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The social context of pregnancy intention

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THE SOCIAL CONTEXT OF PREGNANCY INTENTION

by

Melissa Ann Lehan Mackin

An Abstract

Of a thesis submitted in partial fulfillment
of the requirements for the Doctor of
Philosophy degree in Nursing
in the Graduate College of
The University of Iowa

July 2011

Thesis Supervisors: Professor M. Kathleen Clark
Associate Professor Lioness Ayres

ABSTRACT

Pregnancy intention is extensively examined in the literature and the concept of "unintended" pregnancy is considered a significant health problem. Large efforts have been made to reduce negative health consequences presumably associated with pregnancies that are unexpected, unwanted, or mistimed but have had limited impact. A study was conducted to examine contextual issues surrounding women's experiences with pregnancy intention its intersection with knowledge, perceptions, and use of emergency contraception in a population of female university students. The project was a mixed method study including a survey examining demographic characteristics, sexual history, and knowledge and use characteristics in addition to interviews exploring prospective perceptions of pregnancy intention. An integrative review informed the background of the study demonstrating the need for expansion of current concepts of pregnancy intention that inform measurement and subsequent interventions. Quantitative survey results provide new information including higher rates of use in comparison to previous studies but persistence of misinformation. Qualitative interview findings illustrate a process by which individual agency in terms of sexual and pregnancy decision making is influenced by a precursor of the embodiment of convictions and empowerment. Combined conclusions confirm the need of exploring the role of the social context on pregnancy intention, suggest ways in which nurses can empower women to be their own agents of health, and start discussions of how intervention approaches to pregnancy intention can be improved.

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Graduate College
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CERTIFICATE OF APPROVAL

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PH.D. THESIS

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ABSTRACT

Pregnancy intention is extensively examined in the literature and the concept of "unintended" pregnancy is considered a significant health problem. Large efforts have been made to reduce negative health consequences presumably associated with pregnancies that are unexpected, unwanted, or mistimed but have had limited impact. A study was conducted to examine contextual issues surrounding women's experiences with pregnancy intention its intersection with knowledge, perceptions, and use of emergency contraception in a population of female university students. The project was a mixed method study including a survey examining demographic characteristics, sexual history, and knowledge and use characteristics in addition to interviews exploring prospective perceptions of pregnancy intention. An integrative review informed the background of the study demonstrating the need for expansion of current concepts of pregnancy intention that inform measurement and subsequent interventions. Quantitative survey results provide new information including higher rates of use in comparison to previous studies but persistence of misinformation. Qualitative interview findings illustrate a process by which individual agency in terms of sexual and pregnancy decision making is influenced by a precursor of the embodiment of convictions and empowerment. Combined conclusions confirm the need of exploring the role of the social context on pregnancy intention, suggest ways in which nurses can empower women to be their own agents of health, and start discussions of how intervention approaches to pregnancy intention can be improved.

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INTRODUCTION

Overview

Statement of the Problem

Unintended pregnancy has been extensively examined in the literature and continues to be considered a substantial public health issue. Preventing unintended pregnancy has been and continues as a Healthy People 2020 goal and the object of government initiatives to reduce associated problems (See for examples Brown & Eisenberg, 1995 (Institute of Medicine Report) and; Centers for Disease Control and Prevention (CDC), 2010). The persistence and scope of problems associated with unintended, unplanned, or unwanted pregnancies suggests that the meaning and experiences of women's pregnancy intention requires additional exploration.

This study seeks to add to the existing literature by describing contextual issues that women consider when facing a threat of unintended pregnancy in addition to helping describe the current context of emergency contraception. Specifically, this study examines the perspective of unintended pregnancy in women attending college at a large, Midwestern university. It was assumed that women attending college would intend to prevent pregnancy as an effort to protect their holistic investment in their education and future career path. Contextual influences that are considered when a woman looks prospectively at an unintended pregnancy are presumably unlike a retrospective view once the pregnancy has already occurred. The issue may also look quite different when it is framed by contemporary contextual issues, such as that provided by availability of emergency contraception, that may prevent or empower a woman to affect circumstances that might lead up to an unintended pregnancy.

Unintended pregnancies in the United States affect almost 3 million women each year (Finer & Henshaw, 2006; U.S. Department of Health & Human Services, 2008), the highest rate for developed nations (J. Trussell & Wynn, 2008). Experiencing a pregnancy that was unintended is not benign; rather there can be serious consequences for both mother and child.

Women who choose to continue an unintended pregnancy often receive inadequate prenatal care (Brown & Eisenberg, 1995; Gipson, Koenig, & Hindin, 2008; Ketterlinus, Henderson, & Lamb, 1990; Mosher & Bachrach, 1996; J. Trussell, 1988) and infants may be of low birth weight, born pre-term, or small for gestational age (Martin et al., 2007; Mohllajee, Curtis, Morrow, & Marchbanks, 2007; Shah et al., 2011). Women are also at risk for poor pregnancy outcomes that include mortality (Danel, Berg, Johnson, & Atrash, 2003a; Mohllajee et al., 2007). Both the mother and infant may suffer long term disadvantage, health, and social consequences (Joyce, Kaestner, & Korenman, 2000; Smith, Hart, Blane, & Hole, 1998). For example, poor infant health can have lasting effects into adulthood and risk of lower educational attainment increases risk of living in poverty (Honein et al., 2009; Khatiwada, McLaughlin, Sum, Palma, & Council for Advancement of Adult Literacy, 2007; Potharst et al., 2011).

Women age 18-24 experience the highest rate of unintended pregnancy, twice the rate for all groups of women (Finer & Henshaw, 2006). Women in this age group who attend college experience unintended pregnancy at a lower rate (Finer & Henshaw, 2006). This suggests that attending college provides some protective factor or influences over pregnancy intention. While female college students can be placed in a position of privilege due to their ability to access resources that allow them to pursue a college education, they nonetheless experience risks that contribute to an unintended pregnancy. These risks include sexual initiation, decreased sexual inhibitions with alcohol intake and more unprotected sex, and risk of unwanted intercourse (Abma, Driscoll, & Moore, 1998; Abma, Martinez, & Copen, 2010; Chandra, Martinez, Mosher, Abma, & Jones, 2005; Fisher, Cullen, & Turner, 2000; Hingson, Heeren, Winter, & Wechsler, 2003).

Social context, including individual demographics, relationships, economic circumstances, the sociopolitical environment, community affiliations, and cultural norms assemble into a larger force that influences behavior affecting health outcomes including reproductive health behavior. For example, studies have found that cost of contraception, social consequences for early pregnancy, economic opportunities, and educational attainment are

implicated within sexual decision-making and fertility (Kendall et al., 2005). Culture and religion impact the acceptability of a pregnancy particularly if it was not intended (Srikanthan & Reid, 2008). Pregnancy outcomes such as childbearing or seeking abortion may be influenced by sense of control and personal values (Fielding & Schaff, 2004; W. B. Miller, 1986; Stevens-Simon, 2001). Revealing how elements of the social context are embodied by individuals demonstrates how specific health behavior is encouraged or discouraged. Social rules and expectations certainly apply to sexual behavior and create boundaries and limits on pregnancy intention.

Pregnancy intention as a large part of reproductive health has contextual influences. One option, emergency contraception is the only way to prevent a pregnancy after unprotected, unintended, or unwanted sex has occurred. Research has connected EC use with knowledge, availability and personal perceptions of risk and has been studied both nationally and abroad. In Nigeria, college students were aware of emergency contraception but there was a considerable lack of accurate information that influenced low use (Aziken, Okonta, & Ande, 2003). Two studies in England suggested women did not use EC because they did not perceive themselves vulnerable to pregnancy or they associated use with disapproving perceptions (Bell & Millward, 1999; Free, Ogden, & Lee, 2002).

Although emergency contraception has been around for years, only recently have efforts been made to make it visible as one means of preventing unintended pregnancy in the U.S. California women, in a 2004 study, had mostly heard EC but less than 50% knew it could be used after intercourse to prevent pregnancy (The Henry J Kaiser Family Foundation[KFF], 2004). Corbett and colleagues (2006) studied male and female college students in a 2006 study finding that 75% knew there was something that could be done post-intercourse to prevent pregnancy but only 13.7% said they or their partner had used EC previously. To date, only two studies have been conducted after emergency contraception was made available over-the-counter in the U.S. Hickey (2009) examined knowledge, perceptions, and use of EC in 609 college females on the east coast reporting that 28% admitted prior use but many women equated EC

with abortion. Miller (2011) supported prior findings that information about EC is both lacking and inaccurate.

It is important for researchers and creators of public health to understand that pregnancy intention has many influences. Prior research has suggested that like many health behaviors, one of these critical influences is the social context and has been demonstrated to mitigate health behavior including that of reproductive health actions and pregnancy intention (Fielding & Schaff, 2004; Santelli et al., 2003; Santelli et al., 2003). As described previously, influence of individual characteristics, personal relationships, and social, economic, and cultural factors on reproductive health decision-making and behavior. The lack of consideration of emergency contraception as one method of preventing pregnancy may be related to lack of knowledge, negative associations with abortion, or access issues but the existing research is inconclusive. While foreign studies have provided valuable information, the social context in Nigeria and England is likely different from the U.S. With the exception of two studies, research in the U.S. on knowledge, access, and use of emergency contraception was conducted prior to EC's availability over the counter. Increased availability and potential increase in information dissemination have likely influenced knowledge, perceptions, and use of EC creating changes to the social context. While Hickey (2009) and Miller's (2011) research create a valuable foundation of knowledge the current study is different in many ways. In contrast to the sole survey methods of existing studies, the current study employs a mixed method approach. The setting and sample are also in contrast to the east coast universities as this study is conducted in the Midwest and with a large number of women. Furthermore, there are no current studies conducted after over-the-counter availability of emergency contraception that connect it to the larger influences of the reproductive health context which is critical to a more complete understanding and enhancing the goal of making all pregnancies wanted at the time of conception.

Due to the potential of emergency contraception to impact pregnancy intention, these concepts are inextricably linked. One way to examine the contextual social processes

surrounding a particular issue is to intentionally situate the event in a specific contextual background (Clarke, 2003). Examining college women's perceptions and experiences with unintended pregnancy framed within knowledge, access, and use of emergency contraception can demonstrate important and unique considerations in regards to pregnancy intention.

Summary of Chapters

This chapter will review the study purpose and aims, significance to research, the conceptual model, and present key literature related to unintended pregnancy and the social and contextual background as well as framing the inquiry within emergency contraception knowledge, perceptions, and use. The chapter will conclude by describing the design and procedure of the resulting exploratory, sequential mixed methods study. Chapter two contains the first drafted manuscript titled, "An Integrative Review of Unintended Pregnancy", proposing alternate definitions of unintended pregnancy taken from the existing body of research. Chapter three will contain the foundational knowledge gained surveying college women about their risk of unintended pregnancy and knowledge and use of emergency contraception, titled "Emergency Contraception and Unintended Pregnancy in College Women". Chapter four will present the manuscript, "Conviction, Agency, and Empowerment in mitigating unintended pregnancy". In conclusion, chapter 5 will present a summation of the previous chapters, presenting important topics for discussions and directions for future research.

Purpose and Aims

Prospective examinations of social, contextual issues surrounding unintended pregnancy are uncommon. To date, no studies have examined college student's perceptions of the social context framed by the additional context of emergency contraception. The purpose of this study is to examine influences of the social context on unintended pregnancy framed within women's knowledge, perceptions, and use of emergency contraception. Guided by the Ecosocial framework as proposed by Krieger (2001b), this study will explore contextual relationships

experienced by college women yielding quantitative survey data which will subsequently inform a qualitative open-ended interview evaluation. The specific aims of this study are to:

1. Describe the demographic characteristics, sexual histories, and emergency contraception knowledge of college women in the desired sample.
2. Explore the role of social context with varying experiences of women regarding unintended pregnancy.
3. Integrate quantitative and qualitative data to identify critical concepts related to pregnancy intention.

Social context influences women when they are confronted with the threat of an unintended pregnancy and access to means of pregnancy prevention is often closely associated with use of the health care system. Social context has been examined in the women's health domain in the areas of health care access, birth control, and abortion. This study is unique in several aspects. Contextual exploration of knowledge and use since its access expanded to OTC availability is rare. Furthermore, no studies have attempted to link contextual issues surrounding emergency contraception to examinations of pregnancy intention. All of these perspectives are important for if the potential for increased knowledge, access, and use of emergency contraception on unintended pregnancy is to be realized, it is important to know what elements of the social context influence these factors. The current inquiry would allow for a description of women's experience as they achieve their educational goals while navigating societal forces, embodying some and abandoning others to determine their pregnancy intention.

The findings of this study will contribute to the research base describing more universal concerns in the interplay of health behavior mitigated by community, government, and individual responses. This research would further extend the theoretical, conceptual, and operational understanding of social context and health care access. Awareness of the influence of the social context at various personal and structural levels can be used to better inform public education initiatives and interventions aimed at reducing unintended pregnancy or eliminating disparities in health care.

Conceptual Framework

The operationalization of social context as defined in this proposal is guided by an Ecosocial framework (Krieger, 1994; Krieger & Gruskin, 2001; Krieger, 2001a; Krieger, 2001b; Krieger, 2005). This model combines concepts within ecology and sociology to produce a framework that allows for critical analyses of social determinants of health at each level of organization from the cellular level to the greater ecosystem. Social determinants of health can be underlying economic, social, cultural, civil, and political determinations of health (Bronfenbrenner, 1979; Krieger & Gruskin, 2001). The model provides a structure in which questions regarding "who and what is responsible for population patterns of health, disease, and wellbeing, as manifested in present, past, and changing social inequalities in health?" (p.688).

Key concepts of the Ecosocial model include e*mbodiment, pathways of embodiment, cumulative interplay between exposure, susceptibility and resistance,* and *accountability and agency*. *Embodiment* is how we biologically incorporate the material and social world in which we live from birth until death (Krieger, 1994; Krieger & Gruskin, 2001; Krieger, 2001b; Krieger, 2005). Examining embodiment can reveal, for example, how the air we breathe, food we eat, work we do, education we receive, rules we must follow, and interactions with other people, over the course of our lives, affect our health. *Pathways of embodiment* are how the structure and societal arrangements of power influence how we biologically incorporate the world (Krieger, 1994; Krieger & Gruskin, 2001; Krieger, 2001b). This component provides perspective on, for example, how where we live, income we earn, our gender, personal history, and our race and ethnicity influence the air we breathe, food we eat, rules we must follow, interactions, etc. Pathways of embodiment become realized in the cumulative interplay *between exposure, susceptibility and resistance* at multiple levels and domains and in relation to ecological surroundings that can be played out at many spatiotemporal levels (Krieger & Gruskin, 2001). Lastly, *accountability and agency* refers to where power is imbalanced and unjust and highlights areas of potential responsibility for inequities within the system (Krieger, 1994; Krieger & Gruskin, 2001; Krieger, 2001b).

The Approach Guided by Ecosocial Theory

The structure of the Ecosocial model allowed for the examination of pregnancy intention within the context of issues surrounding emergency contraception. The model's framework allowed for systematic examination of the societal structures that influenced women's perceptions such as primary relationships, religious affiliations, cultural considerations, and economic conditions. The key concepts of the model could be applied to look at what was embodied by women to influence their thoughts and behavior regarding preventing or considering a pregnancy and the ways in which influencing beliefs were internalized. Like the model represents, forces do not act hierarchically or discretely but rather as a complex web of influences. Women's individual agency and empowerment are seen as a part of *cumulative interplay between exposure, susceptibility and resistance.* This is different from Krieger's concept of agency within *accountability and agency* that represented systemic responsibility for inequity in regards to resources and rules that affected pregnancy intention.

Literature Review

Pregnancy intention is a health concept that is often discussed, researched, and targeted by interventions and considered to be a significant public health problem. Unintended pregnancies are said to affect almost 3 million women each year in the United States, half of all births (Finer & Henshaw, 2006; J. Trussell, 2007; J. Trussell et al., 2009; U.S. Department of Health & Human Services, 2008) which is noted to be the highest rate, exceeding France, England, and the Netherlands (Singh, Sedgh, & Hussain, 2010; J. Trussell & Wynn, 2008). A recent report asserts that unintended pregnancies strain public funding resources by costing taxpayers $11.1 billion each year (Sonfield, Kost, Benson Gold, & Finer, 2011). Additional money and resources are directed at interventions such as Center for Disease Control and Prevention (CDC) initiatives and Healthy People 2020 and prior goals to reduce the number of unintended pregnancies (Centers for Disease Control and Prevention (CDC), 2010; U.S. Department of Health and Human Services, 2010).

Women who choose to continue a pregnancy considered unintended often receive inadequate prenatal care and incur poor maternal-child outcomes (Brown & Eisenberg, 1995; Gipson et al., 2008; Hulsey, Laken, Miller, & Ager, 2000; Ketterlinus et al., 1990; Mosher & Bachrach, 1996; J. Trussell, 1988). Infants born of unwanted or unplanned pregnancies have been documented to be of low birth weight, born pre-term, or small for gestational age (Martin et al., 2007; Mohllajee et al., 2007; Shah et al., 2011). These conditions are associated with, physical and cognitive disability, and serious conditions of the brain, heart, lungs, and digestive system and sometimes infant mortality (Honein et al., 2009; Potharst et al., 2011).

Women are also at risk for poor pregnancy outcomes. It is possible that perinatal maternal morbidities such as infection, bleeding, premature rupture of membranes and maternal mortality can be linked to unintended pregnancy (Danel, Berg, Johnson, & Atrash, 2003b; Mohllajee et al., 2007). For both the mother and infant an unintended pregnancy can precipitate long term disadvantage. Problems such as low birth weight, childhood infections, and impaired development carry health and social consequences into adulthood (Joyce et al., 2000). Women with unintended pregnancies experience lower educational attainment which in turn, severely limits earning potential and the ability to be independent and self-supporting (Khatiwada et al., 2007).

Women age 18-30 experience the highest rate of unintended pregnancy, twice the rate for all groups of women (Finer & Henshaw, 2006; Salganicoff, 2004; The Henry J Kaiser Family Foundation [KFF], 2005). Women in this age group who attend college experience unintended pregnancy at a lower rate (Finer & Henshaw, 2006). Although college enrollment has been relatively unexplored as a reason for pregnancy prevention, the literature is strong in noting women who have lower educational attainment, lower income, and ethnic minority status suffer disproportionate risk of unintended pregnancy (Finer & Henshaw, 2006). This suggests that attending college provides some protective factor or influence over pregnancy intention. While female college students can be placed in a position of privilege due to their ability to access resources that allow them to pursue a college education, they still experience risks that may

contribute to an unintended pregnancy (Corbett et al., 2006). Over 65% of women have had first sexual intercourse by age 19 (Abma et al., 2010) and by the age of 23, 95% of women have had first sexual intercourse (Chandra et al., 2005). For many women this experience occurs prior to- or concurrent with-their college education. Furthermore, the risk of unprotected sex in a college atmosphere is doubled due to increased alcohol intake (Hingson et al., 2003) and a 20-25% risk of unwanted intercourse (Abma et al., 1998; Fisher et al., 2000).

It is important for researchers and creators of public health interventions to understand that pregnancy intention has many influences. Like many health behaviors, one of these critical influences is the social context. Social context defined as the complex interaction of personal characteristics and structural forces, has been demonstrated to mitigate health behavior including that of reproductive health actions such as pregnancy intention (Fielding & Schaff, 2004; Santelli et al., 2003; Santelli et al., 2003). One way to examine the contextual social processes surrounding a particular issue is to intentionally situate the event in a specific contextual background (Clarke, 2003). In examining college women's perception and experience with unintended pregnancy, the current inquiry was framed within knowledge, perception, and use of emergency contraception.

The Social Context

For the purpose of this study, social context is defined as the dynamic and complex interaction of an individual's demographic profile (Adimora & Schoenbach, 2005; Hogan & Ferre, 2001; Sorensen et al., 2003) array of interpersonal relationships (Dedobbeleer, Beland, Contandriopoulos, & Adrian, 2004; Fielding & Schaff, 2004), economic circumstances, overarching sociopolitical environment, community affiliations, and cultural norms (Adimora & Schoenbach, 2005; Fielding & Schaff, 2004; Hogan & Ferre, 2001).These elements assemble into a larger force that influences an individual's daily reality including behavior that may affect health outcomes (Adimora & Schoenbach, 2005; Fielding & Schaff, 2004; Hogan & Ferre, 2001; Sorensen et al., 2003). The social context contributes to the "social structure, which is

continually created and recreated through collective action of people, “enabling some actions and constraining others” (Fielding & Schaff, 2004). The cumulative interactions of the social context are expressed as norms, patterns of resource utilization, and access to health materials and resources (Dedobbeleer et al., 2004; Sorensen et al., 2003).

The social context has been examined in connection with reproductive health and how various elements play a role in influencing decision making, perceptions, and behavior. Kendall et al. (2005) examined demographics, sexual norms, sexual decision-making, and thoughts of marriage in relation to contraceptive availability, cost, community standards, gender, power and roles in a population of 77 women in New Orleans, LA. Cost of contraception, social consequences for early pregnancy, economic opportunities, and educational attainment are implicated within sexual decision-making and fertility. Often struggles to stay in school, find a job, and prevent pregnancy are needs that could not be met simultaneously in the researched population. Contradictory demands resulted in economic, physical, and psychological burdens for women making reproductive decisions.

Srikanthanthan and Reid (2008) conducted a literature review examining religious and cultural influences on the use of contraception that included discussions about abortion and use of EC. Religious beliefs partially determined the approach to and acceptability of means of preventing pregnancy. Religion and culture often played a gatekeeping role in what was available for contraception and agency in reproductive decision making.

Fielding and Schaff (2004) examined the role of social context on medical abortion and unwanted pregnancies in 50 women in Rochester, New York. They found that contextual factors were weighed within an individual’s moral reasoning and a decision made to concur with or override social expectations. For the women in this study, norms of morality led them to believe that “breaking the rules” led to some negative consequence. This perception had influence in terms of the emotional stress women feel when they make a decision against social expectations however this is set against the relief that they have maintained some control over their lives.

Miller (1986) and Stevens-Simon, Beach, & Klerman (2001) also discuss the impact of social context on family planning. Miller specifically focuses on how contraceptive side effects are prioritized within personal values and beliefs in a population of 1000 women in San Francisco. Stevens-Simon et al. is a discussion piece considering how adolescents are queried by researchers and providers regarding their overall childbearing desires. Both articles conclude that motivation and supportive environments are crucial factors in the effort and desire to remain non-pregnant.

Previous studies have supported the influence of individual characteristics, personal relationships, and social, economic, and cultural factors on reproductive health decision-making and behavior. These forces have created norms that, in turn, create perceptions and both facilitate and limit access to resources that influence pregnancy intention. The culmination of findings suggests that somehow these forces are embodied, integrated with internal beliefs, and observed in perceptions or behavior, reinforcing the role of the social context in health and more specifically, reproductive health.

The Context of Emergency Contraception

Emergency contraception (EC) is the only way to prevent a pregnancy after unprotected, unintended, or unwanted sex has occurred. While EC can be in the form of an intrauterine device or oral medication, the oral medication was the focus of this study. EC's utility is under-realized in the prevention of unintended pregnancy. It has been suggested that lack of consideration of EC as one method of preventing pregnancy may be due to lack of knowledge, negative associations with abortion, embarrassment, guilt, or access issues (Bell & Millward, 1999; Corbett et al., 2006; Cunnane, Dickson, & Cook, 2006; Free et al., 2002; Hickey, 2009).

