing their partner's opinion, expressed a belief in autonomy over their bodies. Gender role ideology has been found to have a large influence on the relative ability of one partner to act independently in contraceptive decision making (Sprecher & Felmlee, (1997). This was found in our study, particularly when young women were presented with the hypothetical situation of partner conflict. However, in reality other factors such as quality of communication between partners and commitment to the relationship have also been found to have an influence (Billy, Grady, & Sill, 2009). Decision making about ECP use is somewhat unique though, in that a female may choose not to involve her partner at all, as one young woman did in our study. Therefore these issues may less relevant, if a partner is totally unaware. More research is needed in this area.

An unexpected finding was the high concordance rate between partners regarding their views on ECP. Contrary to the findings of adult couple studies focusing on partner concordance in subjective matters of reproductive health (Becker, 1996), nearly all the couples in our study were in agreement in matters related to ECP. This finding may be a result of one of the limitations of this study—self selection of participants. Early in the

recruitment process interested individuals were made aware that participation in the study would involve an in-depth discussion of ECP in the context of their relationships. Couples who were experiencing conflict regarding ECP use may have been uncomfortable in divulging this information in a research setting and therefore, chose not to participate. The couple, which appeared to be experiencing the most conflict regarding ECP use and subsequently did not return for the joint interview, may be an example. The absence of an ECP failure among the participants may also be a result of the sampling method. Those who had a negative perception of ECP may also have been less willing to participate. Future studies with diverse couples, such as lesbians, and couples with varied demographics and experiences may produce different findings.

While the presence of intimate partner violence (IPV) was an exclusion criterion for this study due to ethical issues regarding mandatory reporting, it may be an area for future research. A written survey study conducted with women of all reproductive ages, who experience experienced IPV (Gee, Mitra, Wan, Chavkin, & Long, 2009) found that woman in abusive relationships had less power in decisions related to contraception, such as the use of condoms, and therefore, used ECP more often than other women. A study of this type, with a qualitative design, which at least isolates the results of adolescent and young adult women, may produce findings leading to earlier interventions.

In addition to participant self selection, another limitation of this grounded theory study was that a substantive theory was not constructed from the data. However, the findings move beyond description into the realm of explanation consistent with contemporary constructivist grounded theory methods (Clark, 2005). The findings of this

study also provide a basis for future theory development regarding young adult couples' decision making about ECP use.

The findings also present implications for practice. Given the extent of lack of knowledge and misconceptions about ECP among relatively well educated young adults, the primary focus of clinicians needs to be on more comprehensive teaching. Providing information about birth control in general, including ECP, should be an integral part of primary care. Additionally, clinicians working with adolescents and young adults need to shift their focus to the couple dyad when appropriate. These interventions are necessary to facilitate successful contraception, and ultimately help to decrease the incidence of unwanted pregnancy in this age group.