EC in its oral form, also known as Plan B is widely available in the U.S. It consists of high dose progestin that is most effective if administered within the first 72 hours after intercourse. Its mechanism of action is to delay or inhibit ovulation and will not disrupt an existing pregnancy (The Henry J Kaiser Family Foundation [KFF], 2005; Wertheimer, 2000).

EC's oral form of Plan B was approved for over-the-counter use by United States Federal Food and Drug Administration (FDA) in August 2006 for women over the age of 18 (Federal Food and Drug Administration, 2009) and approximately one year later for women over the age of 17 (Federal Food and Drug Administration, 2010).

Research has suggested that Plan B can reduce the chance of pregnancy by 75-89% (Cunnane et al., 2006; Grimes & Raymond, 2002; L. M. Miller & Sawyer, 2006; Strayer & Couchenour, 1998; Vahratian, Patel, Wolff, & Xu, 2008; Whittaker, Armstrong, & Adams, 2008). It is possible that its use could avert 1.5-1.7 million unintended pregnancies and 700,000-800,000 abortions (Boonstra, 2002; Weismiller, 2004). Both the World Health Organization (WHO) and the American College of Obstetricians and Gynecologists (ACOG) have made statements in support EC's safety and effectiveness (American College of Obstetricians and Gynecologists, 2010; Weismiller, 2004). Although EC has been around for years, the recent effort to make it available over-the-counter has made it visible as one means of preventing unintended pregnancy.

Research has connected EC use with knowledge, availability and personal perceptions of risk. In a study conducted with 510 students in Nigeria (Aziken et al., 2003), most or 58% identified that something could be done once intercourse had occurred to prevent pregnancy. Few, 18% knew the correct window of time in which EC was most effective. The authors concluded that misinformation could have attributed to non-availability of EC information. Two other qualitative studies were conducted in England. Free and colleagues (2002) engaged 30 women in the inner city age 18-25 and found that young women did not use EC because they did not perceive themselves vulnerable to pregnancy or they associated use with disapproving perceptions. Bell and Millward (1999) interviewed 8 women seeking care at a general practice clinic. For the most part they concluded that although women had an awareness of emergency contraception it had negative associations. For this reason, women did not feel they could obtain information from their providers. Consistent within both studies in England, women expressed feelings of embarrassment, fear, and stigma that prevented them from seeking EC. In sum,

research abroad suggests that negative associations, lack of knowledge or misinformation, and lack of perceived risk prevented women from using EC.

A few similar studies have been conducted in the U.S. In California the (The Henry J Kaiser Family Foundation (KFF) surveyed 1151 men and women age 15-44 (2004). They found that when limiting the inquiry to women only, 65% were aware of some post-coital method of pregnancy prevention and three-quarters had heard of EC in the past although only 39% knew it was available in the U.S. Like the Aizen et al. study, more than half of women thought EC was the same as RU-486. At the time of this study, California did offer EC directly from pharmacists without a prescription, however only 18% of all participants that had some knowledge of EC, knew that this option was available. Corbett and colleagues (2006) surveyed male and female college students about knowledge and perceptions of emergency contraception in which 73 were women. The study took place in a southern city. Of the 97 students participating they found that 75% of students knew there was something that could be done post-intercourse to prevent pregnancy and 13.7% said that they or their partner had used EC previously. Like prior studies, 88% could not distinguish EC from RU-486.

Only two studies have reported studies conducted after EC was made available over-the-counter. Both aimed to assess knowledge, perceptions, and use of EC in college students. Hickey (2009) reported that of 609 female students, 28% reported prior use of EC but 98% stated that they knew there was something to prevent pregnancy after intercourse. Generally, women approved of using EC (57%). Specifically, 96% thought it appropriate in the case of rape and 82% in the case of failed contraception. Hickey reported a persistent confusion of EC with medical abortion as 40% of the sample was not sure if EC was the same as RU-486. Access seemed to be more problematic as over one-third thought that EC required a provider prescription and 60% thought they would not use EC because they did not think they could obtain the medication. Reasons for this were not made explicit. The second study by Miller (2011) also examined attitudes about EC in undergraduate college students in Pennsylvania. Of the 714 participating, 354 were female and total ages ranged from 18-53 years. Like other studies

awareness of EC was high (74%) but use was low (17% of women or female partners of male participants). Knowledge assessments demonstrated a considerable lack of accurate information as 23% of women thought that EC could help in the prevention of contracting a sexually transmitted disease, 62% of women could not identify the most effective window of use, and 68% were incorrect regarding the prescription status of EC. Unlike prior studies both male and female students were more likely to associate EC with contraception (81%) than abortion (19%).

EC is important to the reproductive health context for a number of reasons. EC is the only form of contraception available to prevent a pregnancy once intercourse has already occurred. EC's accepted efficacy, safety and availability positions it to potentially play a significant role in pregnancy planning and intention. Although, research abroad has suggested that lack of knowledge and misconceptions stand as barriers to this realization, it is not clear if the social context in England and Nigeria can be compared to the social contextual conditions in the U.S. Also, research completed prior to EC's over-the-counter availability may not be directly applicable since this has increased access and subsequently produces dissemination of information and television advertising (see as examples http://ec.princeton.edu/ecmaterials/ecads.html). This is likely to have increased knowledge or changed perceptions (Corbett et al., 2006; Hickey, 2009; The Henry J Kaiser Family Foundation [KFF], 2005; Whittaker et al., 2008). The two studies conducted after over-the-counter approval certainly create a valuable foundation. However, unlike the current study, both were conducted in the Eastern U.S., have smaller sample sizes, and do not connect it to the larger influences of the reproductive health context and pregnancy intention. Framing pregnancy intention within EC is important for a deeper understanding and the utility of EC in the broader social context of reproductive health.

Summary

Unintended pregnancy is a significant public health issue. The scope and consequences of pregnancies that are unintended, unplanned, or unwanted combined with interventions that fall

short of increasing pregnancies that are planned and wanted suggests that women's pregnancy intention requires additional exploration. This study contributes to the literature by providing a deeper understanding of pregnancy intention. Furthermore, it provides this perspective within the context of emergency contraception where literature examining knowledge, perceptions and use after increased over-the-counter availability is in shortage. Using college women to complete this inquiry further adds knowledge by exploring pregnancy intention and emergency contraception in women that experience pregnancy at a lower rate and are assumedly invested in preventing a pregnancy that may threaten their college pursuit. A more complete understanding of pregnancy intention allows nurses, policy makers, and public health interventionists improved avenues in which to mitigate negative effects on reproductive health.

Methods

Overview

The knowledge that unseen forces act on the human experience is evidenced by how behavior is constrained by or resists the pressures applied by such forces (Apple, 1996; Carspecken, 1996; Fine, 1994; Giddens, 1984). As an explanation of the human response to phenomena, Giddens (1984) states "With every act, actors draw upon cultural themes they are familiar with so that the act will uphold certain values, be consistent with certain beliefs, and reclaim certain social identities" (p.37). It is in this way that human response can be examined beyond the face value, allowing it to serve as a proxy for making meaning and producing understanding of the determinant(s) of the action. This examination of contextual actions of the human experience can identify underlying economic, social, cultural, civil, and political forces including those that become potential social determinants of health and disease (Nagy Hesse-Biber & Piatelli, 2007).

The influence of these forces on human experience is both visible and invisible (Apple, 1996). Some events demonstrate the effect to be tangible and directly observed. For example, a woman with financial resources can be observed purchasing birth control pills and condoms to

prevent pregnancy. However, the overarching political, economic, and social forces that deal consequences for an early pregnancy, make her feel contraception is her responsibility, and contribute to her decision to prevent a pregnancy cannot be directly witnessed or traced to one specific source (Carspecken, 1996). Rather, these unseen forces are closely woven into the fabric of society and are only observed in as how they manifest in the daily actions and communications of an individual with his or her environment including that as it relates to health (Gannon & Davies, 2007; Grewal & Kaplan, 1994; Krieger, 2008; Taylor, 1998). Furthermore, forces are rarely isolated or discrete, swirling to create influence that is tangled and complex.

The Eco-social model (Krieger & Gruskin, 2001; Krieger, 2001a; Krieger, 2001b) is an established framework by which human action, communication, or response may be translated into a better understanding of "who and what is responsible for population patterns of health, disease, and wellbeing, as manifested in present, past, and changing social inequalities in health?" or "what these determinants are determining". This framework will provide the structure and link by which system relations can be used to explain findings (Carspecken, 1996). By exploring the actions and experiences in regards to pregnancy intention and EC, important information was obtained regarding the overarching conditions that have potential influence over what women know or don't know about emergency contraception, how readily EC is available as a means of pregnancy prevention, and if women have used or would use EC when faced with the threat of an unintended pregnancy.

A sequential, exploratory mixed-methods study of college women employing both survey and interview methods was used to examine the role of social context on women's pregnancy intention as well as, knowledge and use of emergency contraception. The study was conducted in two phases. Phase I was a brief descriptive, web-based survey of approximately 2000 college women recruited from a local university. The survey consisted of questions regarding demographic characteristics, sexual history, contraceptive practices, pregnancy history, and knowledge and use of emergency contraception. Phase II was a semi-structured face to face interview of 35 women with a variety of experiences related to pregnancy intention and EC.

Results of each component were analyzed independently and in conjunction. The findings of the study will inform additional research on the role of social context and health, public health interventions, and health policy.

The following section will provide additional details regarding: (1) the mixed-methods design, (2) the sample and procedure, (3) the measures for collecting qualitative and quantitative data, (4) data management and analysis, (5) reliability and validity of mixed methods research, and a discussion of the (6) study limitations and (7) study implications.

Study Design

The sequential, exploratory design was characterized by two data collection periods, where one stage preceded and informed the subsequent stage (Teddlie & Tashakkori, 2009). Phase I (descriptive quantitative design) was a web-based survey of college women recruited from a Midwestern university. Phase II (descriptive critical narrative) consisted of semi-structured, face to face interviews. This design provided a feasible means by which to explore the interaction of phenomena inherent to issues surrounding pregnancy intention.

Phase I: Descriptive quantitative design

The Phase I survey collected data on demographic characteristics, sexual history, contraceptive practices, and knowledge and use of EC. The resulting data served two purposes. First, due to the limited information about EC, the survey provided important foundational data regarding knowledge and use characteristics in this population. Secondly, the survey indentified particular clusters of pregnancy intention-related experiences used to identify the sample for the Phase II (descriptive critical narrative) semi-structured, face to face interviews. Women selected to participate in the Phase II interview portion of the project were identified from a diverse set of characteristics that allowed for maximum variation sampling and rich data set that could not otherwise be obtained.

Phase II: Descriptive critical narrative

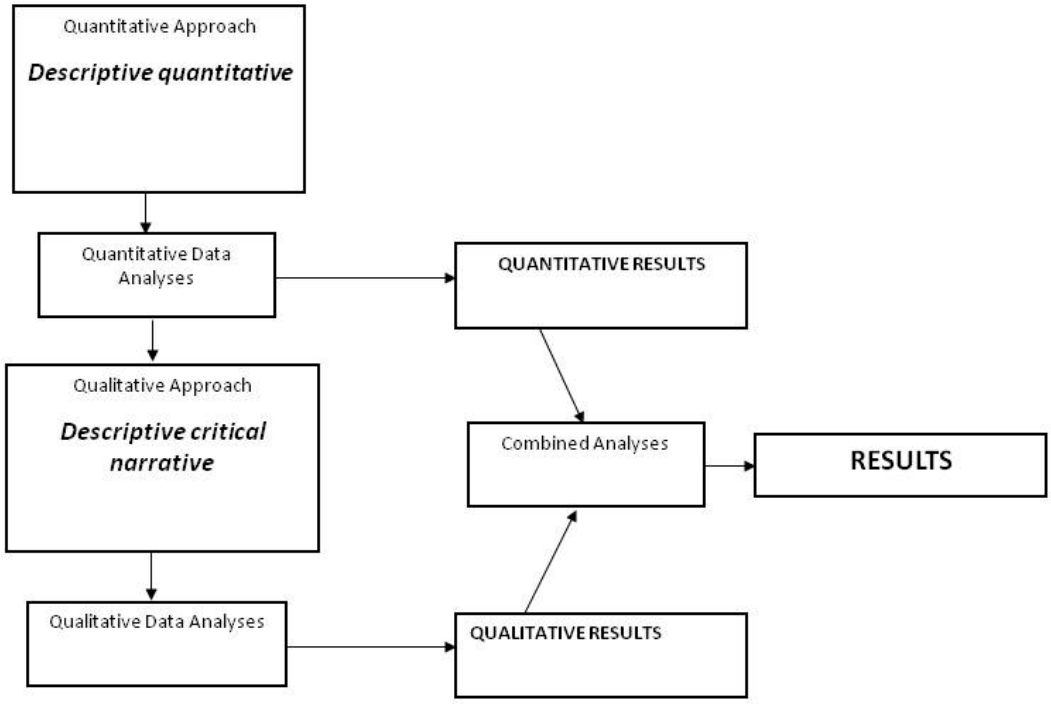
The use of interviews allowed for conversations with women allowing them to share personal perspectives (in the context of pregnancy intention and emergency contraception) and provided a forum by which these relationships were deconstructed and reconstructed in a research context (Collins, 2000; DeVault & Gross, 2007; Nagy Hesse-Biber & Piatelli, 2007). The interview also allowed a forum where the research experience provided a meaningful place for women to share their experiences, giving them a voice and creating a connection (DeVault & Gross, 2007).

Design Summary

A mixed-methods design was used to gain a broad and deep understanding of women's experiences with EC. In doing so, quantitative and qualitative approaches were used to collect data within the same population. The quantitative survey was critical in collecting foundational knowledge currently unavailable in the literature and identifying potential interview participants adding a deeper understanding to particular experiences. Figure 1 represents the mixed-methods design used in this study. It was adapted from illustrations published by Teddlie & Tashakkori (2003).

The chosen methods were thought to be highly compatible with the critical perspective of the conceptual framework by "openly inviting diverse ways of thinking, knowing, and valuing" (Teddlie & Tashakkori, 2003). The quantitative data sought to "discover relationships between events" (Carspecken, 1996), in this case those that surrounded pregnancy intention and EC, while the qualitative data contributed to the overall theoretical significance by exploring reference areas related to privilege and power in the surrounding context (Carspecken, 1996; Grewal & Kaplan, 1994; Krieger, 2008; Mohanty, 2003; Taylor, 1998). The mixed method design contributed to the strength and validity of the overall findings via triangulation and the allows for the potential of multiple perspectives (Teddlie & Tashakkori, 2009; Thurmond, 2001)

Figure 1. Sequential, exploratory mixed-methods research design.



Setting and Sample

The study was conducted at a large Midwestern university. Inclusion criteria for this study were: 1) female; 2) age 18-35; 3) attending the University of Iowa (UI) as a student; and 4) able to speak and comprehend English language. UI reported a fall 2007 enrollment of 30,400 students, more than 50% of the student body is female, and median age of 23.8 years (University of Iowa Registrar, 2007b) which supported that approximately 15,000 students were women and eligible to participate. In the student population approximately 62% of the originated from all 99 Iowa counties and 23% of came from the neighboring states of Illinois, Wisconsin, Nebraska,

Minnesota, South Dakota, and Missouri (University of Iowa Registrar, 2007b). Minority students composed about 9-10% of the student body and were classified by UI as African American, Asian/Pacific Islander, Hispanic/Latino, or American Indian (University of Iowa Registrar, 2007a). Exposure to knowledge and access to emergency contraception was supported by the availability of the medication at the student health clinic and local pharmacies. Costs of emergency contraception ranged from $10-$60 (Pharmacy Access Partnership, 2008) and all area hospitals provide emergency contraception in the emergency departments in the case of rape.

Procedures

Phase I: Descriptive quantitative survey

Health phenomenon have been increasingly investigated by nurse researchers with the use of internet methods which were chosen as the best fit for the purpose of this research project (Im & Chee, 2001). College women were believed to be computer proficient, making electronic recruitment and survey administration a logical and feasible fit. A web-survey instrument was developed by the investigator to obtain information about general demographics such as age, race/ethnicity, year in school, and insurance status allowing for comparisons of the data between categories. Questions about sexual activity, contraceptive history, and knowledge and use of EC provided foundational information regarding emergency contraception use characteristics. Questions were created in an attempt to capture particular beliefs that may provide insight regarding potential influence of the social context. For example, it was important to know if a woman used a regular contraceptive method in comparison to whether or not she has or would consider the use of EC.

Institutional review approval was obtained prior to pilot testing of the web survey. Pilot testing of the questionnaire was completed by having the study sponsors review the written questions for face validity, readability, content, structure, and fittingness. Based on their feedback, revisions were made to the questionnaire. The survey was then converted into a web format and further refined with the assistance of 17 college age colleagues who provided a

review panel. Mean administration time for the web survey format was 7 minutes and ranged in time to completion from 3-10 minutes. Appropriate revisions were made based on feedback. Institutional review board approval for modifications was subsequently acquired. (The implied consent document distributed via e-mail to potential survey respondents is included in Appendix A.)

Web-survey completion was assisted by WebSurveyor, made available at no charge through UI, and can be viewed at *http://cs.its.uiowa.edu/sda/survey/* and *https://desktop.WebSurveyor.net/login.aspx*. WebSurveyor allowed the researcher tailor a survey allowing users to enter a "survey gateway" where the survey was completed and disassociated from identifying information for those persons who did not voluntarily provide contact information. This tool also allowed for question branching, immediate collection of responses and database upload that facilitated expeditious analysis and eliminated any need for additional data entry or transfer. Furthermore, data is encrypted within the WebSurveyor application making the data unreadable in the case of an illegal breach and export of data outside of the program. This feature and the storage of survey data on UI secure servers further ensure protection of the human participants (University of Iowa, 2005a; WebSurveyor Corporation, 2005).

Phase I: Recruitment

All female students at UI were recruited via e-mail using institutional mass e-mail procedures. This allowed for the largest number of potential respondents in the most efficient manner. The UI setting provided ample computer access. At the time of survey distribution, the UI had 26 computer labs with 1,200 workstations. Additionally, 50 buildings and all residence halls had direct or wireless internet access (University of Iowa, 2005b). E-mail contact was ideal as all students are required to register an e-mail address and receive information electronically at this specified address. Approval was obtained from university officials to utilize the UI mass e-mail distribution system for these research purposes.

Study introduction and invitation were extended via the use of institution-associated e-mail addresses and distributed simultaneously to all of the female students registered at UI. The invitation to participate included a study overview including inclusion criteria, participant responsibilities, and elements of consent. (The invitation to participate in the survey can be viewed in Appendix B.) If respondents agreed to participate, a web link was directly connected with the survey website. Navigation to this site explained the study, emphasized the 10 minute approximate time commitment, explained that consent was implied if the respondent continued, and then directed the participant to continue with the survey. Only women who meet the inclusion criteria of the study were able to see the survey to completion. Upon completion of the survey major, respondents were asked if they wanted to be entered into a drawing of 1 of 20 $10 gift cards to a local department store. If they responded affirmatively, they were directed to provide e-mail and mailing addresses for contact. At this time they were also asked if they would like to participate in the Phase II interview portion of the study. If they wished to do so, they were also asked to provide contact information and if they would be on campus when the interviews were expected to be conducted. The last page of the survey included a listing of local reproductive health resources that included information about the student health center, community clinics, local counseling centers, and hospital contact information. These documents can be viewed in Appendix C.

All participants were identified by alpha-numeric codes that were used to label both the narrative and statistical data. A second and third invitation reminder was sent in the same manner for a total of three e-mail distributions. Compensation methods included a chance to win one of 40 $10 gift certificates to a local department store.

Phase II: Descriptive critical narrative

A semi-structured interview (SSI) was developed to gather women's stories about their experiences related to pregnancy intention and emergency contraception. Women were recruited from a pool of willing participants self-identified in the survey. Initial invitations for the

interview were based on pre-defined typical experiences and indicated preliminary sources of variation. These included women who had used emergency contraception, had low or high levels of EC knowledge, had a previous unintended pregnancy, or would not use EC under any circumstances.

Phase II: Recruitment

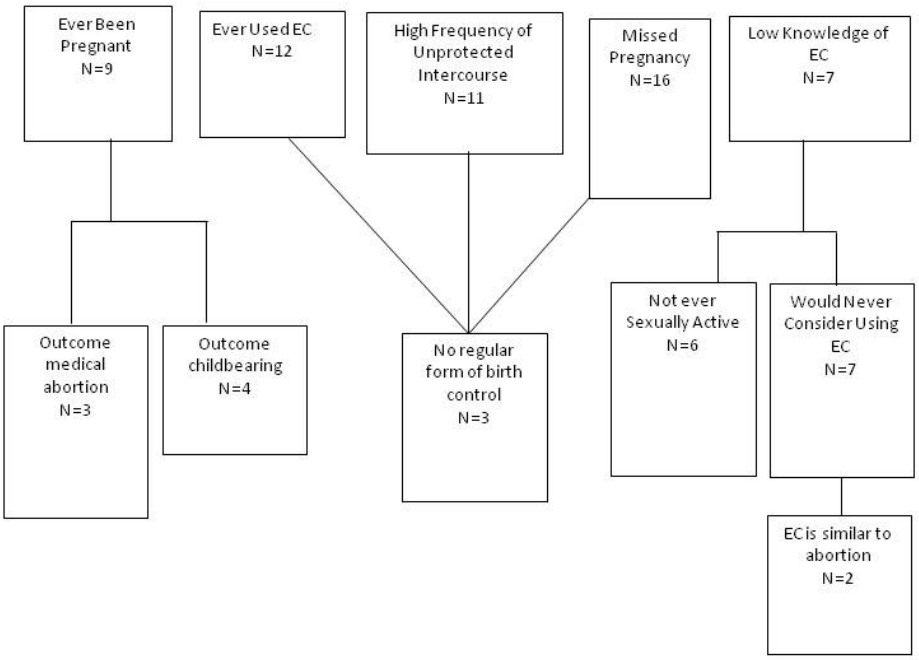
In order to achieve a group of women for the Phase II interviews with diverse experiences, a maximum variation sampling strategy was employed for the Phase II interviews. Patton (2002) argues that selecting research participants in this manner yields "(1) high-quality, detailed descriptions of each case, which are useful for documenting uniqueness, and (2) important shared patterns that cut across cases and derive their significance from having emerged out of heterogeneity" (p. 235). A final total of 35 women were chosen representing a wide variety of typical and unique experiences to the point of saturation (Ayres, 2000; Teddlie & Tashakkori, 2003; Teddlie & Tashakkori, 2009). Table 1 below identifies initial general categories of characteristics of interest. Interview procedures are described in additional detail following the section on recruitment strategy.

The selection of interview participants occurred in a several tier process. Initially, 1-2 potential participants were selected from each predetermined category. Theoretical sampling techniques allowed for selecting participants based on characteristics that emerged in the initial interviews that suggested additional typical experiences and included as sources of variation. The process of selecting interview participants continued until saturation was reached (Ayres, 2000; Teddlie & Tashakkori, 2003; Teddlie & Tashakkori, 2009). This emergent design strategy allowed for the selection of experiences that may have been unforeseen until data collection was initiated and underway (Patton, 2002). (See Figure 2 for schema regarding how interview participants were selected).

Table 1. Initial categories for selection of interview participants

Characteristic of Interest
Ever been pregnant
History of emergency contraception use
High frequency of unprotected intercourse (not due to trying to get pregnant)
Missed Pregnancy or “false alarm”
Low levels of emergency contraception knowledge

Figure 2. Schema for selection of interview participants



Phase II: Interview Procedures

Once a potential participant was identified she was contacted via the preferred means she identified in the survey of e-mail or phone contact. Identified participants received a review of the overall study purpose, elements of consent, goals of the interview, example interview questions, and researcher contact information. (The document extended to potential participants via e-mail is included in Appendix E.)

Women who did not prefer a phone call were asked to contact the researcher directly. During this first phone or e-mail contact, participation was confirmed, questions answered, and a meeting date and time arranged. The participant were asked to meet the researcher at the agreed upon time at the University of Iowa, College of Nursing. Prior to initiation of this project "researcher value orientations" (Carspecken, 1996) were explored. A subjective journal was kept as part of the audit trail to explore personal biases that may have been observed in the approach to the project, questions asked, and personal feelings and reactions about the research experience while engaging in the process. A regular entry was made in this journal in an attempt to make personal beliefs and values apparent and served as a reference for analysis and interpretation (Carspecken, 1996; LeCompte & Preissle, 1992). This included documentation of a self interview that includes expectations of what the researcher expected to find within the qualitative interview data in an effort and served to increase own self-awareness of personal biases. This also served to create an awareness of the researcher's social location and position of privilege and power (Mohanty, 2003). This procedure was combined with other methods in an effort to enhance the trustworthiness of the data findings (Carspecken, 1996). This is discussed in additional detail following discussion of the analysis procedures.

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Upon arrival at the interview place the participant were greeted, offered amenities, made comfortable, and offered an opportunity to ask and have answered any questions about the interview or overall project. She was presented with the consent document and given an opportunity to review the contained information and again be given the opportunity to answer questions. This process is similar to processed consent as described by Munhall (1988). If the participant agreed to proceed the interview was completed.

With permission, the semi-structured interviews (SSI) were tape recorded for later transcription lasting 35-85 minutes in duration. The function of the tape recorder was explained and the participants were notified when the tape was on and any time the researcher turned it off. Participants were also notified of researcher note taking during the interview for reminders of important points or observations Carspecken (1996). This included "thick description" of speech patterns, voice inflections, body movements and hand gestures (p. 45). A device called a Pulse Smart pen were used to facilitate this portion of data collection for its ability to link a written note with a specific moment in time with what the participant was saying via an audio recording with time mechanism (Livescribe Inc, 2009).

The participants were reminded that they could skip any questions they did not want to answer or end the interview at any time. The goals of the interviews were to elicit women's perceptions of the influence of social context, as well as, personal expectations and experiences. The literature base, conceptual model, and survey data were used to build the interview script. (See Measures section below for addition details of the SSI and Appendix F for the complete SSI

guide.) The interviews began with sharing survey data results and how the individual compared to the rest of the survey population. Participants were encouraged to share their reactions and thoughts about the survey and/or data. For example, she was asked whether she was surprised at any findings or whether she might agree or disagree with the findings. Often this provided a transition to more personal and sensitive topic matter. After a feeling of rapport developed, identified as relaxed speech and posture and open sharing of information, additional questions attempted to ascertain what a pregnancy might meant to these women at this time in their life, who or what influenced this perception and how this might be compared to perceptions of influences regarding the prevention of pregnancy. Interviewer responses were used to forward interview by asking for clarification or elaboration of said experiences. This will also included perceptions of influence regarding knowledge, access, and use of emergency contraception. This order of questions and prompts were consistent with starting with concrete concepts and asking participants to move to more abstract concepts (Carspecken, 1996). If at any time I perceived that the women are upset or uncomfortable I suggested a break, offered a drink, and confirmed that they still wanted to proceed with the interview.

The SSI concluded by asking if there were any further thoughts that the women want to share that didn't come up during the interview. When they confirmed they had nothing more to say, I turned off the recording devices. At this time I asked them to reflect on the experience of being interviewed and how they felt about sharing their personal stories. Ending the interview in assisted in the assessment of any unanticipated and/or negative psychological consequences that may have arisen during the interview (Diaz et al., 2004; Kavanaugh & Ayres, 1998; Zimmerman & Watts, 2004).

Upon completion of the interview, participants received $20 in compensation, a hard copy of the sexual health resources handout included in the web-survey, and an offer of researcher's contact information. Once the participant has left the interview site, I reviewed, reflected upon, and added additional notes about the interview experience. This included any perceptions of observations of non-verbal communications, my own reactions to participant

emotions and experiences, and any inferences about the truthfulness of the data and any additional questions that arose as a result of the interview experience. The audio-recordings were given to a transcriptionist. Additional information regarding data management is noted below.

Measures

Phase I: Descriptive survey

The web-survey was developed by the investigator to obtain important foundational information about the population of interest. Questions asked for information regarding demographic characteristics and sexual histories. Specific demographics collected included age, race/ethnicity, year in school, insurance status, how college was financed, and size of graduating high school. Collecting these individual characteristics allowed for comparisons of the data between categories. Questions regarding gender, age, and year in school acted as checks for meeting inclusion criteria. Individuals providing responses not meeting inclusion criteria were not allowed to complete the survey in its entirety. Questions about sexual activity, contraceptive history, and knowledge and use of EC established basic information regarding emergency contraception knowledge, perception and use characteristics. Specific questions were adapted from previous surveys such as the Family Growth Survey and the California Women's Health Survey (unpublished personal copy from California Department of Women's health). Additional questions were written with the literature base as a guide. Questions were created in an attempt to capture particular beliefs that may provide insight regarding potential influence of the social context. For example, it was important to know if a woman used a regular contraceptive method in comparison to whether or not she has or would consider the use of EC. The entire survey in hard copy can be viewed in Appendix D (Please note due to the inability to demonstrate branching strategy in hard copy format, questions maybe not appear contiguous.)

Phase II: Semi-structured interview

Several members of my dissertation committee and nurse colleagues critiqued and suggested revisions to the SSI guide prior to the final IRB review of the instrument and process. As expected the questions asked during the interviews evolved and progressed in relation to my improved interviewing skill and overall perspective of shared and/or unique experiences. Questions and probes changed slightly and adapted to varying participant characteristics such as levels of sexual experience or level of knowledge about emergency contraception or perspectives related to pregnancy intention. This evolution was consistent with qualitative research that is reflective of what Patton (2002) calls "emergent design flexibility" (p. 43) which requires some tolerance for flexibility and patience with the inductive research process. He states:

> "Naturalistic inquiry designs cannot usually be completely specified in advance of fieldwork. While the design will specify an initial focus, plans for observations, and initial guiding interview questions, the naturalistic and inductive nature of the inquiry makes it both impossible and inappropriate to specify operational variables, state testable hypotheses, or finalize either instrumentation or sampling schemes. A naturalistic design unfolds or emerges as fieldwork unfolds" (Patton, 2002).

A semi-structured interview (SSI) guide was created to collect narrative data for this study. The design of this guide was directed by an analytical review of the EC literature and concepts of Ecosocial theory (Krieger, 2001a; Krieger, 2001b). The purpose of the design and content of the SSI was to elicit stories and perceptions of women regarding their experiences with emergency contraception and/or unintended pregnancy. Questions were designed to elicit responses that suggested influences both local and beyond and that shed light on the material worlds that structured women's lives (Grewal & Kaplan, 1994; Krieger, 2008; Taylor, 1998).

The first part of the interview provided the participant with results of the survey data and allowed the participant to react to her location within this data. This technique aimed to get the participant comfortable in talking about herself and while the researcher attempts to build rapport with the participant (DeVault & Gross, 2007). Building rapport is an important aspect of the research process in order for the researcher to be optimal at encouraging the telling of stories and pressing for additional details that may move beyond the "taken for granted

constructions"(DeVault & Gross, 2007). The full text of the SSI is included in Appendix F but excerpts of the guide appear below.

> II. I wanted to show you the preliminary survey results that you participated in during the Spring semester of 2009. *(Present some critical findings related to characteristics like/unlike the invited participant.)*
>
> A. What do you think of this information?
> B. Where do you think you fall within these responses?
> C. Are you surprised by anything? Why?
> D. Did you expect that this is how you would fall in the distribution?
> E. Do you feel there is anything here that you feel is especially right or wrong?

The next set of questions asks women to reflect on what a pregnancy might mean to them at this time in their life attempting to elicit their thoughts about the wantedness of a current pregnancy, means of prevention, and who or what influences these perceptions. An excerpt from this section of the interview guide is below.

> III. So you are (say age)_years old and a (say year in college) in college. Tell me about your thoughts about pregnancy at this time in your life.
>
> A. If you discovered you were pregnant right now how do you think you would react?
>
> IV. How likely do you think it is that you could get pregnant at this time in your life? Can you tell me why you think that is?
>
> V. I know you said (briefly summarize what was said about likelihood of getting pregnant)_but if you (or your best female friend) became pregnant at this time in your life, can you tell me what people in your life might think?
>
> A. your sexual partner
> B. your sister
> C. your brother
> D. your best friend here at UI
> E. your mother
> F. your father
> G. your neighbor back home
> H. your minister or a fellow church member
> I. your best friends from high school (male or female?)

The last section of the interview guide moves to more specific questions about potential influences and perceptions of reproductive control within the constructed categories drawn from framework inspired by the Ecosocial framework.

VIII. When you think about preventing pregnancy what are some of the things that have influenced your ideas about that?

A. Can expand on any of the influences you mentioned previously or other influences? (Follow with prompts as necessary.)

a. Family
b. friends
c. partner
d. religious beliefs
e. cultural beliefs
f. resources/cost/accessibility
g. rules or laws

B. Which ones do you think have the strongest influence?

C. Have you always felt this way or do you think your thoughts have changed over time. If your thoughts have changed why do you think this is?

IX. Do you think that the environment here at college is different in your hometown in relation to pregnancy? (For example, sexual behavior, support, consequences, attitudes, acceptance, etc.) [Prompt as needed: How are attitudes/expectations different in each place for men and women or boys and girls?]

The content and structure of the interview guide aimed to elicit responses regarding how these women perceived themselves in comparison to their peers and others in the college student body. Questions about prospective pregnancies were designed to promote reflection on how a pregnancy would be perceived by themselves and important people or influences in their lives. Building on this information, additional questions attempted to obtain information about how women approached pregnancy prevention. This included perceptions of EC with both retrospective and prospective considerations use. Additional context information was achieved by asking participants to compare prior experiences such as perceptions of sexual behavior and birth control access to their current college environment.

Data Analysis and Management

Aim 1 was to describe the demographic characteristics, sexual histories, and EC knowledge of college women in the desired sample. Data from the web survey was analyzed using the SAS statistical program with the guidance of statistical consultants. Data were converted to descriptive statistics using means, medians and ranges for interval and ratio data

and proportions for categorical data. Relationships in subgroups were examined using regression analysis and odds ratios.

Aim 2 was to explore the role of social context with varying experiences of women regarding unintended pregnancy. Data were coded into “units of meaning” (Lincoln & Guba, 1985) and labeled. These segments of data were clustered and compared to other clusters to allow data to be sorted and systematically retrieved. The application of such a scheme ensured attendance to all of the data, allowed for checking against prior implicit or explicit assumptions, and facilitated the of locating of contradictory explanations of developing interpretations. Coding occurred with simultaneous thematic analysis of the segmented, categorized, summarized, and reconstructed data and allowed selection of themes within the structure and other emerging patterns and important concepts.

Within and across case analysis was chosen for its ability to maintain the contextual meaning of the data while at the same time allow for comparisons across multiple accounts (Ayres, Kavanaugh, & Knafl, 2003). Specific to this examination of social context, this method allowed for interpretation of both the “general context” and the context of “each individual’s account of experience”. Accounts were examined for the recurrence of ideas and these became a “theme”. Themes were identified within each narrative account and throughout the accounts as a whole with the goal of giving meaning to the women’s experiences. Interpretations were validated by reviewed by experienced researchers that composed the dissertation team.

Aim 3 was to integrate quantitative and qualitative data to identify critical concepts related to pregnancy intention. This analysis consisted of comparing and contrasting the salient characteristics that evolved from the survey data and the emergent themes extracted from the narrative interviews. This process was analogous to the within and across-case methods described above.

Additional Qualitative data management

Data composing the field notes were compiled by typing written comments into electronic word documents along with records of other notations or observations. Interviews were transcribed verbatim by the principal investigator and/or a transcriptionist with human subjects' certification. To maintain confidentiality all proper names were replaced with a pseudonym during transcription of audio files to word processing documents. Audio-recordings were deleted following a period of time after completion of transcription. All electronic data files were stored on UI secure servers. Organization of data was a priority and completed with the assistance of Nvivo data management software.

The advantages and disadvantages of using computer-assisted qualitative data management software (CAQDMS) like Nvivo are well documented. The use of Nvivo for this project organized a large qualitative data set derived from the 35 participant interviews. The software was a benefit in reducing the labor intensive task of data analysis (Sandelowski, 1995), however interpretation, conceptualization, and application of the theoretical perspective remained the responsibility of the researcher. Two of the most salient critiques against the use of software are the risks of "unrecognized bias" or "premature closure" (Ayres, Knafl, & Tripp-Reimer, 2008; Bringer, Johnston, & Brackenridge, 2004; Jennings, 2007; Sandelowski, 1995; St. John & Johnson, 2000).

Unrecognized bias occurs when discovery of findings are constrained by allowing only interpretations that fit into an applied framework, potentially overlooking important findings or skewing the meaning of observed findings (Ayres et al., 2008). The second kind of error, premature closure, where a search for findings is ended too early, provides an analysis that negates any complexity and prohibits discovery of what might belie the superficial findings (Ayres et al., 2008). Both errors have the potential to introduce bias and threaten validity. To combat these fatal errors, complete engagement with the data is required to investigate all potential avenues of interpretation and has been built into the analysis procedure. The use of CAQDMS can assist in this process to allow for a thorough search of the data that may

potentially include alternate or additional findings (Ayres et al., 2008; Richards, 1999). CAQDMS can assist in streamlining the coding and data compiling process so that attention to the data is complete and the intensity of analysis can focus on interpretation (Bringer et al., 2004; Richards, 1999). Table 2 below outlines the analytic reading strategies of the qualitative interviews.

Table 2. Analytic Strategies Used in Each Reading Sequence of Transcribed Text

Reading sequence	Analytic strategies
First reading of transcribed text	Horizon Analysis: • Gain familiarity with the text • Gain sense of context, and intent • Consider holistic meaning
Second reading of transcribed text	Overreading: • Begin code and label identifications • Note role perceptions • Consider deeper meanings
Subsequent readings of transcribed text	Theoretical application • Identify power influences • Clarification and justification of identified themes • Create meaning fields

To make optimal use of the Nvivo software program the researcher attended training for the software in addition to using tutorials offered by the program creators. Ultimately, the use of Nvivo for this project offered progress tracking which greatly assisted in the transparency and the creation of an audit trail, allowing thorough answers to questions about the congruence between the methodology, data analysis, and findings (Bringer et al., 2004; Richards, 1999; St. John & Johnson, 2000). Furthermore, the specific CAQDMS that were used by this project,

Nvivo 8, offered the extraordinary opportunity to build links within interviews, facilitating within-case analysis by identifying repetitions, inconsistencies, and multiple story lines (Ayres, personal communication, 2009).

Data Analysis

Overview

Data for this study were in the form of numeric survey data, interview text, observations, and field notes. The quantitative survey data was analyzed first to provide the mechanism in which interview participants were selected in addition to providing a context for the interview. Building upon the foundational knowledge of the survey, interviews were approached using a critical narrative analysis looking for elements of women's stories that suggested influence on aspects of acquiring knowledge of, accessing, or using emergency contraception. Upon completion of the analysis of the interview data, results were compared back to the quantitative survey findings and comparisons made for elucidations, contrasts, or parallels.

Phase I: Quantitative analyses

Data from the web survey interface was converted to Excel data bases and analysis completed using the SAS statistical program with the guidance of statistical consultants. All variables were evaluated for completeness and accuracy. Missing data was handled by excluding that individual from the analysis that required a particular response. Each question was described using means, medians and ranges for interval and ratio data. Proportions were used to describe responses when data are categorical. Comparisons of some variables across subgroups were analyzed using logistic and stepwise regression and odds ratios. For example, models with the dependent variable of a history of EC use were created to establish relationships with history of missed pregnancy, knowledge of EC over-the-counter availability, and year in college. This analytic approach served both intended purposes of allowing selection of interview participants and providing important foundational knowledge not found elsewhere in the literature.

Qualitative analyses

Interview data were analyzed using critical and narrative methods. The critical approach to analysis is guided by Carspecken (1996) but adapted to fit a single period of observation with a simultaneous qualitative interview rather than the longer-term ethnographic focus of his work. Consistent with this critical approach the Ecosocial conceptual framework were used to identify structural relations within the findings (Carspecken, 1996). This approach to the analysis allows for the deliberate search for how influence within elements of societal structure exert influence on pregnancy intention (Carspecken, 1996; Thomas, 1993). As a complement to the critical analysis, Carspecken (1996) suggests the use of narrative analytical techniques and for this an adapted within and across case analysis were used. This approach was chosen for its ability to maintain the contextual meaning of the data while at the same time allow for comparisons across multiple accounts (Ayres et al., 2003). Specific to this examination of social context of pregnancy intention and emergency contraception, this method will allow for interpretation of both the "general context" and the context of "each individual's account of experience" (p.871).

Approaching narrative accounts of women's experiences within a critical perspective allows for a "direct style of thinking about the relationships among knowledge, society, and political action" (Thomas, 1993). This approach provides for a purposeful focus on non-explicit agendas that "inhibit, repress, and constrain" (p. 3). The resulting perspective serves to highlight ways in which the status quo or societal norms and power structures can be challenged and in this way knowledge becomes the agent for social change (Carspecken, 1996; Thomas, 1993). Specific to this project, this approach may answer questions such as "who or what facilitates or obstructs women's knowledge, access, and use of emergency contraception?"

Crucial to the analysis process was "systematic engagement" of the researcher with the data (Ayres, 2007a; Ayres, 2007b; Patton, 2002). Readings of the texts began superficially and continued as emerging themes or concepts required clarification and justification (Ayres, 2007a; Ayres, 2007b; Carspecken, 1996; Patton, 2002). The application of such a scheme ensured

attendance to all of the data, allow for checking against prior implicit or explicit assumptions, and facilitation of locating contradictory explanations of developing interpretations.

The first read of the transcripts was done for the purposes of familiarizing oneself with the data and to gain a sense of the content and intent of each participant's story. Carspecken (1996) describes this initial step as "horizon analysis" (p.94) using an intuitive process to gain a holistic and explicit understanding of the text. This process is similar to a case-oriented analytic strategy where each woman's narrative is considered as a whole and effort is made to understand the meaning conveyed in their individual stories. Sandelowski (1996) explained that researchers who initially analyze a case holistically gain useful insights into the "…idiosyncratic, unique, and non-fungible features of cases that give them their integrity and make them so valuable for study" (p.525). This process was critical to later steps in the analysis where stories were analyzed for implicit influences on their experiences of pregnancy intention via messages that may lie 'between the lines'.

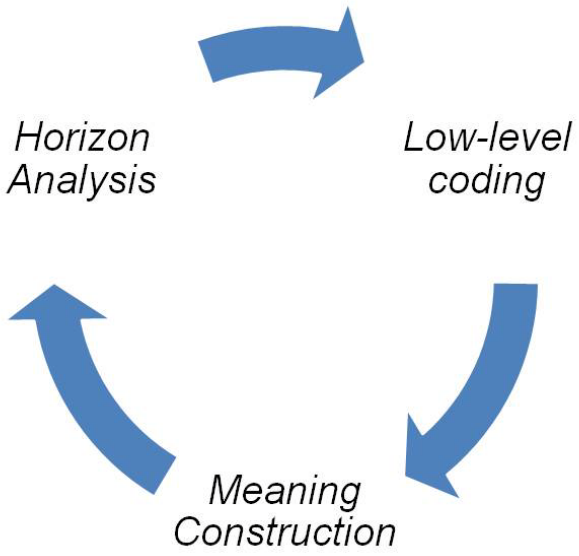
Subsequent readings employed the use of low level coding that assisted in noting patterns and unusual events (Carspecken, 1996) and is consistent with the within-case analytic strategy called overreading (Ayres & Poirier, 1996). Overreading examined the text for repetitions, evasions, omissions, incongruencies, inconsistencies, complexities, silences, and endings that indicate there might be more to a story than was being verbalized (Ayres et al., 2003; Poirier & Ayres, 1997). This also included close attention to interaction patterns and their meanings and role relations (Carspecken, 1996). Coding occurred with simultaneous thematic analysis of the segmented, categorized, summarized, and reconstructed data and allowed for selection of themes within the structure and other emerging patterns of experience and important concepts within the data set. Clusters of ideas became a "theme" and allowed for comparison, sorting, and systematic retrieval of the resulting data. Themes were identified within each narrative account and throughout the accounts as a whole with the goal of giving meaning to the women's experiences (Ayres et al., 2003). This strategy builds on the aforementioned approach by considering deeper

or broader meanings in the data that may reveal influences within the narrator's ideas and actions (Carspecken, 1996).

Additional readings were for the purpose of overlaying the theoretical orientation, and in this case, openly identifying influences on pregnancy intention. Carspecken (1996) advises the isolation of segments that are perceived as articulations of meaning of the focus areas. These may be individual accounts that cut across the accounts of experiences. For example, emergent themes that identify influences on pregnancy intention can be searched both within and across accounts. These themes can be subsequently used to identify both facilitators and mechanisms that limit reproductive control. For these segments, readings proceed in a line by line nature with a constant overlay of the theoretical framework to create "meaning fields". These are defined as a range of possibilities of meaning that may include my own perceptions and potential perceptions of the study participants. Figure 3 illustrates the recursive process of the qualitative analysis process used for this project.

The text of the interview is the foundation upon which several "virtual texts" (Carspecken, 1996) arise as the narrative analysis proceeds and the researcher searches for meanings embedded in the transcribed text (Ayres & Poirier, 1996). As Carspecken (1996) points out that of particular interest may not be direct responses to interview questions but rather defense or explanation to underlying claims that provide crucial knowledge. It follows then that through the interaction of the researcher's mind with the written stories virtual texts are formed and that patterns in the data and meanings of the text are located. Interpretations as a result of the analysis process were checked by simultaneous review of experienced researchers that compose the research team (Ayres et al., 2003; Carspecken, 1996). In this way alternate explanations were proposed and interpretations either clarified or broadened.

Figure 3. Steps of Analytic Strategy



Source: Carspecken, 1996

Integrated quantitative and qualitative analyses

Aim 3 is to integrate quantitative and qualitative data to identify critical concepts related pregnancy intention and connection to use of EC. This analysis consisted of comparing and contrasting salient characteristics that evolved from the survey data and the emergent themes extracted from the narrative interviews. This process was analogous to the within and across-case methods described above.

Validity and Trustworthiness

Phase I

To enhance validity of the survey, questions were taken from established sources, reviewed by established researchers, and pilot tested. Specific questions were adapted from the

Family Growth Survey and the California Women's Health Survey (unpublished personal copy from California Department of Women's health). Additional questions were created with supporting literature as a guide. Written questions were reviewed by study sponsors for face validity, readability, content, structure, and fittingness. Written questions were then converted to web format and pilot tested. Revisions were made accordingly with each review. This process assisted with descriptive and construct validity. Statistical conclusion validity was enhanced by procuring a trained statistician and experienced quantitative researcher who confirmed appropriate types of analysis and confirmed resulting interpretations were appropriate and within the scope of a particular analysis.