Appendices

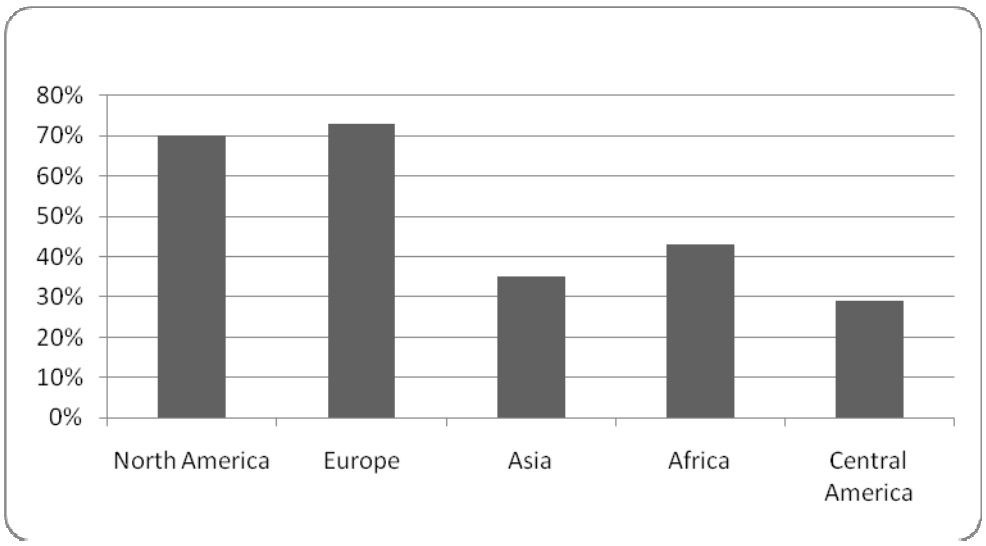

Figure 1. ECP awareness (%) among young women and men by continent.

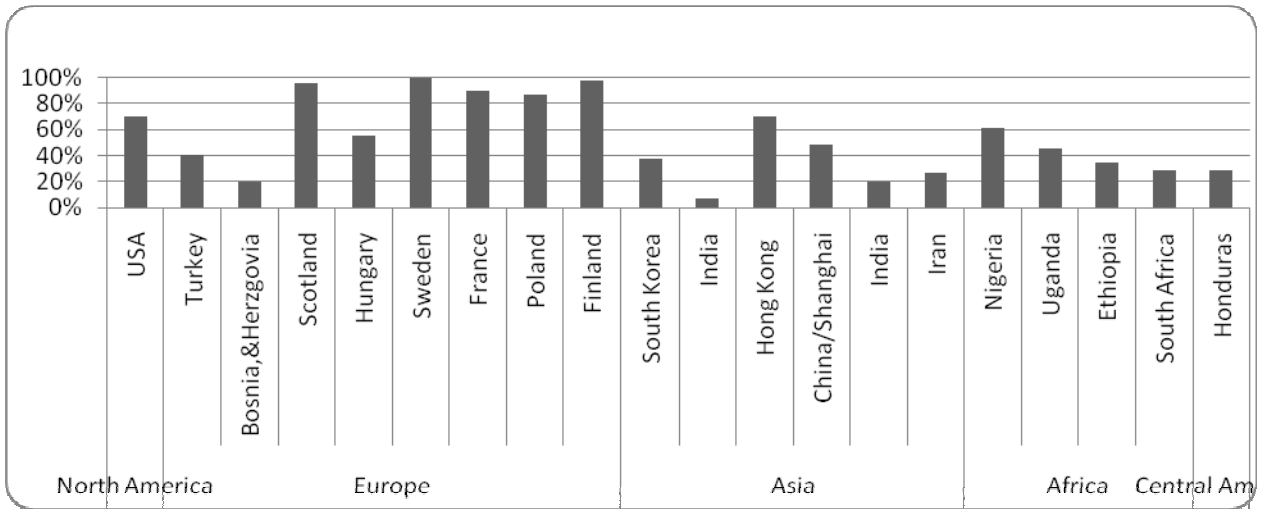

Figure 2. ECP Awareness (%) among young women and men by country

Table 1.

Studies of Adolescents' and Young Adults' Awareness and Knowledge of, and Attitudes Toward ECP

	Author year country	Design/ data source	Sample	Awareness of EC	Correct identification of ECP	Correct identification of time parameters	Attitudes towards ECP		Source of information			
							Pos	Neg	Family/ Friends/ Partner	Health care	Media	Other
AFRICA	**Abasiattai, et al. (2007) Nigeria**	Cross-sectional/ written questionnaire	Female university students, 56% aged 16-24 (*N*=860)	68%	Often used Infective and dangerous substances	—	—	—	33%	0.8%	26%	40% medicine man
	Akani, et al. (2008) Nigeria	Cross-sectional/ written questionnaire	Female university students aged 17-30 (N=600)	50%	Quinine and ECP cited equally	88% (of those aware) knew it was to be taken "after intercourse"	—	—	65%	19%	—	92% previous users of EC who obtained it from medicine dealers
	Aziken, et al. (2003) Nigeria	Cross-sectional/ written questionnaire	Female university students aged 15-24 (*N*=880)	58%	46% (menstrogen most often cited-50%)	18% (of those aware)	—	—	38%	48%	—	14%
	Byamugisha, et al. (2006) Uganda	Cross-sectional/ written questionnaire	Female university students aged 18-25 (*N*=379)	45%	—	58% (of those aware)	—	64% against OTC access	34%	—	25%	20% (school)