Phase II

A key component of collecting qualitative data is ensuring trustworthiness of the data. Unlike the paradigm where validity of the data is determined apriori or as an applied analytical tool, qualitative research establishes trustworthiness in the process of engagement with the data and transparency of the entire process. In qualitative research ensuring validity is a technical process closely tied to a greater understanding of a subject rather than a concept deeming scientific worth (Carspecken, 1996; Maxwell, 1992; Sandelowski, 1993). "Validity, in a broad sense, pertains to this relationship between an account and something outside of that account whether this something is construed as objective reality, the constructions of actors, or a variety of other possible interpretations" (Maxwell, 1992). At all stages of the data collection process, care is taken to maintain integrity of the data, confirm adequacy, and validate appropriateness (Sandelowski & Barroso, 2003).

As mentioned previously, part of the creation of an audit trail included checking personal biases and tracing the development of analytical insights assisting to establish validity or trustworthiness of findings (Carspecken, 1996; Lincoln & Guba, 1985; Rodgers & Cowles, 1993). Therefore, several safeguards were put in place as a check against fulfilling the investigator's research prophecy and enhance accuracy. First, the use of a journal recording

feelings, reactions and expected findings prior to data collection assisted in making personal values apparent and make potential influences aware to both the researcher and any readers (Carspecken, 1996; Sandelowski & Barroso, 2003). Values are defined here as any judgment or any view of the researcher as "good, bad, right, and wrong" (Carspecken, 1996). Reactions and feelings were recorded at the beginning of the project and throughout the research and data collection processes. This activity is also important to a critical perspective as these reflexive articulations can highlight ways in which the researcher holds power in the ability to construct reality and how differences in social status may distort the situation (Carspecken, 1996; Gannon & Davies, 2007). This personal perspective provides assistance in supporting analytical discussion later in the research process. The purpose of such record keeping is to prevent against confirming some personal belief that is not demonstrated within the data (Carspecken, 1996; Maxwell, 1992; Thomas, 1993).

The construction of field journal as part of the audit trail also assisted in enhancing trustworthiness of the data. This was used to record voice inflections, hand gestures, or facial expressions of the participant, in addition to thoughts, feelings and reactions of the researcher before, during, and after the interview. This record will further be compared to interview findings for parallels and contrasts and provide another mechanism by which interpretations can be checked.

Carspecken (1996) suggests one way of validating explanations of participant experiences is to have knowledge of the context in which the participants exist. This allows accounts to be checked against the known context for the purpose of confirming interpretations, suggesting alternate interpretations, and eliminating non-plausible interpretations. Contextual information is provided in part by the survey component of this project, as well as having background knowledge of characteristics of local health care services that may be pertinent to pregnancy intention and EC knowledge, perceptions, and use.

Peer debriefing was also be used in the data analysis phase to support validity claims. This procedure will utilize members of the research team and other colleagues at check points in

the analysis process to confirm appropriate coding labels and coding levels, suggest alternate interpretations, and perhaps make their own evaluative judgments when comparing the field notes to interview texts (Carspecken, 1996).

Descriptive validity was enhanced by repeating back to the participants statements or ideas that the researcher perceives have meaning (Maxwell, 1992). This gave the participants opportunity to clarify or contradict what the researcher had interpreted them to say and also provided a check on the interpretive validity of the interview data (Doyle, 2007; Maxwell, 1992). This also allowed the meaning to be taken back to the participant and checked against the contextual fit (Carspecken, 1996). This process served as a proxy for and the extent of member checking due to likely non-availability of students in the post-analysis phase of the project. Carspecken also notes the potential challenges that can result in member checks due to power differences (Carspecken, 1996). It is possible that sharing all concepts perceived as foreign or overwhelming, prompt participants to agree to disagree falsely, or say things that do not genuinely reflect their experiences and ideas. To alleviate this imbalance to the extent possible, non-authoritarian relationships were attempted to be established and participants were encouraged to use everyday language to express their ideas. Where potential conflicts were present in the researcher and participant accounts both were included in the compilation of results.

Closely aligned with the interview procedure and analysis is the concept of catalytic validity. Lather (1986) states that catalytic validity is a necessary element for research credibility includes building an understanding of a participant's experiences and includes "an opportunity for respondents to grow through thoughtful assessment of their experiences" (p. 70). Consistent with a critical perspective that purposefully looks at power structures, this study aimed to provoke participants into a greater "self-understanding and, ideally, self-determination through research participation" (p.67) in which they might themselves become aware of influences that may restrict their freedoms and subsequently resist influences as they are able.

Chapter Summary

The persistence and scope of problems associated with unintended, unplanned, or unwanted pregnancies suggests that the meaning and experiences of women's pregnancy intention requires additional exploration. Studies exploring contextual issues in combination with pregnancy intention and knowledge, perceptions, and use of EC are few. Those that do exist were conducted outside of the U.S., completed before EC was available over-the-counter, used smaller populations, or looked only retrospectively at these concepts. A sequential, exploratory mixed-methods study of college women employing both survey and interview methods was used to examine the role of social context on women's pregnancy intention as well as, knowledge and use of EC. This study sought to add to the existing literature by providing critical information on EC knowledge, perception, and use within the role of the social context and pregnancy intention in general. In doing so, findings will hopefully provide a greater understanding in how health behavior is mitigated by community, government, and individual responses. Awareness of the influence of the social context at various personal and structural levels can be used to better inform public education initiatives and interventions aimed at reducing unintended pregnancy or eliminating disparities in health care.

CHAPTER 2

AN INTEGRATIVE REVIEW OF PREGNANCY INTENTION

Background

Pregnancy intention includes the scope of wantedness, prevention, or planning in relation to fertility and is a health concept that is often discussed, researched, and targeted by interventions. Considered to be a significant public health problem, research has suggested that almost half of all births in the U.S. are unintended (Finer & Henshaw, 2006; J. Trussell et al., 2009) and strain public funding resources by costing taxpayers $11.1 billion each year (Sonfield et al., 2011). Additional resources are directed at interventions such as those led by the Center for Disease Control and Prevention (CDC) initiatives and Health People 2020 (and prior) goals to reduce the number of unintended pregnancies (Centers for Disease Control and Prevention (CDC), 2010; U.S. Department of Health and Human Services, 2010).

Statistics for research and studies that direct interventions are often obtained from large data sets such as the National Survey of Family Growth (NSFG) or the Pregnancy Risk Assessment Monitoring System (PRAMS). These measures assess pregnancy intention in terms of pregnancy desire related to timing, attempts at prevention, and planning of conception (Center for Disease Control and Prevention, 2011; Centers for Disease Control and Prevention, 2010). Getting pregnant at a time that was earlier or later than desired, lack of planning, and or lack of prevention or failed attempts at prevention are all considered to be characteristics of pregnancies that are unintended.

Despite the focus on unintended pregnancy, interventions aimed at reducing the number of pregnancies with this label continue without great impact. Unintended pregnancy rates have increased since 1994 specific to certain population groups and in the population in addition to the decrease in the proportion of women using of regular methods of birth control (Finer & Henshaw, 2006; Mosher, 2004; National Center for Health Statistics, 2005). Of the one in twenty women that experience an unintended pregnancy, this rate is disproportionate in women

age 18-24, woman of color, cohabitating women, and poor women as evidenced by the above average rates of unintended births and abortion (Finer & Henshaw, 2006).

It has been suggested that reason for the gap between the perceived problem of unintended pregnancy and efficacy of efforts to reduce negative consequences is that current measurements may be missing their mark. Contemporary policy initiatives take aim at "unintended pregnancies" and "contraceptive failures" and fail to note the complexity that falls outside the conventional definitions of these phenomena (Luker, 1999; Sable, 1999). Negative health and social consequences for women and children are attributed to pregnancies that are not intended, unwanted, or unplanned. Interpretations of planning and wantedness of pregnancies are often presented dichotomously and in contradiction. Either a pregnancy was planned or wanted or it wasn't. In reality, a significant number of experiences may fall more in the "grey area" of pregnancy intention, on a continuum of wantedness and planning outside the limits of these concepts. Furthermore, these tools measure what they intended to measure, fertility, when the social realities of "motherhood" may be more contemporarily relevant especially in a political climate the strongly considers "family values" (Luker, 1999).

Concerns regarding measurement issues of pregnancy intention are not new. Many researchers have suggested that pregnancy intention is not the reasonable and logical process it is perceived to be (Klerman, 2000; Luker, 1999; Sable, 1999). Focusing on wantedness and planning may not capture all the complexities of the concept and existing measures may require an expanded and complex set of questions (Klerman, 2000) to better capture meaning and allow for understanding. It is this understanding that should be the precursor to programmatic interventions that attempt to reduce pregnancy and fertility related health concerns.

This understanding requires a closer examination of pregnancy intention as it is experienced by women. Examining the phenomenon of pregnancy intention set within its context likely best provides the broadest and most vivid perspective of how decisions are made and result in behaviors. Examining perceptions leading up to a pregnancy experience and looking retrospectively at a past experience can likely provide unique and valuable insights. This

comprehensive understanding is important considering contemporary health interventions have not achieved their goals of reducing unintended pregnancies that result in negative health consequences. "Going back to the drawing board", so to speak, can highlight ways in which current use and application of concepts inclusive of pregnancy intention can be expanded, improved, and translate into greater effectiveness of interventions. Trussell and colleagues (1999) express this sentiment well stating, "It is important that we develop a greater understanding of these alternate concepts of pregnancy intention, the best intention measures for predicting pregnancy outcomes, the relationship of these concepts to women's and couple's lives, values and choices, and how women and couples integrate the use of contraceptives with their reproductive desires and intentions" (p.247).

With these goals in mind an integrative review of the literature was conducted. In an attempt to contribute to the existing literature in a novel way, only literature was selected that included the contextual experiences of women preserved in quotations chosen by researchers to represent their own findings. Specific findings were extracted and compiled across studies and categorized by perspectives that looked forward at a future or theoretical pregnancy or reflected on a current or past experience. In a similar style, conclusions were also synthesized and areas of both difference and convergence noted with the ultimate goal of presenting pregnancy intention within multiple perspectives. The purpose of this paper is to present broader definitions of pregnancy intention than what are commonly seen in the literature and used as a basis for contemporary health interventions.

Methods

Consistent with the methodological purpose of conducting an integrative review, this review attempts to summarize existing literature with the purpose of creating a better understanding and contribute to the scientific literature in a way that can be applied to both theory and policy development (Whittemore & Knafl, 2005). This review followed the recommendations of Whittemore and Knafl that encompassed five stages including: 1) a problem

foundation stage, 2) a literature search stage, 3) a data evaluation stage, 4) a data analysis stage, and 5) a presentation stage.

The Problem Foundation Stage

The problem that prompted the conduct of this particular review was the observation that concepts frequently discussed as elements of pregnancy intention in the research literature were inconsistent and appeared to not be inclusive of certain aspects of pregnancy planning, wantedness, or desire. In essence, there was a disconnect with concepts used for measurement and those expressed by women's lived experiences. Therefore, the purpose of this review was to look propose broader definitions of pregnancy intention that better reflected women's experiences and improved the foundation of knowledge in which interventions are based. Specific concepts of pregnancy intention included both the presence and absence of pregnancy wantedness, pregnancy planning, pregnancy expectedness, and pregnancy happiness. Due to the belief that elucidation could be found in the contextual experiences of women, only studies that attempted to maintain this context by including examples of direct quotations in their interpretive findings were included.

The Literature Search Stage

Initiation of the literature search stage was aided with the assistance of a health science research librarian. The literature databases, PubMed, CINAHL Plus, Academic Search Elite, ERIC, Health Source: Nursing/Academic Edition, Professional Development Collection, Social Work Abstracts were use to electronically search the full text of research articles using all search terms identified in the literature to be related to pregnancy intention. These terms included: unintended pregnancy, unintended birth, unplanned pregnancy, unplanned birth, unwanted pregnancy, unwanted birth, unexpected pregnancy, unexpected birth, pregnancy happiness, and pregnancy unhappiness. Inclusion criteria for this review were research studies 1) with women participants; 2) at least some or all of the participants resided in the United States; 3) included

interpretations where women's experiences were presented in context ; and 4) were available in the English language.

Initial searches obtained 6097 articles. All articles were reviewed for inclusion by reviewing the title, brief descriptions, and abstracts. The sample pool of articles was achieved by continuing to read article content until inclusion or exclusion could be definitively determined. Once an article was identified this reference list was analyzed for the potential of additional studies meeting inclusion criteria. The final sample included 15 full text articles and details are provided in table 3.

Data Evaluation Stage

Part of the evaluation criteria of the final pool of primary studies chosen for the review was built into the inclusion criteria. To be included, researchers needed to include findings that demonstrated that participants were situated in their contextual experiences. By including the words of their participants researcher interpretations could be grounded in these experiences and make comparisons across experiences more valid and meaningful. While it is understood that the words of participants are spoken through the perspective of the primary researchers, it still has the potential to provide a check against the end conclusions drawn from the findings. As a further check of quality all final sources underwent peer review before publication including the one dissertation source. Furthermore, all reports for reviewed for consistency in purpose, methods and conclusions.

Data Analysis Stage

Consistent with the requirements of a review, all data was ordered, coded, categorized and summarized. This process was completed separately on both the findings and discussions/conclusions of each report included in the review. A constant comparison method was used that examined extracted data for the discovery of themes and relationships (Patton, 2002).The process of analysis proceeds with data reduction, data display, data comparison, conclusion drawing, and verification.

Data reduction

The data reduction phase of analysis involves the determination of an overall classification system. For study findings, a total of 166 unique statements were systematically extracted by isolating quotations supplied by the author. Sources were separated by whether inquiries were done retrospectively or prospectively when examining pregnancy experiences. To begin with data was sorted by categories initially determined by classifications found in the literature related to pregnancy intention. This included findings that appeared to address notions of wantedness, planning, or happiness or none of these. A method of data display assisted to further refine the process.

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Table 3. Summary of final data sources for the integrative review

Citation/Year	Journal	Study Purpose	Population	Methods
(Custer, 1993)	Adolescence	Analyze data on the meaning of the phenomena related to adoption consideration by unmarried pregnant adolescents	N=21 unmarried Caucasian adolescents in the last trimester of pregnancy and significant others	Qualitative interviews; Phenomenological perspective
(Higgins, Hirsch, & Trussell, 2008)	Perspectives on Sexual and Reproductive Health	Explore the degree in which women and men find pleasure in the possibility of a pregnancy how different needs are met and the link to ambivalence, contraceptive use and unintended pregnancy	N=24 women and 12 men of diverse financial and cultural backgrounds	Qualitative interviews; ethnographic approach
(Iuliano, Speizer, Santelli, & Kendall, 2006)	American Journal of Health Behavior	Exploring reasons of contraceptive use and non-use	Women between 20-40 part of larger New Orleans study	Interviews
(Jones, Frohwirth, & Moore, 2008)	Journal of Family Issues	Provide insights into the relationship between motherhood and abortion	N=38 English-speaking women obtaining abortions or having an abortion follow-up visit at one of four US clinics	Qualitative interviews
(Keating-Lefler & Wilson, 2004)	Journal of Nursing Scholarship	Understand the experience of becoming a mother for single, unpartnered mothers on Medicaid and the processes they use to manage any problems	N=20 women age 19-35 eligible for Medicaid	Qualitative Interviews
(Spear, 2004)	Public Health Nursing	Explore adolescents' lived experiences of pregnancy	N=8 females age 13-19	Qualitative interviews
(Finer, Frohwirth, Dauphinee, Singh, & Moore, 2005)	Perspectives on Sexual and Reproductive Health	Explore women's reasons for having abortions	N=1209 survey respondents and 38 of these in interview portion of study	Open-ended responses to survey questions and qualitative interviews

Table 3. Continued

(Andrews & Boyle, 2003)	Health Car for Women International	Generate an interpretive theory about how African American Adolescents experience unplanned pregnancy and elective abortion	N=12 pregnant adolescents seeking abortion	Qualitative interviews
(Fischer, Stanford, Jameson, & DeWitt, 1999)	The Journal of Family Practice	Define how women's intention status of current, past, and hypothetical pregnancies	N=18 women seeking prenatal care, pregnancy testing, or abortion	Qualitative interviews
(Shanok & Miller, 2007)	Psychology of Women Quarterly	Gain an understanding of multiple aspects of the teen's lives relating to their pregnancies and life experiences	N=80 mothers age 13-19 attending a public school serving pregnant and parenting teenagers in an impoverished urban area	Qualitative interviews
(Stanford, Hobbs, Jameson, DeWitt, & Fischer, 2000)	Maternal and Child Health Journal	Explore how women conceptualize the intention status of their own pregnancies	N=63 women who were pregnant or had already given birth	Qualitative interviews
(Tennyson, 1988)	Maternal Child Nursing Journal	Capture the process of surrendering an infant for adoption for the person experiencing it	N=1 woman	Case Study, qualitative interview
(Sassler, Miller, & Favinger, 2009)	Journal of Family Issues	Explore cohabitators views of conception, prevention, and the timing and context of parenthood	N=30 couples in Columbus Ohio	Qualitative interviews
(Moos, Petersen, Meadows, Melvin, & Spitz, 1997)	Women's Health Issues	Gain contemporary insights into the perspectives and experiences of the largest subset of women experiencing pregnancy-those continuing the gestations, irrespective of planning status	N=29 pregnant women	Focus groups
(Tansey, 1991)	Unpublished Dissertation	Determine how the adolescent understands, makes decisions about and deals with her pregnancy experience	N=10 young pregnant women age 15-17	Qualitative Interviews

A constant comparison method was used that examined extracted data for the discovery of themes and relationships (Patton, 2002).The process of analysis proceeds with data reduction, data display, data comparison, conclusion drawing, and verification.

Data reduction

The data reduction phase of analysis involves the determination of an overall classification system. For study findings, a total of 166 unique statements were systematically extracted by isolating quotations supplied by the author. Sources were separated by whether inquiries were done retrospectively or prospectively when examining pregnancy experiences. To begin with data was sorted by categories initially determined by classifications found in the literature related to pregnancy intention. This included findings that appeared to address notions of wantedness, planning, or happiness or none of these. A method of data display assisted to further refine the process.

A similar process was applied to study conclusions keeping in mind key themes and sorting concepts accordingly. Due to that conclusions were presented more globally by the authors, this section was not able to be specifically sorted by retrospective and prospective views. Rather, overall perceptions were compared with in reports to findings and then these same comparisons were made across reports. The across case similarities and differences were ultimately sorted with the assistance of a data display in the form of matrices.

Data display and data comparison

Extracted data from findings was put in a table and sorted according to initial categories. The visual display of data facilitated refinements that were made in consideration that some findings were not mutually exclusive to one category or required a new category not initially considered. Extracted data from the selected literature findings were found to cluster under six major themes: 1) Expectancy and Planning, 2) Wantedness, 3) Feasibility, 4) Happiness, 5) Responsibility, and 6) Readiness and Timeliness. Table 4 describes the number of data excerpts from the findings coded under a particular theme and separated by whether a woman was

looking retrospectively at a pregnancy that had already occurred or prospectively at some hypothetical or future pregnancy experience.

Data comparison for the research conclusions included grouping particular concepts together with particular attention to how interpretations of findings data expanded current concepts of pregnancy intention. Furthermore, links or relationships to other concepts were made and clustered accordingly to create more meaningful and higher order understandings of salient concepts.

Table 4. Data themes excerpted from primary sources

Theme	Retrospective N=119	Prospective N=47	Total N=166 statements
Expectancy and Planning	57	8	65
Wantedness	34	10	44
Feasibility	20	14	34
Happiness	16	6	22
Readiness and Timeliness	12	10	22
Responsibility	9	8	17

Conclusion drawing and verification

The final stage of analysis is conclusion drawing and verification. In this stage the clusters and themes are assembled into higher levels of abstraction. During this stage conclusions are compared back to the primary source data as a whole to assure accuracy and confirmability (Miles & Huberman, 1994). To ensure attendance to all the data both similarities in findings as well as contradictions are considered. What follows here is a presentation of the review findings. First, an overview of the sources chosen to complete the review is presented. Next, Review findings are organized and presented by overall themes with specific examples and

a synthesis of research findings, all followed by a synthesis of conclusions. Lastly, the final summary attempts to tie all components together.

Overview of primary sources

The articles chosen for the review had unique authors in the first position; however 7 researchers were noted to have shared authorship on two publications each. Publication dates for the articles ranged from 1988-2009. Articles were found to be cross-disciplinary with representation from journals in the fields of public health, reproductive health, women's health, psychology, social work, and medicine. While each study purpose was ultimately unique, several studies explored similar concepts albeit from varying perspectives. Major concepts explored included six studies that examined the lived experience of pregnancy, seven studies that considered the outcome of pregnancy that included motherhood, adoption, and abortion, three studies that investigated pregnancy prevention, two that specifically studied the intention status, and one that looked at the pleasure of pregnancy. Ages of women in the respective studies ranged from 13-40. Consistent with the inclusion criteria all studies included some qualitative inquiry using a variety of phenomenological, ethnographic, case study, interview, survey, and focus group methods to collect data. As mentioned previously, findings and conclusions extracted from the identified literature were found to cluster under six major themes: 1) Expectancy and Planning, 2) Wantedness, 3) Feasibility, 4) Happiness, 5) Responsibility, and 6) Readiness and Timeliness.

Expectancy and Planning

Themes relating to expectancy and planning were ultimately combined as sentiments of both were often discussed simultaneously. Both concepts were described looking both retrospectively and prospectively at pregnancies or potential pregnancies in a total of 65 statements located within the research findings. Within these themes were five discrete groups that could be used to cluster analogous perceptions and included unexpected and unplanned pregnancies, expected and planned pregnancies, unexpected but planned pregnancies, expected

but unplanned pregnancies, and planning and expectancy not applicable to pregnancy. However, not all themes were identified in both groups of retrospective views and prospective outlooks. As will be a similar presentation for all themes, descriptions of all groups are presented first by retrospective views or perceptions of pregnancies that had already occurred, then by prospective outlooks of future, potential, or hypothetical pregnancies.

Retrospective

Perceptions of expectancy and planning were the most commonly identified perceptions in data that looked retrospectively at their pregnancies summing 57 instances. The largest cluster was perceptions of pregnancies that were neither expected nor planned.

Unexpected and unplanned pregnancy

A total of 45 statements were identified to represent perceptions of previous pregnancies that were not considered planned or expected. This was represented by sentiments of surprise or blatant statements regarding a lack of expectation or planning. In 18 statements, a pregnancy was so unexpected that pregnancy symptoms were often denied, attributed to other causes, or confirmed well into the pregnancy by a physician or observation of physical changes by family members. As examples:

> "[At 6 months gestation when a doctor confirmed the pregnancy she expressed] "shock" (Tansey, 1991).
>
> "I was throwing up a lot. And then I said maybe I have a tapeworm, maybe it will go away". (Tansey, 1991)
>
> "We were walking home from school one day and he [boyfriend] came up behind me and touched my stomach, and said, you're pregnant. You're getting fat. He knew before I did." (Tansey, 1991)

In another 9 quotations, a pregnancy was unexpected despite being unprevented due to a perceived lack of vulnerability to pregnancy. To illustrate:

> "But I'd just say…I'm not going to get…pregnant. I just thought it wouldn't happen to me….it seems like that's what I did." (Tansey, 1991)
>
> "I'd think about it [preventing pregnancy] but I didn't do anything about it. I didn't think I'd really get pregnant." (Tansey, 1991)

In 4 quotations, a pregnancy was unplanned due to efforts at prevention. For example, women stated:

> "I had my tubes tied for 4 years [and got pregnant]" (Moos, Petersen, Meadows, Melvin, & Spitz, 1997).
>
> "I got pregnant on the pill" (Moos, Petersen, Meadows, Melvin, & Spitz, 1997).

Expected and planned pregnancy

Planning and expected a pregnancy was only expressed in a quotation by one woman who had already experienced a child. She talked about a friend buying ovulation kits to assist in timing conception because her friend thought "we should have a child" (Moos et al., 1997).

Expected but unplanned pregnancy

Two statements discussed pregnancies that were expected but unplanned although these were from very different perspectives. One woman's quotation shared that a discussion with her boyfriend suggested that a pregnancy was expected but at the time of conception was not planned.

> "Me and my boyfriend talked about getting pregnant. I wouldn't say it I planned it (pregnancy), but I did say I wanted one (baby) when I was 17. (Spear, 2004)

Another woman's statement addressed the concept of pregnancy planning within the context of privilege suggesting that planning was tied to social and economic position. For those without privilege it was an event that happened and was dealt with.

> "Black, Spanish people don't plan it all out; like we don't go to Lamaze class. We'll get through it. White people, they'll go practice." (Shanok & Miller, 2007)

Unexpected but planned pregnancy

Four women were presented as discussing pregnancies that were not expected but were associated with planning. One statement described a planned pregnancy as unexpected in relation to time.

> "We planned it, we weren't expecting it quite so soon".(Stanford, Hobbs, Jameson, DeWitt, & Fischer, 2000)

Three women's statements considered pregnancy planning to be something that occurred post-conception.

> After she found out she had conceived she got everything "organized and in order". (Moos et al., 1997)

Expectancy and Planning not applicable to pregnancy

Perspectives presented in three cases appeared to dissociate expectancy and planning from pregnancy suggesting that childbearing was a neutral occurrence.

> "It [pregnancy] more or less just happened" (Moos et al., 1997).

> "So it's almost like this ritual that you have to go through. You have to be shunned and shamed, and in the end, the baby is adored and you're welcomed into the matriarchy" (Shanok & Miller, 2007).(Petersen & Moos, 1997)

Prospective

Unlike the retrospective views, the 10 perceptions were presented that prospectively discussed pregnancies that were encompassed in two of the themes; planned and expected and unplanned and expected. The two statements composing the theme of unexpected and unplanned were not unlike perceptions of women who had experienced pregnancies. One woman's reflection suggested she did not expect or plan a pregnancy despite not current using a method of pregnancy prevention.

> ".. When we do have sex, we're careful as you can be….I was [using birth control pills] and I stopped for really no reason, 'cause I'm bad about taking pills, too" (Sassler, Miller, & Favinger, 2009).

> Another quotation presented a hypothetical pregnancy in that she would "deal with it" (Sassler et al., 2009).

Six perceptions discussed expected and planned pregnancies, within this theme however, these concepts took on varying perspectives. Three discussed planning in terms of financial considerations in planning for care of a child.

> "It [a planned pregnancy] is when the two of you sit down together….and plan it out financially….how [you] want to raise it…sit

> down and think about things before [you] actually get into that situation." (Moos et al., 1997)
>
> "If I were planning a pregnancy, I would take my paycheck and split it and start saving to buy stuff and probably go ahead and give him one of those accounts in the bank." (Moos et al., 1997)

Two women were presented as having views that looked forward at pregnancies and connected planning to a desire to have a child. One woman thought that a woman planning to conceive, "really wanted to be pregnant" and another suggested that a planned pregnancy would serve an emotional purpose. This woman might be "looking for a way out or a change of pace….or someone to love her" (Moos et al., 1997). One statement provided a unique perspective, portraying pregnancy planning as a negative experience. She observed a friend attempting to plan a pregnancy and "she was getting so upset, worrying about if something was wrong with her or something was wrong with him. "It was a lot of worry" (Moos et al., 1997).

In terms of expectancy and planning, concepts were often intertwined or in contrast but often differentiated within classifications by unique perceptions and experiences. Women looking back on pregnancies most often represented views on pregnancies that were not planned or expected. This was in contrast to women who looked forward to potential pregnancies that would be both planned and expected. Retrospective views also considered the degree in which pregnancy was prevented or not prevented, and how planned or expected did not always share the same meaning. Women who experienced pregnancy tied the concepts of planning and expectancy to time. A pregnancy might still be planned even if the actions perceived as planning occurred after conception or if planning occurred but conception did not occur as expected. Planning and expectancy for women looking at prospective pregnancies tied planning to financial considerations and care of a child or a desire to be pregnant. Two perspectives, each unique but nonetheless salient suggested that for women subject to racial or economic oppression could not see planning a pregnancy in the same way as a woman of privilege and for some women planning was a negative experience fraught with stress and worry.

Wantedness

Desire for pregnancy was often expressed in terms of wantedness. Concepts of wantedness were expressed 44 times looking both back and forward to previous or potential pregnancies. Wantedness was tied to relationships, emotions, and personal factors.

Retrospective

A total of 34 quotations spoke to women's desire for a prior pregnancy. With the exception of four cases, wantedness could be separated by pregnancies that were either unwanted or wanted and demonstrated in the following descriptions. Women who wanted their pregnancies often framed desire for pregnancy in terms of other person's feelings about the pregnancy or in regards to their own emotional response. The cases in exception presented ambiguous views on wantedness.

Wanted Pregnancy

Desire for a pregnancy was described in 13 occasions of women reflecting upon their prior pregnancy experience. For 10 women wantedness was framed within the context of other relationships that included their partners, family, or God. Of these, six expressed a pregnancy was a connection to their partner or an opportunity to deepen that connection. For example:

> "Sometimes when I was having sex with him, I would just kind of lose my mind a little bit and want to have a baby with him so badly. It was like I can't get close enough to him or connected enough with him, and conceiving a child would be the closest we could get". (Higgins, Hirsch, & Trussell, 2008)

Three experiences expressed having to balance personally wanting a pregnancy with the perceptions of others not wanting the pregnancy. As one example:

> "I told them…they [parents] were mad at me and they wanted me to get an abortion….that I was too young, that it would mess up my life. But I just didn't want an abortion." (Tansey, 1991)

Another perspective represented an almost fateful view of her pregnancy and that her wantedness became clear only after conception.

> "…so I look at it [as] a gift from god, just something I gotta do and I want to do." (Moos, 2003)

Two experiences addressed wantedness in relation to planning and emotional response to pregnancies. One described happiness with wantedness and planning but explained unexpected pregnancy as a "pleasant surprise" and that she and her partner were "excited" (Stanford et al., 2000). Another experience was emotionally ambiguous about wantedness at getting pregnant.

> "I have mixed emotions, we had tried, and so I guess in a way it was planned…I had wanted to get pregnant. We talked about it a lot to get me pregnant…I would say to him [husband] I want a baby, I want a baby" (Stanford et al., 2000).

Unwanted Pregnancy

In 19 experiences thoughts about prior pregnancies were described as an unwanted experience. There were women who viewed their pregnancies as wanted, but often others' opinions provided influence on pregnancy desire. Twelve descriptions noted partner in conception or family influence on pregnancy wantedness that ultimately impact decision making regarding the outcome of the pregnancy. When women sought abortions their experiences included the perspectives of partners not wanting the pregnancies, denied paternity, or involved sexual assault. Pregnancies described as unwanted by parents or hiding pregnancy from persons determined that the pregnancy outcome would end in abortion. One experience reflected an unwanted pregnancy that did not find support for ending her pregnancy.

> "He (father of the baby) wanted an abortion. I said you know my mom is not going to let me get one and he said ask your mom and whatever she says we'll do. So I knew I was stuck with it (pregnancy) when he said that." (Spear, 2004)

For another woman, although she considered that her partner might have an opposite sentiment regarding wantedness; this did not change her own pregnancy desire.

> "Even if he had wanted me to have it, I wouldn't. And that's just that. I don't want another baby. I don't want a baby. I don't" (Fischer, Stanford, Jameson, & DeWitt, 1999).

Wanted and Unwanted Pregnancy

Women's experiences that expressed desire and wantedness for pregnancies that had already occurred, included complex combinations of wantedness and lack of pregnancy desire that could not be relegated to an exclusive category. Like previous descriptions, perceptions were influenced by relationships and context in which women lived. One woman's experience described her partner in conception leaving the relationship after learning she was pregnant. She received no support from her family for the current pregnancy or a prior pregnancy. She considered the feasibility of this pregnancy concluding:

> "I can't really afford to raise two children on my own. I know he needs a home with a loving father right now, and I can't provide that".

Her perspective considered weighing her pregnancy options stating "I considered abortion but I didn't want to be put through that". Her conclusion was presented as putting her baby up for adoption and while the child was not unwanted, she saw this as changing.

> "Once I go into labor and once I hear the baby crying, I'll want to keep it. It's a scary feeling to know that you carry a child for 9 months and you spend a couple hours with it, and then you'll never be able to see it again for the rest of your life."

Another perspective discussed pregnancy wantedness citing, "I had almost gotten used to the idea of making a baby with him. It was something I wanted to do with him," but adding it was not wanted currently or "just not right then" (Higgins et al., 2008).

Prospective

Looking forward to potential pregnancies, 10 experiences considered a desire to be pregnant or have children. These could be divided and classified exclusively as wanting or not wanting pregnancies.

Wanted Pregnancy

Two experiences described future or potential pregnancies that were closely linked to planning and would ideally be preceded by a series of events. One statement read:

> "It would be totally ideal if it could be, well marriage, marriage one, actually be married, then finances, then school….At that point, I would want to start having children" (Sassler et al., 2009).

Unwanted Pregnancy

Four perspectives considered a potential pregnancy as unwanted. One woman's statement was particularly vehement stating, "I'd be pissed! 'Cause I pay every month for my little pill and I take it on time, and I really don't want to give birth" (Sassler et al., 2009). Likewise, another woman's quote shared both she and her partner would be "devastated" (Sassler et al., 2009) by a pregnancy at this time.

Simultaneous Wanted and Unwanted Pregnancy

Also unlike retrospective pregnancy experiences, views looking forward had more ambiguity in perceptions of pregnancy and desire for children. Four discussed wanting pregnancy at some time. Three suggested that at the current time the pregnancy would be unwanted.

> "I would want to have more kids in the future but just now now…when I am stable and know what I want out of life" (Jones, Frohwirth, & Moore, 2008).

One outlook presented a unique perspective in that the wantedness would be attributable to a higher power.

> "Well, if God wanted me to have a child I would be pregnant right now" (Moos et al., 1997).

Experiences considering wantedness of a pregnancy were often influenced by others' desire for a pregnancy or child. Whether wanted currently or at some future time, partners, family, and God impacted the wantedness of a pregnancy that had already occurred. Desire for potential pregnancies was framed within planning and feasibility. Both groups contained perceptions that could not be exclusively classified as wanted or unwanted as wantedness was tied to time, life events, and contextual issues.

Feasibility

Feasibility was the theme was noted 34 times to represent how a pregnancy was assessed in terms of financial circumstances, relationship issues, and pregnancy and child care considerations. Feasibility for a pregnancy was considered for individuals as well as for others in women's lives and potential impact on these others. All of these aspects were noted both in the 20 experiences reflecting back and 14 looking forward at pregnancies.

Retrospective

Women's reflections on pregnancies that had already occurred considered financial needs of a child after birth, ability for a partner to contribute to a child's needs, impact on others, and other personal considerations. Nine experiences noted the financial strain caused by the birth of a child.

> "I can't afford a baby now." (Finer, Frohwirth, Dauphinee, Singh, & Moore, 2005)

> "I couldn't give them the doctor's appointments they need. I couldn't buy all the clothes and food they need. I couldn't support them." (Sassler et al., 2009)

Also related, three views noted interruptions in employment and educational pursuits. Five experiences noted that relationships with the partner in conception a pregnancy at this time was not feasible. Partners suffered from personal issues such as alcoholism or imprisonment, and one women simply stated that her and her partner's relationship "just has not been good" (Sassler et al., 2009). Feasible was discussed as impossible in one case for multiple reasons.

> "It's hard taking care of just one kid, let alone two, when you're going to school full time and working" (Sassler et al., 2009).

Prospective

Prospectively outlooks were similar in women who had already experienced pregnancies taking into account financial concerns, relationships issues, and impact on others. Unlike retrospective views, current children in women's care were often considered either in isolation alone or in combination with other concerns nine times.

> "I can handle another child...It's not as far as having another child…but it's really selfish to do that…When you have somebody else to consider, I'm not really, I'm not ready to gamble with my other babies" (Jones et al., 2008)

Seven women cited money as a reason that a pregnancy would not currently be feasible.

> "You need to make sure you have enough money…and not just when the baby is little but growing and going to school and going to college" (Moos et al., 1997).

Like the retrospective experiences, relationships often impacted feasibility. Three women's quotations cited relationship concerns when considering a prospective pregnancy.

> "I can't get him to come visit them for a couple of hours….he didn't really have room in his life for another child, I felt like this child would go through the same thing." (Jones et al., 2008)

Feasibility characterized how a pregnancy was assessed in terms of financial circumstances, relationship issues, and collateral impact for women looking at their pregnancy experiences and considering potential pregnancies. Financial concerns were expressed within experiences of past pregnancies and were a critical factor in determining pregnancy outcome. The nine experiences noting this concern ultimate chose to end their pregnancies in abortion. Forward point of views cited financial security as a precursor for a pregnancy. For both groups, impaired relationships with partners in conception were barriers to getting pregnancy or carrying a pregnancy to term. All perceptions considered financial and emotional strain on their families and existing children and how this impacted a real or potential pregnancy.

Happiness

The theme of pregnancy happiness was found to describe the pregnancy experience for 21 times. Experiences looking back on a pregnancy noted feelings surrounding the pregnancy. The views of women looking forward considered potential emotional reactions to a hypothetical pregnancy. Pregnancy happiness was divided into three classifications that included as pregnancy happiness, pregnancy unhappiness, and emotional distance.

Retrospective

Being Happy

Eleven points of view expressed happiness with pregnancy or the process of becoming happy after confirmation of a pregnancy. In two of the cases presented, women expressed happiness despite the pregnancy being unexpected or unplanned.

> "No, it wasn't planned but after I found out, I was happy". (Moos et al., 1997)

> "We planned it, we weren't expecting it quite so soon, but we were hoping for it, so it came as a very pleasant surprise, we were very excited." (Stanford et al., 2000)

Being happy about the pregnancy was often symbolic of a relationship with a partner which contributed to feelings of happiness.

> "It seemed amazing to me that we could create this life together…It was romantic to imagine building a permanent life with him." (Higgins et al., 2008)

> "This is his child…[we were in love with each other] so you know that's our baby." (Higgins et al., 2008)

One experienced depicted a woman's happiness despite her mother not sharing her joy.

> "When [my mother] found out I was pregnant she was horrified of course," but part of me was kind of thrilled about [the pregnancy], almost in awe of it" (Higgins et al., 2008).

Unhappiness

Five quotations discussed unhappiness about experienced pregnancies. In all cases the lack of happiness with the pregnancy was framed by equally unhappy feelings held by people within the women's lives. One citation expressed happiness tied to financial concerns and partner's happiness.

> [I would be happy about this pregnancy if] I was financially stable. If I knew the other party that I was with that got me here, you know, was also happy about it" (Fischer et al., 1999).

Unlike influences noted in previous themes, three provided experiences discussed attitudes of friends in relation to feelings of unhappiness in terms of embarrassment and anger.

> "I was getting a little big. They [friends] would ask me if I was pregnant and I'd just tell them to get off my back" (Tansey, 1991).

> "I was kind of embarrassed to tell my friends (about pregnancy) 'cause we're told how to prevent pregnancy in our classes at school." (Spear, 2004)

Emotional distance

Happiness with pregnancy was ambiguous and suggested some emotional distancing from the event in two instances. It cannot be determined if this was a means of coping with a lack of happiness regarding the pregnancy.

> [My unplanned pregnancy is] "Bringing a new life into the world" (Moos et al., 1997).

> "I believe all things happen for a reason and so I'm dealing with it [unintended pregnancy]" (Moos et al., 1997).

Prospective

Unlike experiences looking retrospectively at pregnancies, all eight examples that discussed emotional reactions about a prospective pregnancy spoke negatively about the thoughts of a pregnancy. In all outlooks feelings were in relation to a pregnancy that was unplanned and unexpected.

> Regarding an unintended pregnancy, "I would be an emotional wreck". (Sassler et al., 2009)

> [If I became pregnant I would] "Freak the hell out! I would freak out…I would be mentally obliterated." (Sassler et al., 2009)

Pregnancy happiness was quite different in pregnancy experiences looking prospectively at potential pregnancies. Backward outlooks were found to be happy or unhappy often in relation to the happiness of other important persons in their lives. Unlike other themes, the role of friends was prominent in discussions of pregnancy unhappiness. All forward associated perspective presented unplanned and unexpected pregnancies as unhappiness.

Readiness and Timeliness

The themes of readiness and timeliness were ultimately combined due to the observation that readiness for a pregnancy was often determined by a need for a chronology of events. A total of 22 discussions addressed being ready for a child or pregnancy and/or a relationship in relation to time or lack of readiness. Themes of readiness and timeliness were further divided into sub classifications of getting ready, not ready, now I'm ready and one other category.

Retrospective

Readiness when looking back at pregnancies was discussed 12 times. Three cases described readiness as preparation for the upcoming pregnancy.

> "I got ready to have his baby." (Higgins et al., 2008)

> "Now I've got my baby shower planned and I've planned who is going to be in the delivery room and all that stuff" (Moos et al., 1997).

Seven instances described women who were not ready for a pregnancy. Of these, four attributed lack of readiness to age or maturity. Others suggested that readiness would be change that they were not yet prepared for.

> "He was like, "You not killin' my baby or I'll kill you, I'll take you to court" and all this junk. I was like, ""I ain't ready to have a baby, I wanna go straight to college….you can't take me to court. No judge is gonna make me keep my baby at 17 if I don't want to. That is *my* decision" (Shanok & Miller, 2007).

Two cases were classified under the sub-theme of "Now I'm Ready" as quotations suggested that for them readiness was a process that occurred in relation to time.

> "I wasn't ready at the time but I'm OK with it now. I'm kind of looking forward to it" (Moos et al., 1997).

> [Later in the pregnancy she got used to the idea of being pregnant] "things settled down" (Tansey, 1991).

Prospective

Unlike examples looking retrospectively, readiness was not discussed in terms of preparation. The majority of the 10 illustrations discussing readiness expressed a lack of

readiness. Eight perceptions were of "not ready" mostly due to financial considerations but also discussed age, maturity, and wanting to be married prior to bearing children.

For thirteen cases looking retrospectively at a pregnancy, readiness was a theme and nine of these were tied to readiness in relation to time.

> "Both my mom and my mother-in-law [asked], 'When are you and Philip getting married and having a baby?' They were ready and we weren't even married yet" (Moos et al., 1997).

> "It would be totally ideal if it could be, well marriage, marriage one, actually be married, then finances, then school….At that point, I would want to start having children" (Sassler et al., 2009).

One instance looking forward at pregnancy presented a unique perspective of readiness. It stated:

> [Pregnancy is] "instinct….You just know when you are ready. Just the way you feel [when] you see other people with their children" (Moos et al., 1997).

Within the theme of readiness and timeliness, women's representations that looked back at pregnancy experiences described readiness in terms of preparation or a process that occurred in relation to time. Lack of readiness was attributed to age and maturity or wanting to have a specific life event prior to experiencing pregnancy such as marriage. These latter themes were also found in cases that considered theoretical pregnancies in addition to a lack of readiness due to financial concerns. One quotation presented a unique perspective considering readiness not as parallel with an individual agency but as something that occurs by "instinct".

Responsibility

The concept of responsibility was noted 17 times and collected under the themes of my responsibility, taking responsibility, making responsibility, and someone else's responsibility. Responsibility was expressed as being responsible, blame, control, and maturity. Almost all cases reflected on personal responsibility when faced with a pregnancy, real or hypothetical.

Retrospective

Views looking retrospectively identified responsibility in not preventing pregnancy or in relation to care of a child a total of nine times. One quote presented a woman saying she didn't "feel mature enough to raise child" (Finer et al., 2005). Another case noted that pregnancy changed the perspective on personal responsibility.

> "I used to blame stuff on other people. When I actually had to admit this was my fault and I gotta correct it, everything started coming to me" (Andrews & Boyle, 2003).

Six instances identified how pregnancy experiences were the catalyst for responsibility.

> "…sometimes that extra responsibility can make you a woman, it'll make you do things that you wouldn't ordinarily do. It'll make you grow up…You don't do as wild and crazy things as you used to ".(Moos et al., 1997)

> "I guess that it was God's way of fixing a bad situation, Instead of us keeping on sinning, He just said 'Well you'll have a baby so you can get married now and you won't have to keep doing that.'" (Moos et al., 1997)

Prospective

In contrast to cases of women discussing pregnancies retrospectively, four of eight statements expressed responsibility in terms of what a/another child added and considered a strain on financial and emotional resources.

> "I am 19 and I have 3 kids already…and financially and mentally, I can't stand it now…so the added responsibility is like, hard. I wouldn't be able to handle it" (Jones et al., 2008).

Unique to the perceptions looking forward to potential pregnancies, two discussed the lack of responsibility in the absence of their partners in conception.

> "I don't think Josh has himself together enough that he could be able to teach somebody growing up what their responsibilities need to be and what they need to do with their life." (Sassler et al., 2009)

> I wouldn't know about Robert really sticking around for the whole entire pregnancy."(Sassler et al., 2009).

Like perspectives that looked retrospectively at pregnancies, two cases suggested that caring for or preventing a pregnancy that wasn't wanted required some personal responsibility.

> "It's your responsibility to take care of situations you get yourself into. If you don't want the kid, why were you messing around?" (Custer, 1993)
>
> [Explaining unintended pregnancy] "I think if God is going to give you a child, he's telling you that you need to settle down and quit running around and doing this or that, you need to show responsibility, its time you grew up" (Moos et al., 1997).

Concepts of responsibility were described as personal responsibility, taking responsibility, making responsibility, or someone else's responsibility. While both groups of presented perceptions included personal responsibility, cases looking back at their pregnancies considered how a pregnancy created a need for taking responsibility. In contrast, instances that looked forward at potential pregnancies considered the responsibility of a pregnancy in terms of adding burden and not only examined personal responsibility but also that of the partner in conception.

Summary of source conclusions

In most cases, the authors were able to find parallels with current conventions of pregnancy intention. Women's experiences reflected pregnancies that were certainly wanted and unwanted, planned and unplanned, expected and unexpected, and connotated happiness and unhappiness. However all discussion concluded that conventional labels were an ill fit in some way. Reasons for this deduction were well supported and appeared to cluster around four major points: 1) current labels attempt to classify the outcome while ignoring the process, 2) some proxies used for pregnancy intention such as time and use of birth control miss the mark, 3) current labels are too simple for the higher level concepts expressed in women's experiences, 4) labels fail to account for contextual influences at play within women's experiences.

Inadequacy of dichotomies

Five sources provided arguments in support of inadequacies of dichotomous conceptualizations of planning, wanting, expectation, or happiness (Fischer et al., 1999; Moos et al., 1997; Shanok & Miller, 2007; Spear, 2004; Stanford et al., 2000). Research conclusions argued that current labels lack heterogeneity and instead convey a strict presence or absence of

planning, wanting, expectation, happiness ignoring experiences that exist in the middle or on the margins of these notions (Fischer et al., 1999).