Table 1. (*continued*)

	Author /\ear country	Design/ data source	Sample	Awareness of EC	Correct identification of ECP	Correct identification of time parameters	Attitudes towards ECP		Source of information			
							Pos	Neg	Family/ Friends/ Partner	Health care	Media	Other
	Ebuehi et al. (2006) Nigeria	Cross-sectional/ written questionnaire	Female under-graduates, 70% aged 15-24 years old (*N*=480)	68%	36% (of those aware) (menstrogen most often used-60%)	38% (of those aware)	—	—	64%	35%	—	1%
	Ikeme, et al. (2005) Nigeria	Cross-sectional/ written questionnaire	Female tertiary school students 97% < 30 years old (*N*=420)	61%	Levonorgestrel most commonly used (17%), followed by menstrogen (5%)	"Majority of students did not know"	40% would recommend to friends	56% (fear for future fertility)	38%	—	37%	25% school
AFRICA	**Kebede, (2006) Ethiopia**	Cross-sectional/ written questionnaire	Undergraduate college students, mean age 21years, 70% male (*N*=2323)	24% no difference in awareness between male & female	77% (of those aware)	73% (of those aware)	—	—	—	—	—	—
	Mqhayi, et al. (2004) South Africa	Cross-sectional structured interviews	Females attending primary care clinics (urban & rural), aged 15-24 (*N*=193)	25% urban 11% rural	—	42% urban 17% rural (of those aware)	—	—	—	—	—	—

Table 1. (*continued*)

	Author year country	Design/ data source	Sample	Awareness of EC	Correct identification of ECP	Correct identification of time parameters	Attitudes towards ECP		Source of information			
							Pos	Neg	Family/ Friend/ Partner	Health care	Media	Other
	Myer, et al. (2007) South Africa Roberts,	Cross-sectional semi-structured interviews	Females attending primary care clinics (urban & rural), median age 26 years, (*N*=831)	35% urban 17% rural (lowest awareness among teenagers)	—	27% urban 12 % rural (of those aware)	—	—	40%	27%	9%	5% school
AFRICA	**Roberts, et al. (2004) South Africa**	Cross-sectional/ written questionnaire	University students (40% male) mean age 20 (*N*=722)	56%	28% (of those aware)	12% (of those aware)	50%	11% concerned about future fertility	≥ 60%	16%	—	45%
	Tamire & Enqueselassi (2007) Ethiopia	Cross-sectional/ written questionnaire	Female university students, mean age 21 years, (*N*=774)	44%	82% (of those aware)	26% (of those aware)	53%	—	18%	—	38%	—
ASIA	**Agrawai, et al. (2007) India**	Cross-sectional/ written questionnaire	< 20% (least known of all forms)	—	—	—	—	38%		—	18%	—

Table 1. (*continued*)

	Author year country	Design/ data source	Sample	Awareness of EC	Correct identification of ECP	Correct identification of time parameters	Attitudes towards ECP		Source of information			
							Pos	Neg	Family/ Friends/ Partner	Health care	Media	Other
ASIA	**Babaee, et al. (2003) Iran**	Cross-sectional, face-to-face interviews/ standardized questionnaire	Married females aged 21-25 years old (*N*=250)		—	8% "specific knowledge"		75% (after being informed)	—	7%	—	—
	Kang & Moneyham, (2008) South Korea	Cross-sectional/ written questionnaire	Students from 16 universities (75% female) ages 17-30 years, (*N*=1046)	75%	20% Females more knowledgeable	55%	Males had more positive attitudes than females	Overall negative attitudes due to concerns about S.E	—	—	—	—
	Puri, et al. (2007) India	Cross-sectional/ written questionnaire	F university students, mean age 18 years, (*N*=1017)	7%	73% (of those aware)	15% (of those aware)	33% approve in cases of rape	13 % concerned for future fertility	—	—	—	—
	Wan & Lo, (2005) Hong Kong	Cross-sectional/ written questionnaire	Women attending clinics 25% 15-24 years old (*N*=1725)	73% (15-24 year olds)	30% (of those aware)	92% (of aware 15-24 year olds)	—	75% not in favor of OTC availability	—	—	—	—

Table 1. (*continued*)

	Author year country	Design/ data source	Sample	Awareness of EC	Correct identification of ECP	Correct identification of time parameters	Attitudes towards ECP		Source of information			
							Pos	Neg	Family/ Friends/ Partner	Health care	Media	Other
ASIA	**Xu & Cheng (2008) China/ Shangai**	Cross-sectional/ face-to-face interviews	Pregnant teens, aged 10-19 years, requesting abortions at public clinic (*N*=591)	48%	—	36%	90%	10%	63%	2%	34%	1%
Australia	**Calabretto (2009) South Australia**	Cross-sectional/ written questionnaire	First year university students, 65% F, (N=627)	—	10%	20%	90%	—	—	—	—	—
EUROPE	**Bozkurt et al. (2006) Turkey**	Cross-sectional/ written questionnaire	University freshmen, (60% female) mean age 18.4 years, (N=385)	50% males -61% females- 42% (p=0.001)	50% (of those aware)	30% (of those aware)	60%	40%	25%	18%	25%	—
	Celik, et al. (2007) Turkey	Cross-sectional/ written questionnaire	University F nursing students) (N=210)	60%	54%	12%	85%	75% Concerned about abuse	10%	≥35 %	≥12%	50% school

Table 1. (*continued*)

	Author year country	Design/ data source	Sample	Awareness of EC	Correct identification of ECP	Correct identification of time parameters	Attitudes towards ECP		Source of information			
							Pos	Neg	Family/ Friends/ Partner	Health care	Media	Other
	Falah-Hassani, et al. (2007) Finland	National population based survey, written questionnaire data collected in 1999, 2001, & 2003	Females aged 12-18 years, '99 *N*=4,369 '01 *N*=4,024 '03 *N*=3,728	68%, — 12 year olds, 98%— remainder of sample, stable over three surveys years	—	—	—	—	—	—	—	—
EUROPE	**Kozinsk& Bartai, (2004) Hungary**	Four group design: teens seeking TAB/ control teen group, adult women seeking TAB/ control adult women group	Females attending OB/GYN clinic, age 15-48 years old (*N*=1200)	teens abortion seekers-55%, teen control group-63%,	—	—	—	—	≥ 35%, teen abortion seekers ≥ 60% teen controls	18%, teen abortion seekers 40% teen controls	≥ 35%, teen abortion seekers ≥ 60% teen controls	20%, teen abortion seekers 50% teen controls
	Larrson, et al. (2004) Sweden	Quasi-experimental pre/post-test, two group design, written questionnaire (mailed)	Females aged 16-30 years old, pre (*N*=564) post (*N*=467)	Post-test, 99.6 % intervention group (IG), 97% control group (CG)	—	—	76% IG 72% CG	20% IG 20% CG	—	—	≥ 44% IG ≥ 20% CG	—

Table 1. (continued)

	Author year country	Design/ data source	Sample	Awareness of EC	Correct identification of ECP	Correct identification of time parameters	Attitudes towards ECP		Source of information			
							Pos	Neg	Family/ Friends/ Partner	Health care	Media	Other
EUROPE	**Moreau, et al. (2005) France**	Cross-sectional/ written questionnaire	Females attending abortion clinics, mean age 26 (*N*=1365)	90% (women ≤ age 25years more aware)	—	24% (of those aware)	—	40%	—	55%		
	Olszewski, et al. (2005) Poland	Cross-sectional/ written questionnaire	Female students, mean age 21 years, (*N*=1,154)	87%	—	80% (of those who had used ECP) 65% (non-users)	—	70% viewed ECP as abortion	—	—	—	—
	Sahin, (2008) Turkey	Cross-sectional/ interviews & written questionnaire	Male university students, aged 17-28 years, 75% sexually active (*N*=278)	15% (higher in students studying health sciences)	—	—	—	—	≥ 70%	20%	75%	—
	Selak et al. (2004) Mostar, Bosnia, & Herzgovia	Cross-sectional/ written questionnaire	High school students (stratified random selection), aged 15-17 years, 50% F (*N*=120)	< 10%	—	0 %	—	—	≥40%	< 20%	>80%	40%