What may hold much more importance is the process of adaptation to a pregnancy that while may not have been initially planned or expected but was ultimately wanted (Shanok & Miller, 2007). The focus should be on the ability to adjust positively and should supersede any judgment of intention (Fischer et al., 1999; Moos et al., 1997; Shanok & Miller, 2007; Spear, 2004; Stanford et al., 2000). Furthermore this view fails to recognize that positive consequences occur from unexpected pregnancies just as negative consequences happen as a result of intended and planned pregnancies (Moos et al., 1997; Shanok & Miller, 2007; Spear, 2004; Stanford et al., 2000). It is even possible that possible that some women who neither planned nor expected a pregnancy that the social and psychological rewards are greater (Fischer et al., 1999; Moos et al., 1997).

Accepted proxies may be inadequate

Five primary sources suggested that proxies such as time and use of birth control may not be valid indicators of pregnancy intention (Higgins et al., 2008; Moos et al., 1997; Sassler et al., 2009; Spear, 2004; Stanford et al., 2000). The National Survey of Family Growth (NSFG) uses the concept of time to distinguish between unintended and intended pregnancy. Basing intention on perceptions of pregnancy occurring at some appropriate period in time may not apply when women attempt to situate their pregnancy in events that are not time limited. For example, important factors that are a consideration in pregnancy intention such as desire for a family, family and partner support, and personal beliefs about the morality of abortion have little relation to time (Stanford et al., 2000).

Along the same lines, contraception cannot necessarily be an indicator for pregnancy expectedness or planning. The use of contraception may not mean a pregnancy is unexpected or unintended the same as lack of access to contraception may not be deterrent to pregnancy prevention (Higgins et al., 2008; Moos et al., 1997; Sassler et al., 2009; Spear, 2004) The reason

for this may be that intention and behavior are mediated by other factors influencing the ability to act totally aside from wanting to prevent a pregnancy or failing to prevent a pregnancy (Higgins et al., 2008; Moos et al., 1997; Spear, 2004; Stanford et al., 2000).

Current labels do not allow for conceptual complexity

Similarly to the short fall of perceiving concepts of pregnancy intention in dichotomy, 11 sources suggested that concepts may also be too simplistic to be inclusive of higher level concepts expressed in women's pregnancy experiences (Andrews & Boyle, 2003; Custer, 1993; Finer et al., 2005; Fischer et al., 1999; Higgins et al., 2008; Jones et al., 2008; Keating-Lefler & Wilson, 2004; Stanford et al., 2000; Tansey, 199; Tennyson, 1988). The literature often purports that pregnancies that are unintended most often result in termination (Boonstra, 2002; Weismiller, 2004). In reality, planning, wantedness, or expectedness of a pregnancy may be irrelevant when women consider their options for pregnancy outcomes in terms of childbirth or abortion. What is not elucidated in the literature is how some women see a pregnancy as an opportunity (Custer, 1993; Higgins et al., 2008; Jones et al., 2008; Shanok & Miller, 2007; Spear, 2004; Tennyson, 1988). Higher levels of meaning are found in pregnancies as women consider the role of motherhood, its symbol of love and intimacy, or an opportunity for an enhanced life experience (Custer, 1993; Higgins et al., 2008; Jones et al., 2008; Shanok & Miller, 2007; Tennyson, 1988). In contrast, women may see a pregnancy as a symbol of loss which is often much more emotionally wrought that simply being something unwanted. Considerations for financial security, threats to partner relationships, and loss of family support are most often cited as having strong influence in decision making (Andrews & Boyle, 2003; Custer, 1993; Finer et al., 2005; Keating-Lefler & Wilson, 2004).

Contextual influences are not accounted for

The category in which all 15 source articles suggested is that current conventions of pregnancy intention fail to account for contextual influences that likely have large impacts on decision making and behavior. Decisions about fertility or pregnancy outcomes were rarely made

in isolation of considerations of others opinions or perceptions. This is most often mentioned in terms of family and social relationships and larger societal forces. In many areas perception of partner beliefs and support largely influence fertility behavior and pregnancy outcomes (Fischer et al., 1999; Jones et al., 2008; Sassler et al., 2009; Shanok & Miller, 2007; Spear, 2004; Stanford et al., 2000). Mothers often influenced pregnancy outcome decision making (Jones et al., 2008; Shanok & Miller, 2007; Spear, 2004). Larger forces such as social and cultural influences often define concepts of planning that are quite different than pregnancy planning in the health and social science literature (Shanok & Miller, 2007; Spear, 2004). As presented in the findings, planning for some women meant getting ready for childbirth after the discovery they were pregnant. These same influences also influence pregnancy outcome options by creating ideals of acceptability of giving a baby up for adoption (Jones et al., 2008).

Less visible but nonetheless powerful influences on behavior were also discussed. Many sources discussed the larger meaning of pregnancy labels and their irrevocable connection to woman's perceived role in society (Jones et al., 2008; Spear, 2004). Reasons women give for terminating pregnancies and perceptions of consequences for early parenting suggest an acute awareness of stigma associated with choices not favored by society in general (Iuliano, Speizer, Santelli, & Kendall, 2006; Jones et al., 2008; Shanok & Miller, 2007). Ultimately, societal guidelines that specify certain milestones be achieved prior to childbearing such as completion of education and financial security are based on middle class power and privilege leaving those that fail to follow these "rules" marginalized (Andrews & Boyle, 2003; Custer, 1993; Jones et al., 2008; Moos et al., 1997; Shanok & Miller, 2007; Spear, 2004).

Limitations of this Review

As with all reviews, there is risk of publication bias, in that the method in which the literature was searched was not adequate to capture all literature fitting the criteria of inclusion. Despite this, efforts were made to be as inclusive as possible by acquiring the assistance of a research librarian to assist in the search strategy and searching a diverse set of available

computerized databases. In addition, all results were carefully reviewed, and selected articles' reference lists scanned for additional sources meeting criteria that may have been missed initially. While it is unknown how many studies exist meeting the inclusion criteria and not included in the review, the overall strategy exceeds what is considered to be a comprehensive search combining two or three strategies (Whittemore & Knafl, 2005). A second limitation involves the potential of data to be changed as it moves through multiple interpretations. The process of interviews includes informants interpreting their world which is followed by researcher interpretations of the set of stories. The end result and a characteristic of all research papers is a double hermeneutic (Poiries & Ayres, 1997). Selection bias is also present where examples are chosen to defend and support the researcher's interpretations and aims. This is in addition to yet another interpretation made by the author of this paper to fulfill the aims of this review. Despite the complexity suggested by multiple levels of interpretation, combining findings and conclusions can bring new and valuable information to inquiries about pregnancy intention and meet the goal of broadening conceptualizations beyond wantedness, planning, expectedness, and happiness. Also concurrent with threats of selection bias are experiences with strong emotional reaction, often negative and that looked retrospectively were all overrepresented. The need for women's experiences that are less resolute affirms the need for additional exploration of pregnancy intention.

Discussion

The systematic approach applied to the creation of this review aimed to present a more comprehensive understanding of pregnancy intention in the hope it would find relevance in discussion of broadening definitions of pregnancy intention and expanding measurements that inform health interventions and policy. Themes drawn from the source findings are support the need for current definitions and mechanisms of measurement be reconceptualized. Evolution may be required before effectiveness of interventions can be optimally realized. Realizing differences between retrospective and prospective views of pregnancy experiences,

considering contextual influences, and understanding the implication of labels and constructing pregnancy as a "problem" may be places to begin this transformation.

The cumulative findings suggest that women looking back at their pregnancy experiences share commonalties with women looking forward at prospective pregnancies; however these were not always one in the same and often presented many unique nuances. The underrepresentation of prospective experiences in the literature makes this makes this an important area for future exploration. In addition to the sole value of knowing what women consider before they become pregnant, comparing prospective and retrospective experiences can strengthen validity of conceptual definitions and measures by providing a check on recall bias of reflections on past pregnancy experiences that have largely informed current conceptualizations (Sable, 1999). Understanding how women think and their influences prior to pregnancy they define as unwanted or unplanned could be significantly helpful in developing future interventions and public health initiatives.

The findings of this review strongly suggested that contextual influences are important in how women in define intention. It seems relevant that current definitions and measurement consider that pregnancy intention is complexly influences by people and the social environment in which they live. A single perspective is not likely to capture the complexity of considerations of the "right time", "contraceptive failure", or the human emotional and psychological factors that determine risk-taking and degree of intention (Sable, 1999). Several studies have demonstrated the influence of the social context on behavior (See for examples Kendall et al., 2005; Srikanthanthan & Reid, 2008; Fielding and Schaff, 2004); it seems critical that the definitions and measurement preceding behavioral interventions also consider important precursor contextual elements.

The role of power and oppression in notions of pregnancy intention was not an often reached conclusions but a serious point requiring additional discussion. Pregnancies that are labeled unintended (currently defined as unexpected, unplanned, mistimed, and unwanted) carries with it allegation and stigma that these pregnancies result in ill babies and/or strain public

resources and tax dollars. The connotation of the "problem" of unintended pregnancy points to women who experience these pregnancies as the source of the problem. The fact that some women may see pregnancy planning as only reserved for the privileged, not part of their socio-cultural context, or lies outside their intrinsic control compounds to create further marginalization. If pregnancy intention is impacted by forces of power that take control away from women, then considering them as part of the "problem", certainly adds insult to injury and a critical consideration for interventions that target pregnancy intention in women of color, the disadvantaged, the poor and underserved.

In summary, this review confirms the complexity of pregnancy intention and how women add understanding to the concept by connecting it to their experience in their social context. This is important as efforts relying on current definitions and understandings have failed to significantly increase the number of pregnancies that are expected or wanted before, during, and after conception. There is the potential that due to threats of construct validity regarding pregnancy intention that measurements of the scope, quality, and context of the related concepts are not capturing what was anticipated. This certainly impacts the evaluation of intervention programs if they missed their mark or induced changes were unable to be captured. Assessment tools such as the NSFG and PRAMS provide vast amounts of valuable information in regards to reproductive health that become the basis of interventions that strive to improve the health of individuals, communities, and populations. Any assessment of risk must move beyond labels and consider why a pregnancy was not intended, unwanted, or unplanned. Examinations of adaptation and resilience should be of equal importance if not a substitute for pathological causes of negative pregnancy outcomes. Failure to do so risks alienating women from health interventions that both they and real or future children might benefit. It needs to be considered that failure to consider complex notions of pregnancy intention makes us contributors to the "problem" of unintended pregnancy.

CHAPTER 3

EC AND UNINTENDED PREGNANCY IN COLLEGE WOMEN

Introduction and Purpose

Unintended pregnancies in the United States affect almost 3 million women each year (Finer & Henshaw, 2006; U.S. Department of Health & Human Services, 2008), the highest rate for developed nations exceeding rates in France, the Netherlands, England, and Scotland (J. Trussell & Wynn, 2008). Unintended pregnancy can be a precursor for inadequate prenatal care (Brown & Eisenberg, 1995; Gipson et al., 2008; Ketterlinus et al., 1990; Mosher & Bachrach, 1996; J. Trussell, 1988) and women are also at risk for poor pregnancy outcomes (Danel, Berg, Johnson, & Atrash, 2003a; Mohllajee et al., 2007). Both the mother and infant may suffer long term disadvantage, health, and social consequences (Joyce et al., 2000; Smith et al., 1998). For example, poor infant health can have lasting effects into adulthood and risk of lower educational attainment increases risk of living in poverty (Honein et al., 2009; Khatiwada, McLaughlin, Sum, Palma, & Council for Advancement of Adult Literacy, 2007; Potharst et al., 2011).

Women age 18-30 experience the highest rate of unintended pregnancy, however women who attend college, experience unintended pregnancy at a lower rate (Finer & Henshaw, 2006). Although college may provide some protective factor college women still experience risks that contribute to an unintended pregnancy (Corbett et al., 2006). These risks include college as a time of sexual initiation, decreased sexual inhibitions with alcohol intake, and more unprotected sex, and risk of unwanted intercourse (Abma, Driscoll, & Moore, 1998; Abma, Martinez, & Copen, 2010; Chandra, Martinez, Mosher, Abma, & Jones, 2005; Fisher, Cullen, & Turner, 2000; Hingson, Heeren, Winter, & Wechsler, 2003).

Emergency contraception (EC) is the only way to prevent a pregnancy after unprotected, unintended, or unwanted sex has occurred, reducing the chance of pregnancy by 75-89% (Cunnane et al., 2006; Grimes & Raymond, 2002; L. M. Miller & Sawyer, 2006; Strayer & Couchenour, 1998; Vahratian, Patel, Wolff, & Xu, 2008; Whittaker, Armstrong, & Adams,

2008). While EC can be in the form of an intrauterine device or oral medication, the oral medication is the focus of this paper. It is possible that its use could avert 1.5-1.7 million unintended pregnancies and 700,000-800,000 abortions (Boonstra, 2002; Weismiller, 2004).

Despite the suggestion of value, safety, and efficacy in preventing an unintended pregnancy, the use of EC is underutilized. Studies abroad have suggested that lack of lack of information and stigma contributed to low use (Aziken, Okonta, & Ande, 2003; Bell & Millward, 1999; Free, Ogden, & Lee, 2002). Research in the U.S. was largely conducted before over-the-counter availability of EC. These studies found a general awareness of a method of post pregnancy prevention but low rates of use (Corbett et al., 2006; The Henry J Kaiser Family Foundation [KFF], 2004). Only two known studies have conducted inquiries on EC perceptions and use since its over-the-counter availability. Hickey (2009) examined knowledge, perceptions, and use of EC in college females on the east coast reporting that 28% admitted prior use and many women equated EC with abortion. Miller (2011) supported prior findings that information about EC is both lacking and inaccurate.

Studies on EC conducted outside of the U.S. may not be directly applicable to contextual conditions in the U.S. Research conducted in the U.S. may not be directly applicable since increased access, dissemination of information, and television advertising (see as examples http://ec.princeton.edu/ecmaterials/ecads.html) may have increased knowledge or changed perceptions (Corbett et al., 2006; Hickey, 2009; The Henry J Kaiser Family Foundation[KFF], 2005; Whittaker et al., 2008). Furthermore, while the two studies conducted after over-the-counter approval are valuable, both were conducted in the Eastern U.S., have smaller sample sizes, and do not connect it to the larger influences of the reproductive health context and pregnancy intention. To further contribute to a better understanding of, a mixed method study was carried out to explore pregnancy intention in college women within the context of perception and use of EC. The first phase of the study was a survey that aimed to describe EC knowledge and use in the desired sample of women attending a large, Midwestern university. The purpose

of this paper is to describe the contextual components of demographics, sexual histories, and select perceptions that may contribute to knowledge, access, and use of EC.

Background

EC in its oral form, also known as Plan B is widely available in the U.S. It consists of high dose progestin that is most effective if administered within the first 72 hours after intercourse. Its mechanism of action is to delay or inhibit ovulation and will not disrupt an existing pregnancy (KFF, 2005; Wertheimer, 2000). Emergency contraception in the oral form of Plan B was approved for over-the-counter use by United States Federal Food and Drug Administration (FDA) in August 2006 for women over the age of 18 (FDA, 2009) and approximately one year later for women over the age of 17 (FDA, 2010).

Research suggests that Plan B can reduce the chance of pregnancy by 75-89% (Cunnane et al., 2006; Grimes & Raymond, 2002; L. M. Miller & Sawyer, 2006; Strayer & Couchenour, 1998; Vahratian et al., 2008; Whittaker et al., 2008). It is possible that its use could avert 1.5-1.7 million unintended pregnancies and 700,000-800,000 abortions (Boonstra, 2002; Weismiller, 2004). Both the World Health Organization (WHO) and the American College of Obstetricians and Gynecologists (ACOG) have made statements in support EC's safety and effectiveness (American College of Obstetricians and Gynecologists, 2010; Weismiller, 2004).

EC has been connected with knowledge, availability and personal perceptions of risk. In a study conducted with 510 students in Nigeria (Aziken et al., 2003), most (58%) identified that something could be done once intercourse had occurred to prevent pregnancy. Few (18%) knew the correct window of time in which EC was most effective. The authors concluded that misinformation could be attributed to non-availability of information. Two other quantitative studies were conducted in England. Free and colleagues (2002) engaged 30 women in the inner city age 18-25 and found that young women did not use EC because they did not perceive themselves vulnerable to pregnancy or they associated use with disapproving perceptions or providers. Bell and Millward (1999) interviewed 8 women seeking care at a general practice

clinic. They concluded that although women had awareness of EC it had negative associations or stigma and women did not feel they could obtain information from their providers. Consistent within both studies in England, women expressed feelings of embarrassment, fear, and stigma that prevented them from seeking EC. In sum, research abroad suggests that negative associations, lack of knowledge or misinformation, and lack of perceived risk prevented women from using EC.

A few similar studies have been conducted in the U.S. In California the Henry J Kaiser Family Foundation (KFF) surveyed 1151 men and women age 15-44 (2004). They found that when limiting the inquiry to women only, 65% were aware of some post-coital method of pregnancy prevention and three-quarters had heard of emergency contraception in the past although only 39% knew it was available in the U.S. More than half of women thought EC was the same as RU-486. At the time of this study, California did offer emergency contraception directly from pharmacists without a prescription, however only 18% of all participants that had some knowledge of EC, knew that this option was available. Corbett and colleagues (2006) surveyed 26 male and 73female college students about knowledge and perceptions of emergency contraception. The study took place in a southern city. Of the 97 students participating they found that 75% of students knew there was something that could be done post-intercourse to prevent pregnancy and 13.7% said that they or their partner had used EC previously. Like prior studies, 88% could not distinguish EC from RU-486.

Only two studies were conducted after EC was made available over-the-counter. Both aimed to assess knowledge, perceptions, and use of EC in college students. Hickey (2009) reported that of 609 female students, 28% reported prior use of EC but 98% stated that they knew there was something to prevent pregnancy after intercourse. Generally, women approved of using EC (57%). Specifically, 96% thought it appropriate in the case of rape and 82% in the case of failed contraception. Hickey reported a persistent confusion of EC with medical abortion as 40% of the sample was not sure if EC was the same as RU-486. Access seemed to more problematic as over one-third thought that EC required a provider prescription and 60% thought

they would not use EC because they did not think they could obtain the medication. Reasons for this were not made explicit. The second study by Miller (2011) also examined attitudes about EC in undergraduate college students in Pennsylvania. Of the 714 participating, 354 were female and total ages ranged from 18-53 years. Like other studies awareness of EC was high (74%) but use was low (17% of women or male's partners). Knowledge assessments demonstrated a considerable lack of accurate information as 23% of women thought that EC could help in the prevention of contracting a sexually transmitted disease, 62% of women could not identify the most effective window of use, and 68% were incorrect regarding the prescription status of EC. Unlike prior studies both male and female students were more likely to associate EC with contraception (81%) than abortion (19%).

Increasing understanding of EC is important to the reproductive health context for a number of reasons. First, EC is the only form of contraception available to prevent a pregnancy once intercourse has already occurred. Second, EC's accepted efficacy, safety and availability positions it to potentially play a significant role in pregnancy planning and intention. Third, despite research suggesting that lack of knowledge and misconceptions stand as barriers to EC use, reasons for nonuse and persisting misconceptions remain unclear.

Methods

An exploratory mixed methods study designed to examine pregnancy intention in college women, queried the context of knowledge, access, and use of emergency contraception employing both survey and interview methods. The web-based survey collected data on demographic characteristics, sexual history, contraceptive practices, and knowledge and use of emergency contraception. Due to the limited information about emergency contraception, the survey provided important foundational data regarding knowledge and use characteristics in this population.

Inclusion criteria for this study were: 1) female; 2) age 18-35; 3) attending the university as a student; and 4) able to speak and comprehend English language. All female students at the

university were recruited via e-mail using institution mass e-mail procedures. Compensation methods included a chance to win one of 40 $10 gift certificates to a local department store.

The web-based survey was developed by the investigator to obtain information about general demographics such as age, race/ethnicity, year in school, and insurance status. These along with questions about sexual activity, contraceptive history aimed to provide important contextual information about knowledge and use of emergency contraception. Specific questions were adapted from previous surveys such as the Family Growth Survey and the California Women's Health Survey (unpublished personal copy from California Department of Women's health). Additional questions were written with the literature base as a guide. Questions were created in an attempt to capture particular beliefs that may provide insight regarding potential influence of the social context. For example, it was important to know if a woman used a regular contraceptive method in comparison to whether or not she has or would consider the use of emergency contraception. Prior to distribution the survey was pilot tested and all procedures were approved by the Institutional Review Board.

Data Analysis

Data analysis was completed using the SAS statistical program. Mean, medians, and modes for continuous variables and proportions for categorical variables were used to describe demographic characteristics of all participants as well has their knowledge, use and, perceptions of to EC. Separate logistic regression models were developed to identify the predictors of emergency contraceptive use and knowledge of emergency contraception. For the regression models, year in college was collapsed from six to three categories, underclassmen (freshman and sophomore status), upperclassmen (junior and senior status), and graduate student status. Race/ethnicity was also condensed into five categories of White/Caucasian, African-American, Asian/Pacific Islander, Hispanic/Latina, and Other.

The models were constructed using a forward stepwise selection routine with a p-value of 0.10 as the criterion to enter and exit the model. The dependent variable emergency

contraception was a dichotomous, variable classified as ever versus never used. The dependent variable knowledge was a dichotomous variable classified as knowing EC could be accessed over the count versus not knowing this information. All potential variables (year in college, current use of birth control, race/ethnicity, history of a false alarm, prior use of EC, knowledge of EC access OVER-THE-COUNTER, ever been pregnant), were initially considered and the variable with the lowest (most significant) p-value was added first. The next most significant variable (according to lowest p-value) were added to the model in a stepwise fashion until no significant variables could be found (at α=0.10 level). At each step, each variable in the model was re-evaluated to be sure that it was still significant. If the variable was no longer significant, it was taken out of the model at that step. After the main variables were chosen, all possible two-way interactions were tested for potential significance. Odds ratios were also computed by exponentiating the beta estimates.

Results

Of the participants invited to participate in the survey, 2007 of 14,456 responded, making the response rate 14%. Age ranged from 18-35 years with a median of 22 years. Women under the age of 25 made up over 75% of the respondents. Graduate students responded most frequently making up 39.5% of the total respondents. The ethnic make-up of the respondents was self described and largely Caucasian (89.3%) with 10.7% minority student population. These characteristics are summarized below in table 5. To finance their education, 59.49% used student loans, 51.36% obtained scholarships, and 23% received grants, 52% worked full or part-time, and 53.7% received family assistance to pay for school and living expenses. The majority of women had some type of health coverage; however 3.8% reported they had no health benefits currently.

Table 5. Reported demographic characteristics of participants: Year in college and Ethnicity

	N=2007	%
Year in College		
Freshman	200	10%
Sophomore	272	13.6%
Junior	315	15.7%
Senior	408	20.3%
Graduate Student	793	39.5%
Other	19	1%
Ethnicity		
African American	45	2.24%
Asian/Pacific Islander	110	5.5%
Caucasian/White	1792	89.3%
Hispanic/Latino	77	3.8%
Indigenous/Aboriginal	11	.6%
Multiracial	41	2.04%
Not Specified	18	.9%

Sexual History

The majority of women (85.5%) reported at least one episode of vaginal intercourse and 73% reported that they were currently sexually active. Of all women who had ever had sexual intercourse, 74.1% were using a regular form of birth control and 91.4% of those currently sexually active reported using a regular means of birth control. Incidents of unprotected sex were not uncommon. Of those that had ever had sex, 20% reported that no method of pregnancy prevention was used from one time to every time intercourse occurred. A total of 261 (13.1%) respondents had prior pregnancies. Of these 68 (26.2%) had spontaneous abortions, 114 (44.2%) had medical or surgical abortions and 79 (29.6%) had live births. Of those that had been previously pregnant 54.8% (N=143) had 1 or more children. A large number 51.6% (N=1029) women reported that they had experienced a “false alarm”. This was defined as a time where they thought they might be pregnancy but turned out to not be true. Characteristics of sexual history are summarized in Table 6 and Table 7.