Table 1. (*continued*)

	Author year country	Design/ data source	Sample	Awareness of EC	Correct identification of ECP	Correct identification of time parameters	Attitudes towards ECP		Source of information			
							Pos	Neg	Family/ Friends/ Partner	Health care	Media	Other
EUROPE	**Westwood & Mullan (2006) UK (England)**	Cross-sectional/ written questionnaire	High school students, grades 8-10, 50% M (stratified) (*N*=1959)	Lowest scores on questions regarding ECP	—	—	—	—	—	—	—	—
NORTH AMERICA	**Aiken, et al. (2005) U.S. (PA.)**	Follow-up of a 1996 study; structured interviews after viewing an educational video	Females, aged 13-20 years, 1996 (*N*=133) 2002 (*N*=139)	44% (1996) 73% (2002)	—	20% (1996) 52% (2002)	72% (1996) 96% (2002)	—	—	—	—	—
	Baldwin et al. (2008) U.S. (CA.)	Secondary analysis of data from *CA. Health Survey*	Randomized telephone survey of households in CA. aged 14-44 years old, (*N*=11,392)	68% aged 15-17 years 80% aged 18-24 years	—	—	—	—	—	—	—	—
	Corbett, et al. (2006) U.S. (N.C.)	Cross-sectional/ written questionnaire	University students, 75% female, aged 18-21 (*N*=97)	75% No differences by gender	88% could not differentiate ECP from RU486	—	68%	34%	34%	12%	25%	20%

Table 1. (*continued*)

	Author year country	Design/ data source	Sample	Awareness of EC	Correct identification of ECP	Correct identification of time parameters	Attitudes towards ECP		Source of information			
							Pos	Neg	Family/ Friends/ Partner	Health care	Media	Other
NORTH AMERICA	**Foster, et al. (2004) U.S. (CA.)**	Annual population-based telephone survey, based on three years of data '99-'01	4,000 per year randomly selected CA women aged 18-44 years old, 1999-2001 (*N*=6198)	52% (average of entire sample, 1999-2001)	38% (average of entire sample 1999-2001) 48% (average of 18-24 years old group 1999-2001)	—	—	—	—	—	—	—
	Foster, et al. (2007) U.S. (CA.)	Annual population-based telephone survey, based on six years of data '99-'04	As above 1999-2004 (*N*=11,998)	65% of entire sample (2004)	68% of aged 18-24 years old group (2004), 50% increase since 1999	—	—	—	—	—	—	—
	Goldsmith, et al. (2008) U.S. (OR.)	Secondary analysis of population based study. Original survey was by mail & telephone	Postpartum females in OR. in 2001, (*N*=1,795)	75%, Unintended pregnancy associated with lack of awareness of ECP (highest among women < 20 years of age)	—	—	—	—	—	—	—	—

Table 1. (*continued*)

	Author year country	Design/ data source	Sample	Awareness of EC	Correct identification of ECP	Correct identification of time parameters	Attitudes towards ECP		Source of information			
							Pos	Neg	Family / Friends/ Partner	Health care	Media	Other
NORTH AMERICA	**Mollen, et al. (2008) U.S. (PA.)**	Qualitative, in-depth semi-structured interviews	Urban African-American females, 15-19 years old (*N*=30)	50% of nonsexually active (NSA), 94% of sexually active (SA)	20% (NSA) 60% (SA)	—	Majority (SA group had more favorable attitudes)	—	—	—	—	—
	Salganicoff, et al. (2004) U.S. (CA.)	Cross-sectional telephone survey	Stratified sample of CA. residents aged 15-44 years old, male & female, (*N*=1,151)	65% (total) 77% (age 18-24 years old) 55% (age 15-17 years old)	—	—	≥ 60%	18%	14%	7%	46%	13%
	Sawyer & Thompson, (2003) U.S.	Cross-sectional written questionnaire	Undergraduate co-ed college students, 50% -F, (*N*=693)	86%	15%	40%	48%	—	—	—	—	—