Table 6. Reported characteristics of sexual history in participants

	N	%
Ever had vaginal intercourse	1716/2007	86.0
Sexually active in last month	1463/2003	73.0
Currently using birth control	1484/2006	74.0
If no, ever used birth control	252/274	92.0
False Alarm	1029/1994	51.6
Ever been pregnant	261/1996	13.1
If yes, had spontaneous abortion	68/260	26.2
If yes, had medical or surgical abortion	114/258	44.2
If yes, experienced childbirth	143/261	54.8

Note: Denominators vary due to question branching and missing responses.

Table 7. Reported frequency of unprotected sex in previous 12 months for college women

	N	%
Never	1245	72.6
One time	121	7.1
A few times	225	13.1
Much of the time	75	4.4
Every time	42	2.45

Note: Responses from those ever been sexually active minus 8 missing responses

Emergency Contraception

Awareness and Use

Characteristics of EC knowledge, perceptions and use are summarized in Table 8. Of the respondents, 94.1% knew that there was something that they could do to prevent a pregnancy once intercourse had already occurred. A total of 31.9% (N=637) women had used emergency contraception previously and 74.3% (N=1994) women would consider using it in the future. Most of the women 98.2% (N=1959) had heard something about emergency contraception prior to participating in this research project. Restricting analysis to those women who used regular

birth control, 37.3% (554/1484) had used EC previously which is slightly higher than all women who reported being sexually active. Among women reporting "never" having unprotected sex, 32.1% (399/1245) reported a prior use of EC compared to 50.5% (237/469) that reported having unprotected sex one or more times in the previous 12 months.

Table 8. Perceptions, knowledge and use characteristics of EC in college women

	N	%
General Awareness of post-pregnancy prevention	1877	94.1
History of EC Use	637	32.0
Would Consider Using EC if needed	1481	74.3
Agreed that EC is the same as abortion	1414	70.8
Agreed that EC most effective if taken in 72 hours	1872	93.79
Agreed that EC will cause birth defects	555	27.81
Agreed that can get EC OTC	1435	72.2
Agreed that Appropriate to use In the case of rape	1904	95.5
Agreed that Appropriate to use If the condom broke	1751	88.0
Agreed with appropriate use If No birth control used	1409	71.0
Agreed that appropriate to use as a regular birth control	92	4.6
Would never use EC under any circumstances	339	17.1

Predictors of the probability of EC use was examined using logistic regression. The dependent variable was based on the dichotomous yes/no response to whether women had ever used EC. The dataset included 1712 individuals with complete data who responded "yes" to the question whether they had ever had sexual intercourse with a man. Of the 1712 individuals, 635 responded "yes" to a history of prior use with EC. Table 9 summarizes the results of this analysis. The variable representing women who reported having a "false alarm" or a time when they thought they might be pregnant but were not, was added first. This was followed by women who knew EC could be obtained over the counter at a pharmacy (labeled Pharmacy OTC), then race/ethnicity and lastly year in college. No interactions were significant at the alpha=0.05 level and therefore not included in the model. The final model consists of the following variables:

False alarm, Pharmacy OTC, Race and College. All variables are significant at the 0.05 level except for year in college which is marginally significant (p-value=0.0514).

Table 9. Predictors of EC use for sexually active college women

		β	Standard Error	Odd Ratio	CI
Intercept		-1.5868	0.1656		
College	Graduate	0.2704	0.1401	1.31	(1.0, 1.73)
college	Underclassman	0.0189	0.1391	1.02	(0.78, 1.38)
race	African-American	-0.3076	0.4159	.735	(0.33, 1.66)
race	Asian/Pacific Islander	0.6127	0.2423	1.85	(1.15, 2.97)
race	Hispanic/Latina	0.6420	0.3452	1.9	(0.97, 3.74)
race	Other	0.3823	0.2633	1.47	(0.88 , 2.46)
False Alarm	Yes	0.7240	0.1078	2.06	(1.67, 2.55)
Pharmacy OTC	Yes	0.5946	0.1226	1.81	(1.4, 2.3)

In summary, it was found to be significant that woman of Asian/Pacific Islander descent was 1.85 times more likely to use EC when compared to women identifying as White/Caucasian. Also, of note is that a woman who had a history of a false alarm was two times more likely of using EC in comparison to women who had not had this experience. Women who knew that EC could be obtained over the counter were 1.8 times more likely to use EC that women who did not have this knowledge.

A logistic regression model was also created to predict the probability of EC use in the population of women reporting that they had engaged in unprotected sex one or more times in the previous 12 months (n=237/468). Again, the dependent variable was based on the dichotomous yes/no response to whether women had ever used EC. Table 10 summarizes the results of this analysis. The variable representing current use of birth control (birth control) was added first, followed by knowledge of EC availability OTC (pharmacy OTC), and false alarm.

Due to the smaller sample size, variables with larger categories (race, college) were unable to be fit in the model. No interactions were significant at the alpha=0.05 level and therefore not included. The final model consists of the following variables: birth control, pharmacy OTC and false alarm.

Table 10. Predictors of EC use for women with one or more incidents of unprotected sex in last 12 months

		β	Standard Error	Odd Ratio	CI
Intercept		-1.3374	0.2711		
False Alarm	Yes	0.5636	0.2124	1.757	(1.6, 2.6)
Birth Control	Yes	0.7109	0.2132	2.036	(1.3,3.1)
Pharmacy OTC	Yes	0.6278	0. 2187	1.873	(1.2,2.9)

All variables entered in the model were significant at the p=.05 level. For women who had one or more episodes of unprotected sex in the previous 12 months, those who had also experienced a false alarm were 1.8 times more likely to use EC. For these same women who used a regular method of birth control, they were 2 times as likely to use EC and those who knew EC was available from a pharmacist over the counter, were 1.9 times more likely to use EC.

General Knowledge

Accurate knowledge about emergency contraception varied. A large majority, 93.8% (N=1872) correctly identified the most effective window of use to be within 72 hours of intercourse with risk of pregnancy. In contrast, a total of 87.9% (N=1755) of women indicated that emergency contraception could be taken after the first trimester of a confirmed pregnancy. More than one-quarter (N=555) women also believed that emergency contraception would cause birth defects if taken with a concurrent pregnancy.

The majority of women 78.6% of women knew that emergency contraception could be obtained directly from a pharmacist or at a pharmacy over-the-counter 72.2% (N=1435). Only 53.2% (N=1061) believed that emergency contraception could be obtained in advance and kept for future use. The majority of women knew that emergency contraception could be obtained from a community clinic 88.4% (N=1517), from student health services 51% (N=1016), or from an emergency treatment center 46.4% (N=920).

Knowledge that EC could be obtained over the counter from a pharmacist was also evaluated using logistical regression. Observations with missing data (n=17) were eliminated from the analysis considering 1990 observations with 1431 individuals responding affirmatively that they knew emergency contraception could be obtained over the counter. Table 11 displays the results of this analysis. Age was entered into the model first, followed by history of using EC (EC Use), year in college (condensed versions) and if the individual was currently using birth control (birth control). Race was added to the model; however, given the other variables in the model it was not significant and thus removed. No interactions were significant at the alpha=0.05 level and therefore not included in the model.

The final model consists of the following variables: Age, history of EC use (EC Use), year in college and current use of a regular method of birth control (birth control). All variables are significant at the 0.05 level. Age was inversely related to knowledge of EC availability although, upperclassmen (juniors and seniors) were the least likely to know about OTC access. Graduate students were 1.9 times more likely to know about EC OTC access than underclassmen but underclassmen were 2.4 times more likely to know about over the counter status than upperclassmen. Women who were currently using birth control or had a previous use of EC were 1.6 and 1.7 times, respectively more likely to know that EC could be purchased over the counter from a pharmacist.

Table 11. Predictors of EC EC OTC knowledge

Parameter		DF	Estimate	Standard Error	OR	CI
Intercept		1	2.9197	0.3693		
Age		1	-0.1314	0.0181	0.877	(0.84, 0.91)
College	Graduate	1	0.6640	0.1484	1.943	(1.45, 2.60)
College	Underclassman	1	0.8649	0.1901	2.375	(1.64, 3.45)
Birth Control	Yes	1	0.4815	0.1141	1.618	(1.29, 2.02)
EC Use	Yes	1	0.5701	0.1199	1.768	(1.40, 2.24)

Perceptions

When asked about appropriate uses of emergency contraception 95.5% (N=1904) women thought that it could be used in the case of rape. Fewer women thought it was appropriate to use emergency contraception in the case of a broken condom or if no method of birth control was used, 87.9% (N=1751) and 70.8% (N=1409), respectively. Few 4.6% (N=92) believed that emergency contraception could be used as regular form of birth control.

Discussion

Almost all women had a history of being sexually active and almost three-fourths were currently sexually active. This is consistent with national estimates (Chandra, Martinez, Mosher, Abma, & Jones, 2005). Although most women who were currently sexually active were actively using a method of birth control, few were not and one-fifth reported one or more incidents of unprotected sex in the last 12 months. Also, more than half of the women reported a previous "false alarm", where they thought they might be pregnancy but turned out to not be true. This is consistent with women in a similar study conducted by Miller (2011). These findings confirm that although college woman are perceived to be more affluent and privileged than the general populations, they nonetheless experience risks to their sexual and reproductive health. Further

support of risk is that 13.1% had experienced a prior pregnancy. The observation that 44.2% were ended by abortion suggests that these pregnancies were unwanted at this time in their lives.

In regards to EC, awareness of something as a means of pregnancy prevention post-intercourse was well known. Knowledge of a post-intercourse method of pregnancy prevention, of EC, and rate of use was higher than prior studies (Aziken et al., 2003; Bell & Millward, 1999; Corbett et al., 2006; KFF, 2004) but similar to percentages described by Hickey (2009) and Miller (2011). Specific knowledge such as side effects and mechanism of use regarding EC varied. Inaccurate information such as that EC could be taken up through the first semester of pregnancy and that it could cause birth defects was higher than expected and concerning. These findings combined with prior findings suggest that dissemination of accurate information is still required.

A large number of women knew that emergency contraception could be obtained directly from a pharmacist or a community or student health services clinic. This finding was higher than the 40-60% of women with this knowledge in prior studies (Hickey, 2009; Miller, 2011). Knowledge of where to get EC may be also be reflected in the higher rates of use in this population as 32% reported prior use compared to 17% and 28% in prior studies (Hickey, 2009; Miller, 2011). All studies conducted after EC was made available over the counter reflect an increase in EC use compared to when availability was restricted to prescription status. This is also consistent with findings that pharmacy availability increased when these time periods were compared (Lehan Mackin & Clark, In press) and suggests that increase in access has had an impact on use. Also interesting is that having a history of false alarm and knowing that EC was available over the counter increased the probability of use. Also, worth discussion is the finding that 51% of women who reported having unprotected sex one or more times in the last 12 months also had prior history of EC use. This suggests a connection with and understanding of risk of pregnancy combined with knowledge that something can be done to attenuate the risk. Reasons behind the finding that women of Asian/Pacific Islander descent were more likely to use

EC than White/Caucasian women needs further exploration in a larger sample to determine if significance was an artifact of effect size or true differences.

Among women who report that unprotected sex "never" occurred in the last 12 month, one third had also used EC. What this suggests is the utility of EC moves beyond any idea it was only used by persons that didn't use birth control or were in some way implicit in a failure to secure pre-intercourse birth control prevention. Admittedly, some explanation may be that EC use preceded the inquiry regarding unprotected sex in the last 12 months. However, it also may indicate that EC is being used appropriately in the case of a primary method failure. A subsequent study suggests that women who are invested in pregnancy prevention by using a regular birth control method will use EC "just to be safe" or to be "doubly sure" they are protected against pregnancy (Lehan Mackin, unpublished manuscript).

Overall perceptions also varied. This study found that in addition to women with histories of prior use three-fourths would consider using it if the need arose. Most women saw appropriate use to be in the case of rape, if a primary contraceptive method failed, or if no method of birth control was used during intercourse. This finding was consistent with perceptions of acceptability reported by Miller (2011) and Hickey (2009) and also the appropriate conditions for use reported by Hickey (2009). One perception appears persistent over time regardless of over the counter status which is the confusion of EC with abortion (Bell & Millward, 1999; Corbett et al., 2006; Cunnane et al., 2006; Whittaker et al., 2008). In this study 70.8% of women equated EC with abortion, considerably more than the 40% reported by Hickey (2009) or 19% that stated it was closer to abortion than contraception by Miller (2011). The reasons for this are unclear especially in light of similar awareness and higher rates of use. It does indicate both a need for further exploration and perhaps underscores the persistent necessity for accurate information.

Perhaps most apparent in these findings is the lack of accurate information related to EC knowledge, perception, and use. This study found a large number of women that believed that using EC may cause birth defects if a woman is already pregnant or is in some way equivocal to

abortion. Previous studies have also linked EC with stigma or contrary to religious or culture beliefs. All of these studies suggest that these factors may prevent a woman from using EC. These certainly are important aspects of information provision that needs to be considered by health care providers, public health intervention strategies, and advertising campaigns and perhaps critical considering the rates of unintended pregnancy in the U.S.

Research inquiring about sexual topics and histories is subject to limitations. This may be a barrier to women who may not want to be truthful regarding admissions of unprotected sex or outcome of pregnancies. Also, since completion of the survey was voluntary, it cannot be known if the 14% of women who responded to the survey were representative of all female students at the university. The fact that all women were college students further separates them from the less educated and privilege of the general population of women. Despite the common element of college attendance, this sample was diverse in many ways. First, although all of the participants were women attending college, questions regarding how their education was financed revealed that economic status varied as about half of the participants reported that they required student loans, part or full time jobs, or family assistance to pay for their education. This variability in economic background, a Midwest public university setting, and including women age 18-35 in the sample population further sets this study apart from the two prior studies on post-EC perceptions and use. Secondly, the racial ethnic diversity found in over 10% or 200 of the participants was large enough to allow for some meaningful comparisons not able to be done in prior studies (Hickey, 2009; Miller, 2011).

The status of a college woman suggests higher educational attainment and levels of affluence perhaps not present in the general population, additional studies need to explore the utility of emergency contraception with other populations. Health providers, public health interventions, and advertising campaigns need to include efforts to dispel misconceptions and provide more accurate information about EC. Further investigation is needed to determine additional utility such as why women who were faced with the threat of unintended pregnancy

such as in the case of false alarm or chose to abort an unwanted pregnancy did not seek emergency contraception.

CHAPTER 4

CONVICTION, EMPOWERMENT, AND AGENCY

Background

Unintended pregnancy has been extensively examined in the literature and continues to be considered a substantial public health issue. Unintended pregnancies in the United States affect almost 3 million women each year (Finer & Henshaw, 2006; U.S. Department of Health & Human Services, 2008). Existing research has determined that experiencing a pregnancy that was unintended is not benign; rather there can be serious consequences for both mother and child. Women who choose to continue an unintended pregnancy often receive inadequate prenatal care (Brown & Eisenberg, 1995; Gipson et al., 2008; Ketterlinus et al., 1990; Mosher & Bachrach, 1996; J. Trussell, 1988). Poor infant health can have lasting effects into adulthood and risk of lower educational attainment increases risk of living in poverty (Honein et al., 2009; Khatiwada et al., 2007; Potharst et al., 2011).

Preventing unintended pregnancy has been and continues as a Healthy People 2020 goal and the object of government initiatives to reduce associated problems (See for examples Brown & Eisenberg, 1995 (Institute of Medicine Report) and; Centers for Disease Control and Prevention (CDC), 2010). Despite the focus on unintended pregnancy, efforts to move towards increasing the number of pregnancies that are wanted before, during, and after conception remain unsuccessful. Unintended pregnancy rates have increased since 1994 specific to certain population groups and in the population in addition to the decrease in the proportion of women using of regular methods of birth control (Finer & Henshaw, 2006; Mosher, 2004; National Center for Health Statistics, 2005). Of the one in twenty women that experience an unintended pregnancy, this rate is disproportionate in women age 18-24, woman of color, cohabitating women, and poor women as evidenced by the above average rates of unintended births and abortion (Finer & Henshaw, 2006).

The persistence and scope of problems associated with unintended, unplanned, or unwanted pregnancies suggests that the meaning and experiences of women's pregnancy intention requires additional exploration. The current body of literature focuses heavily on retrospective views of pregnancy experiences. Contextual influences that are considered when a woman looks prospectively at an unintended pregnancy are presumably unlike a retrospective pregnancy experience that has already occurred. Prevention focused interventions could benefit from insight regarding women's influences before they become unexpectedly pregnant.

Women age 18-24 experience the highest rate of unintended pregnancy, twice the rate for all groups of women (Finer & Henshaw, 2006). Women in this age group who attend college experience unintended pregnancy at a lower rate (Finer & Henshaw, 2006). This suggests that attending college provides some protective factor or influences over pregnancy intention. While female college students can be placed in a position of privilege due to their ability to access resources that allow them to pursue a college education, they nonetheless experience risks that contribute to an unintended pregnancy. These risks include sexual initiation, decreased sexual inhibitions with alcohol intake and more unprotected sex, and risk of unwanted intercourse (Abma et al., 1998; Abma et al., 2010; Chandra et al., 2005; Fisher et al., 2000; Hingson et al., 2003).

Social context, including individual demographics, relationships, economic circumstances, the sociopolitical environment, community affiliations, and cultural norms assemble into a larger force that influences behavior affecting health outcomes including reproductive health behavior. For example, studies have found that cost of contraception, social consequences for early pregnancy, economic opportunities, and educational attainment are implicated within sexual decision-making and fertility (Kendall et al., 2005). Culture and religion impact the acceptability of a pregnancy particularly if it was not intended (Srikanthan & Reid, 2008). Pregnancy outcomes such as childbearing or seeking abortion may be influenced by sense of control and personal values (Fielding & Schaff, 2004; W. B. Miller, 1986; Stevens-Simon, 2001). Revealing how elements of the social context are embodied by individuals

demonstrates how specific health behavior is encouraged or discouraged. Social rules and expectations certainly apply to sexual behavior and create boundaries and limits on pregnancy intention.

As part of a larger mixed method study, pregnancy intention was examined with attention to how various levels of the social context influenced thoughts and behavior. The inquiry was guided by the Ecosocial framework as described by Krieger (Krieger, 1994; Krieger & Gruskin, 2001; Krieger, 2001a; Krieger, 2001b; Krieger, 2005). Qualitative findings elucidated this process for college women at a large, Midwestern University. The purpose of this paper is to describe the key concepts discovered in the contextual examination of women's stories and how personal convictions, embodiment, and empowerment influenced individual agency.

Theoretical Framework and Definitions of Key Concepts

Ecosocial theory as described by Krieger (Krieger, 1994; Krieger & Gruskin, 2001; Krieger, 2001a; Krieger, 2001b; Krieger, 2005) combines concepts within ecology and sociology to produce a framework that allows for critical analyses of social determinants of health within a multilevel ecosystem. Key concepts of the Ecosocial model include e*mbodiment, pathways of embodiment, cumulative interplay between exposure, susceptibility and resistance,* and *accountability and agency*. *Embodiment* is how we biologically incorporate the material and social world and can reveal connections between the human self and multilevels of the social and ecological context that affect our health. *Pathways of embodiment* are how the structure and societal arrangements of power influence how we biologically incorporate the world. Pathways of embodiment become realized in the cumulative interplay *between exposure, susceptibility and resistance* (Krieger, 1994). Lastly, *accountability and agency* refers to where power is imbalanced and can highlight ways in which inequities are documented, analyzed, defended, or explained. Accountability can be that of institutions, households, communities, or individuals (Krieger & Gruskin, 2001). Krieger's use of agency and the concept of individual agency are presented uniquely in this paper.

For the purposes of this paper *social context* is defined as the composition of both tangible and non-material factors that shape people's action. It is inclusive of but not limited to humans' social environments, physical surroundings, economic structure, power relations, cultural and religious practices, and availability of natural resources. Social context is experienced within relationships at multiple levels via connections with kin, neighborhoods, cities and regions. The connections are fluid, change over time, and subject to internal and external power influences (Barnett & Casper, 2001). The result of these connections is the creation of ideological boundaries and guidelines that represent the "proper thing to do" (Finch, 1989; Giddens, 1984), limiting influence and opportunities that individuals have. *Conviction* is defined conventionally, as a belief, principle, or opinion that is held firmly by the individual. *Empowerment* is the process by which both external factors and individual characteristics converge and produce the potential to act. *Agency* is defined as the way creative beings purposefully act on, shape, and resist the world around them.

Design and Methods

A sequential, exploratory mixed-methods study of college women employing both survey and interview methods was used to examine the role of social context on women's pregnancy intention. The study was conducted in two phases. Phase I was a brief descriptive, web-based survey providing important foundational knowledge and identifying participants for the Phase II qualitative interviews. The survey consisted of questions regarding demographic characteristics, sexual history, contraceptive practices, pregnancy history, and knowledge and use of emergency contraception. Results of the quantitative survey have been published elsewhere. Phase II was a semi-structured face to face interviews engaging a variety of experiences related to pregnancy intention. It is this latter phase of the research study that is the focus of this paper. Prior to the initiation of any research procedures this project was approved by the University of Iowa Institutional Review Board.

A semi-structured interview (SSI) was developed to gather women's stories about their experiences related to pregnancy intention. Questions were designed to elicit responses that suggested influences both local and beyond and that shed light on the material worlds that structured women's lives (Grewal & Kaplan, 1994; Krieger, 2008; Taylor, 1998). Questions about prospective pregnancies were designed to promote reflection on how a pregnancy would be perceived by themselves and important people or influences in their lives. Building on this information, additional questions attempted to obtain information about how women approached pregnancy prevention. Additional context information was achieved by asking participants to compare prior experiences such as perceptions of sexual behavior and birth control access to their current college environment. The interview allowed a forum where the research experience provided a meaningful place for women to share their experiences, giving them a voice and creating a connection (DeVault & Gross, 2007).

Women were recruited from a pool of willing participants self-identified in the survey using a maximum variation strategy. The selection of interview participants occurred in a several tier process. Initial invitations for the interview were based on pre-defined typical experiences and indicated preliminary sources of variation. These included women who had used emergency contraception, had low levels of emergency contraception knowledge, had a previous pregnancy, had a history of a "false alarm" or missed pregnancy, or reported a high frequency of unprotected sex. These categories were not mutually exclusive. Theoretical sampling techniques allowed for selecting participants based on characteristics that emerged in the initial interviews that suggested additional typical experiences and included as sources of variation. A final total of 35 women were chosen representing a wide variety of typical and unique experiences to the point of saturation (Ayres, 2000; Teddlie & Tashakkori, 2003; Teddlie & Tashakkori, 2009).

All interviews were audiotaped, transcribed, imported into Nvivo, a qualitative data management software program, coded and labeled. Upon completion of the interview, participants received $20 in compensation. Within and across case method of analysis was chosen for its ability to maintain the contextual meaning of the data while at the same time allow

for comparisons across multiple accounts (Ayres et al., 2003). This method allowed for interpretation of both the "general context" and the context of "each individual's account of experience". Interpretations were validated by reviewed by experienced researchers that composed the dissertation team.