Table 1. (*continued*)

	Author year country	Design/ data source	Sample	Awareness of EC	Correct identification of ECP	Correct identification of time parameters	Attitudes towards ECP		Source of information			
							Pos	Neg	Family/ Friends/ Partner	Health care	Media	Other
NORTH AMERICA	**Shoveller, et al. (2007) Canada**	Qualitative, one-on-one interviews	Ethnically diverse women living in Vancouver, aged 15-29 years old (*N*=52)	60%	"Many" believed ECP to be an abortifacient	"Knowledge gaps impeded clear understanding of when it is most effective"	—	—	—	—	—	—
	Sorhaindo, et al. (2004) Jamaica	Qualitative, eight focus groups (3 M, 5 F).	Coed university students, F 56 % mean age 21 years old, (*N*=71)	"Most"	—	"several" expressed confusion about the time frame."	The vast majority	—	—	—	—	—
	Spence, et al. (2003) U.S. (MT.)	Cross-sectional written questionnaire	Pregnant Women 40% of pregnancies unintended, median age 23, (*N*=583)	64 of those < 23 years of age	—	—	—	—	—	—	—	—

Table 1. (*continued*)

	Author year country	Design/ data source	Sample	Awareness of EC	Correct identification of ECP	Correct identification of time parameters	Attitudes towards ECP		Source of information			
							Pos	Neg	Family/ Friends/ Partner	Health care	Media	Other
NORTH AMERICA	**Vahratian, et al. (2008) U.S. (MI.)**	Cross-sectional Web based survey	University students, 66% F, mean age 22 years old (*N*=1585)	94%	—	50%	88% F 82% M	18% F, 25% M	22%	14%	43%	18%
	Walker, et al. (2004) Mexico	Cluster-RCT Cross-sectional questionnaire	H.S. students, 52% F, mean age 15 y.o. (*N*=10,918)	F 62% M 61%	F 36% M 39%	F 36% M 39%	F 46% M 55%		—	—	—	—

Table 1. (continued)

	Author year country	Design/ data source	Sample	Awareness of EC	Correct identification of ECP	Correct identification of time parameters	Attitudes towards ECP		Source of information			
							Pos	Neg	Family/ Friends/ Partner	Health care	Media	Other
CENTRAL & SOUTH AMERICA	**Diaz, et al. (2003) Brazil, Chile, &Mexico**	Qualitative, discussion groups	Potential users of ECP including low or lower-middle class adolescents and adolescent mothers	Most unaware in all three countries	Some mentioned folk methods"	—	"High"	—	—	—	—	—
	Garcia, et al. (2006) Honduras	Pre/post intervention (educational media campaign). Cross-sectional/ face-to-face interviews/ standardized questionnaire	Clients of family planning clinics, 28% 15-24 years old, 80% F Pre – N=1,406 Post – N=1287	Baseline: 5% (15-19 year olds), 9% (20-24 year olds). Follow-up: 30% (15-19 year olds), 28% (20-24 year olds).	—	80% baseline, 70% follow-up	—	15% baseline, 27% follow-up	"small minority"	15% baseline, 30% follow-up	—	—

Table 2. Meanings of ECP Use

Range of Beliefs *Contributing to Meaning of ECP Use*		
Making Moral Decisions *about ECP Use*		
Morally wrong	Conditional acceptance	Unconditional acceptance
Judging the Level of Personal Responsibility *about ECP Use*		
Irresponsibility	Contextual	Responsibility • Preventive • Mistakes happen
Judging Safety *of ECP*		
Toxic	Uncertainty	Unconditionally safe
Judging Efficacy *of ECP*		
Ineffective	Variable	Unconditionally effective

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