Findings

A total of 35 interviews were completed each lasting 35-85 minutes. The ages of women completing the interviews ranged from 18-33 with the mean, median, and mode being 24.3, 20, and 21 years respectively. Graduate students numbered 11 (31%) women with the remaining 24 (69%) with undergraduate status. The majority of the participants self-identified as White/Caucasian (N=20, 57%), African American (N=6, 17%), Asian (N=6, 17%), and Latina/Hispanic (N=3, 9%). Of the initial selection criteria, the final interview pool had 12 women (34%) that had previously used emergency contraception, 7(20%) had low levels of emergency contraception knowledge, 9 (26%) had experienced a prior pregnancy, 11(31%) had a high frequency of unprotected intercourse, and 14(46%) had experienced a "false alarm" or missed pregnancy. Other categories of interest were that 6 (17%) had never had sex, and 3(9%) had had a pregnancy termination, and 3(9%) were sexually active and not using any method of contraception.

Women shared their stories of what a pregnancy might mean at this time in their life as well as the reaction of important others' in their lives. They willingly shared accounts of first sexual experiences, history of contraception, suspecting a pregnancy and having it confirmed positive or negative, and thoughts and feelings about birth control, gender roles, abortion, and what they would do if they became pregnant. Within these rich accounts, a number of themes were evident. However, what became especially salient were the thoughts on pregnancy intention that reflected the women's convictions, how these were embodied, and processes of empowerment that combined to influence individual agency. Once this became evident accounts

were compared first across cases and then within individual cases. Examples of these comparisons are provided from women's stories. All women have been give pseudonyms.

Comparison of Themes across Cases

Conviction

Conviction was defined as a belief, principle, or opinion that is held firmly by the individual. Women expressed convictions that had arisen from different sources. One young woman named Paige stated:

> "Number one is my faith. I am a Christian and I believe that sexual intercourse is supposed to occur within the confines … within the safety of marriage".

Lisa also expressed a conviction stating:

> "I would say that my goals, my personal goals, are the most important right now. I want t to get a good job, get established in that career, and want to make good money before I go off and have a baby. Part of it I guess would be because I want to go and have a career and I wouldn't want to like sacrifice my career for a child but then the other part is; I would want to be able to provide for that child"

Both women expressed convictions albeit from different sources. Paige's convictions have a religious basis that supports abstaining from sex until after marriage and Lisa is based in a personal commitment to have a career before beginning childbearing.

Empowerment

Empowerment is the process by which both external factors and individual characteristics converge and produce the potential to act. It is not visible but rather reflected in how women explain specific thoughts. Many times it cannot be determined what instigates empowerment however some women are able to articulate particular influences. For example, Aaron said:

> "I just think when I came to college I just opened up a lot more. And like being put in my … in that unlucky situation, with needing to take the Plan B, I just kind of realized 'oh it happens', it doesn't make me a bad person, so instead of judging the person, you know, it's just like; that situation … it just stuck".

Aaron's college experience allowed her to form her own ideas and determine that although using emergency contraception was not something she initially considered doing it was the right decision for her under specific circumstances. For Annie, she felt empowered to be prepared for the sexual relationship she wanted to have.

> "I was in my first serious relationship and had decided that I was going to have sex and that I was going to do it the responsible way and be on birth control at that time".

Annie spoke of having open conversations about birth control and sexuality with her mom. Her comfort with these issues allowed her to make conscious preparations for pregnancy prevention.

Agency

In contrast to empowerment, agency is defined as the way creative beings purposefully act on, shape, and resist the world around them. Agency is made visible in actions and behavior. For example, Ashley illustrated this when she told the story about a time when her primary method of contraception had failed.

> "I said I don't think that was like last time and he's like 'oh well the condom broke' so I was not too happy… I wasn't ok with it … I didn't feel comfortable so I made sure there was (sic) guidelines and that the only way that [sex] was going to happen was if it was absolutely like one hundred percent safe".

Ashley confronted her partner and established rules for their sexual relationship that promoted her desire to post pone pregnancy. Zoe simply stated that:

> "I do not want to be pregnant so we use pills and condoms".

She demonstrated agency in preventing pregnancy by using two forms of contraception.

<u>Comparison of themes within cases</u>

Women demonstrated the processes of conviction, embodiment, empowerment and agency within their stories. These concepts intertwined and aggregated demonstrating that the interactive process was critical to the outcome. When beliefs and the ability to act on beliefs were contiguous, the result was agency. What was also evident was when beliefs were not

embodied or women were not empowered and this reflected in lack of agency. Both these connections and disconnections are demonstrated in the examples below.

Conviction and empowerment demonstrated in agency

For some women, convictions were articulated beliefs stemming from contextual elements and life experience and subsequently embodied. These deeply held beliefs appeared to be part of the process of empowerment, setting women up to act in a way that was consistent with their convictions. These visible actions and behaviors represented women's agency. As one example, Paige accounted:

> "My parent's definitely support me in my decision to be abstinent, they definitely support me and they definitely agree … it was definitely something that was taught in my growing up… [Abstaining from sex] is 100% a conscious choice … I know we live in the days of casual sex; or friends with benefits … and I have been propositioned or people have asked to have sex with me … my answer is just no, like… I don't get down like that… but yeah there have been situations where it's been confronted and I just had to stand my ground… because for a lot of guys these days; that is really difficult for them to deal with".

For Paige, her background and family support likely gave her the structure in which to formulate her religious conviction. Her parents support and expectations potentially helped her to embody her beliefs. These come together to reflect in her agency. Paige's convictions, the embodiment of these convictions and feeling of empowerment allows her to feel confident in her decision to refrain from pre-marital sex even in the face of contradictory social expectations and personal challenges.

Absence of conviction and empowerment reflected in agency

The lack of conviction and subsequent embodiment or empowerment was also observed. In these cases no conviction was articulated leaving no suggestion of a strong belief that had been embodied. Compounded with this, stories did not appear to demonstrate processes of empowerment translating into a lack of thoughtful action or agency. Dani provided one example. Dani was 21 years old, reported a history of several casual sex partners in which she might

sometimes use a condom. She had one current partner she saw the frequently and their primary method of birth control was to practice withdrawal.

> **"**I mean [pregnancy] probably could happen, like, anytime, because sperm does come out whenever. It probably could technically happen. I mean realistically, it probably could happen just because pre-ejaculation and whatever. But I guess I just don't really think it's gonna happen. I don't know."

Dani said that her and her current sex partner used withdrawal as a default. She reported that their "hook ups" were mainly random and while they had discussed the use of condoms, the heat of the moment negated any pre-planning. When talking about withdrawal she articulated an awareness of risk, however did not embody the risk enough to change her behavior. In Dani's case, lack of information was not a barrier as she was able to articulate knowledge of the high rate of failure of the withdrawal method. This may also be connected to her projection that if she did become pregnant the outcome would likely be childbirth.

> "When I was younger I thought about in the future, like now, I'd probably keep [a baby] if I was in college because I mean, you're just more like adult…you're out of the house... more situational, as time passes, as you get older, you don't have to go to college. I mean, it's a good thing and people wanna do it to further their careers, but you don't have to go every day…you can take night classes, you make your own decisions and you provide for yourself".

Dani talked about the fact that a pregnancy was possible at this time in her life and had thought about her options if this did happen. For her she didn't see a baby as particularly threatening to her college path. She suggested that college was not a necessity and if she had a baby she would just make it work. Dani didn't identify as a religious person, reporting being close with her mother who was a single parent, and had friends that thought the fact that she took chances with her sexual practices was "stupid". While it can't be said that Dani held no convictions, she didn't articulate any strong beliefs that she embodied and took into consideration prior to potential action. Dani also didn't demonstrate that she was particularly empowered to act in one way or another. As one contributing author described, Dani's behavior didn't reflect agency but rather, "she floated whichever direction the wind took her". Dani's

story represented a disconnect in any embodiment of conviction and empowerment which ultimately reflected in her lack of agency.

Conviction, absence of embodiment reflected in lack of agency

There were cases where women articulated a conviction but it was without subsequent embodiment or empowerment. Women expressed awareness of beliefs they were supposed to have as suggested by parents, religious affiliations or significant others in their lives. They expressed conflict with these beliefs indicating that they had not embodied these beliefs it was suggested they have as their own. Lilly's story exemplified this course.

> "I grew up saying that I was not going to have sex until I was married... I would always go into a situation, assuming that I wasn't going to have sex, but I did…in my mind, I was like 'I don't want to be doing this..I can stop whenever I want,' and so I'm not gonna invest in birth control. And so I think that was probably part of the reason that I never… I wouldn't use it. I didn't make a conscious choice not to use it, it just never crossed my mind… I would always tell myself like I wasn't going to have sex, so it wasn't going to happen and then it would".

Lilly described her upbringing as quite religious. Her parents had discussions that communicated to her that she was not expected to be sexually active until she was married. Her father had said that if she became pregnant she would not be allowed to live in their home. She would never accept the physician's offer of birth control for fear her parents would find out combined with her perception for a lack of need. She also said that her knowledge of sex and how her body worked was particularly poor stating that her parents had written letters opting her out of all health classes in high school. This was likely the backdrop for her first sexual experiences that she described as unexpected. She entered into situations telling herself that sex was not an option so this negated a need for forethought or birth control planning and then when sex would occur, she would tell herself it would not happen again. This inner conversation would happen over and over. In Lilly's case she articulated a conviction but did not embody it, did not articulate she was empowered to follow her conviction or protect her sexual health and this was demonstrated in her lack of agency.

Rejection of others' conviction, embodiment of own and agency

Like Lilly, Emma discussed the strong force around her that dictated a conviction for a prohibition of sex outside the confines of marriage. Emma grew up in South Asian culture with social and culture values that were quite traditional. Her parents and family ascribed to these values as was the expectation for her.

> **"**There's no sex before marriage, that's the expectation. It's a shared expectation [of my parents and culture] and it was something that I prescribed to until I did meet my husband…for me I think it was more of my westernized thinking".

Emma's conviction changed when she met a partner in which she wanted to share sexual intimacy. This desire was stronger than expectation she would not engage in sex prior to marriage. She demonstrated this desire by setting up a clandestine meeting in a city where they would be unrecognized and shared her wishes with her partner.

> "I was more comfortable with it. I know that he wasn't at the beginning … I was the one who initiated the whole thing…I had to completely brainwash him into it; you have to come, you have to meet me; I'm going back to the U.S., we won't see each other for a whole year. I had told him you know this is something I want".

In Emma's case, she was expected to have a prescribed conviction, however she went against it, perhaps empowered to embody her own conviction by the challenging values of "westernized thinking". This process was made visible in her decision to seek a sexual relationship with a partner even going so far to convince him to abandon his own convictions so that they might hare intimacy at a time that felt right in their current life circumstances.

Conclusions

Convictions as strongly held beliefs that can originate intrinsically or be tied to larger shared bodies of beliefs transmuted through culture or religion. The act of embodying these beliefs is what creates personal rules or boundaries for acceptable behavior. For the women in the interviews religious beliefs might have supported abstinence until marriage or personal goals drove women to pursue multiple methods of pregnancy prevention. The process of empowerment also came into play in the potential to act. Power was derived from some "thing"

such as religious faith, some “one”, such as a mother, or from unknown sources. This iterative course becomes visible in acts of agency. In contrast, agency is not realized if the process becomes broken by the failure of a conviction to be embodied or in the absence of empowerment. This fundamentally suggests that each element of conviction, embodiment, and empowerment are connected and do not exhibit influence agency in the same way in isolation.

Included in social contextual forces are poverty, social class, race, and gender all of which play significant roles in determining health including women’s reproductive health. However, within these structural forces that impact health exist individual personhood and the potential for agency that also has potential for health influence. Without consideration of this individual capacity to act, the result is an incomplete understanding of health along with a skewed view of persons as bodies and passive recipients of the world. In this latter view persons may become relegated as victims or a “system outcome” (Kelly & Charlton, 1995) rather than thinking and feeling agents. Examining how persons embody and resist the forces of their surrounding world and is salient to health inequities research. Equally important, however is the social context in which individuals are immersed and that “needs continually to be taken into account and is likely to result in more differentiated models” (Macintyre, 1997).

The literature base suggests that empowerment has a role in influencing reproductive health decisions. Women make better decisions if empowered by knowledge and models of health promoting behavior (Heimburger & Ward, 2008; Hsu, Lien, Lou, Chen, & Wang, 2010; Lee-Rife, 2010; Parry, 2005). Understanding interventions that empower women and how empowerment mitigates forces of the social context could well be the key to public health efforts aimed at reducing negative consequences of unintended pregnancy.

The lack of resolution to problems perceived to be associated with unintended, unplanned, or unwanted pregnancies suggested women’s experiences with pregnancy intention required additional exploration. Part of the lack of understanding may be in how women’s embodiment of beliefs, empowerment, and agency intervene with the forces of the social context. Comprehension of how women’s convictions are antecedent to or contribute to empowerment

which in turn affects agency in reproductive behavior and decision making could be one missing link to building effective public health intervention programs.

A number of limitations of this study can be noted. First, generalizations from these findings should be approached with caution considering the small sample size and restricted population as broad application was not the intent of this paper. Second, questions asked of participants included an inquiry of sexual practices and pregnancy history. For many this may entail sensitive subject matter. In an effort to attenuate the potential for lack of truthfulness in disclosure, confidentiality and comfort with the interviewer and interview process were priority. For example, using and natural space between topics or upon completion of the interview, the researcher would ask participants their comfort level with conversations that had occurred prior. In none of the cases did any participant note discomfort; rather they voiced “fun”, “getting to talk about things I never get to with other people”, or “thinking about things in a different way” all giving the impression that the interview process was a positive experience. This suggests that fear or embarrassment as catalysts for not being truthful was minimized. Lastly, it must be considered that women were asked to both reflect on prior experiences and project what they might do in theoretical or future cases. Recall bias and the ability to change views over time have the potential to distort stories and perspectives.

The strongest point made by these findings is that a future direction for improving public health may be in empowering women to be agents in their own best interests. Access to accurate information, providing models for self-advocacy, and validating experiences are just a few examples of how this might be accomplished. What is also exciting is that nurses are in a key position to assist in the empowerment process and optimally enhance women’s control over their health. How to best accomplish this process and how nurses might best function in this capacity should be a research priority. This is well within the scope of nursing practice and this philosophy moves nursing forward from paternalistic carers that ‘know best’ to a more social justice orientation and a patient partnership relationship for self-recognition of personal power as an agent for change.

CHAPTER 5

DISCUSSIONS AND CONCLUSIONS

Summary of Findings

Paper 1

The purpose of the first paper composing this dissertation was to present broader definitions of pregnancy intention than what are commonly seen in the literature and used as a basis for contemporary health interventions. An integrative review of the literature was conducted to according to methods suggested by Whittemore and Knafl (2005). Analysis proceeded with examinations of both data findings and study conclusions. Data extracted from literature findings were found to cluster under six major themes: 1) Expectancy and Planning, 2) Wantedness, 3) Feasibility, 4) Happiness, 5) Responsibility, and 6) Readiness and Timeliness. Data comparison for the research conclusions included grouping particular concepts together with particular attention to how interpretations of findings data expanded current concepts of pregnancy intention.

The findings of this paper were interesting and validate the need to expand conceptualizations of pregnancy intention that improve measurement and inform intervention and policy. This paper asserts that realizing differences between retrospective and prospective views of pregnancy experiences, considering contextual influences, and understanding the implication of labels and constructing pregnancy as a "problem" may be places to begin this transformation and suggests direction for future research.

Understanding the social context of experiences of pregnancy intention are important in how women in define intention and supports the need of additional exploration of how personal relationships and social forces define behavior. Another critical outcome of conducting this review was finding support for a discussion regarding how defining unintended pregnancy as a "problem" implicates researchers, providers, public policy makers, and public health interventionists in the potential marginalization of women perceived to be the "cause" of the

"problem" of unintended pregnancy. In light of already compromised efforts at intervention as evidenced by increasing numbers of abortions and decreases in contraceptive use in certain populations, we risk alienation of women and children who might be best served from our efforts. Ultimately this review demonstrated the complexity of pregnancy intention and how women add understanding to the concept by connecting it to their experience in their social context.

Paper 2

The purpose of the second paper was to describe the contextual components of demographics, sexual histories, and perceptions that may contribute to knowledge, access, and use of emergency contraception. A web survey collected data on 2007 women attending a large, Midwestern university. Resulting data provided statistical descriptions and some predictors of EC use and knowledge. Women under the age of 25, and graduate students, and White/Caucasian women most frequently responded to the survey. A total of 73% of women reported they were currently sexually active with the largest majority using a primary method of birth control. A total of 261 (13.1%) respondents had prior pregnancies and 51.6% (N=1029) had experienced a "false alarm".

Several findings from the survey demonstrated important contributions to the literature. Many findings were able to be compared to the existing studies. Women in the current university setting were no different in their sexual activity when compared to similar women across the country. The fact that half of all women who had ever been sexually active reported experiencing a "false alarm" appeared to be high, however this was consistent with findings in one of the similar studies conducted after EC was made available over the counter. This, in addition to other factors seems to suggest that women who are resolute about preventing pregnancy in college could use EC as part of their protective arsenal.

It was also of note that almost all women knew something could be done post-intercourse to prevent pregnancy and the majority knew about EC prior to participating in the survey. It was

also exciting that in this study, women's knowledge of where to access EC was higher than both like studies. Also the fact that over two-thirds of women had used EC suggests that the increase in access and related information dissemination and advertising has had some influence. Despite the apparent triumph of increase knowledge of access and use, the contrast of how many women do not have accurate information is puzzling. Large numbers of women believed that EC could be taken up through the first semester of pregnancy and that it could cause birth defects if taken with a concurrent pregnancy. This lack of inaccurate information combined with overt admittance that EC is similar to abortion makes a strong case for further exploration of exactly why these perceptions endure.

Several other aspects of this study create additional research questions to guide future research. First, there appears to be some differences is use and perhaps accepts in relation to race and ethnicity. For example, women of Asian/Pacific Islander descent were more likely to use EC than White/Caucasian women and although not statistically significant, this was found to be the case in Hispanic/Latina women as well. Reasons for this were unclear. Conducting additional inquiries with larger samples of notable subgroups could better describe any potential differences. The second remarkable finding was the number of women who report that they "never" have had unprotected sex in the last 12 months composed one-third of all users. This finding was important due to that it may help dissemble the myths surrounding women who use EC as a result of wonton expression of sexuality who didn't use birth control or were in some way implicit in a failure to secure pre-intercourse birth control prevention. What it may also suggest is that EC is being used in the case of a primary method failure and women are aware that they have a backup plan in the case that something unexpected happens to threaten their efforts at pregnancy prevention. Ultimately, the findings of this study demonstrate that increased access to EC has produced some incremental change in knowledge and use, however its potential remains underrealized and additional study is needed to best determine why and how additional changes can be made.

Paper 3

The purpose of the third paper is to describe the key concepts discovered in the contextual examination of women's stories and how personal convictions, embodiment, and empowerment influenced individual agency. Data for this paper was obtained from the 35 interviews of the larger mixed-methods study. Accounts described the meaning of pregnancy at this time in life, reactions of others, and perceptions of sexual experiences, history of contraception, and what they would do if they became pregnant.

This study was interesting in the revelation of a process of regarding women's development of convictions, how these were embodied, and processes of empowerment all combining to influence individual agency in regards to pregnancy intention. The intersection of conviction, embodiment, and empowerment was critical to any outcome. Disconnections between concepts causing interruptions reflected in a lack of action. When beliefs and the ability to act on beliefs were contiguous, the result was agency. When beliefs were not embodied or women were not empowered this reflected in lack of agency. Convictions were tied to larger shared bodies of beliefs and the act of embodiment created personal rules or boundaries for acceptable behavior. The process of empowerment was often a transition from the potential to act to action. This was an iterative course becoming visible as agency. Agency could not be realized if the process became broken by the failure of a conviction to be embodied or in the absence of empowerment reinforcing the connection of each element not present in isolation.

The women's stories illustrated a deeper process with negotiations of pregnancy intention. This novel look expands the understanding of what processes are occurring that determine women's options for controlling fertility and readiness for motherhood. Also, of importance is that knowledge of this process highlights ways in which nursing intervention might occur, and women can be empowered to be agents in their own best interests. Comprehension of how women's convictions are antecedent to or contribute to empowerment which in turn affects agency in reproductive behavior and decision making could be one missing link to building effective public health intervention programs. Ultimately, this study takes into

account women's contextual factors, how these translate into influence over pregnancy intention and highlights ways in which intervention might assist this process and result in women's empowerment and improved public health.

Overall Limitations

Overall limitations included the publication bias and the double interpretive process found in the integrative review, engaging in research that includes potentially sensitive topics, bias due to convenience sampling, recall bias, and recruitment of participants from a setting that does not reflect the general population.

It was likely that the literature search used to create the sample of source materials for the integrative review was not adequate to capture all literature fitting the criteria of inclusion. Despite this, a procedure with several built-in double checks aimed to optimize the effort to include as many primary sources as were readily available by these methods. The approach to this particular integrative review also created the potential for bias introduced by a double interpretive process. To limit the possibility, interpretations were checked primary interpretations and combined with new insights and the goal of broadening conceptualizations of wantedness, planning, expectedness, and happiness was met.

Asking women to talk about intercourse, birth control, and sexual histories are likely to be considered sensitive topics and may result in incomplete truthfulness. Safeguards of confidentiality and establishing comfort and rapport during the interview process attempted to reduce this likelihood. The participation of 14% of the female students invited to participate in the survey makes knowing if these women are representative of all females at the university impossible. Lack of generalizability to a broader population is also compounded by the choice to recruit only women who attended the university as students. In either case, generalizability was not the ultimate goal but highlights a need for future research to find ways in which prevalence of characteristics of emergency contraception can be examined. Instead, the sample was diverse in many ways. Recall bias is also potential as women were asked both in survey and interview

methods to recall their pregnancy and sexual histories in addition to projecting future theoretical experiences. There is realization that time may distort perceptions and stories. Questions regarding how education was financed revealed that economic status varied as about half of the participants reported that they required student loans, part or full time jobs, or family assistance to pay for their education. This variability in economic background, a Midwest public university setting, and including women age 18-35 in the sample population further sets this study apart from prior studies. Also, racial/ethnic diversity found in over 10% or 200 of the participants was large enough to allow for some meaningful comparisons.

Integrated Findings and Implications

The findings of this project demonstrate that pregnancy intention in the reality of women's experiences is quite different than current definitions of unintended pregnancy and associations between pregnancy intention and mother-infant outcomes are far from straightforward. Research is overrepresented by women's pregnancy experiences that look back at pregnancies that have already occurred. Understanding these recalled events, the associated challenges, joys, reactions of others around this real event are certainly important however these are quite different than prospective views of pregnancy that have yet or occur. The considerations of how potential childbearing will affect future lives and planning are likely and in many ways quite different than coping with immediate outcomes of a pregnancy.

Pregnancy intention exceeds use or non-use of birth control and timing of a pregnancy and occurs within a complex web of religious, cultural, historical, socio-political, and personal relationship influences. To move forward, pregnancy intention needs to be redefined to reflect the process and contextual influences of women's pregnancy experiences. This redefinition and reconceptualization needs to be reflected in measurement of pregnancy intention and better capture important factors so that precursors and risks can be better identified and inventions built to intervene at critical points. Indicators of intention based on use of contraception and whether a pregnancy was mistimed or appropriately timed need to be supplanted with support of a

pregnancy by important others' and women's perceptions of how a pregnancy would affect their economic futures, care of other children, and women's perceived social, cultural, or religious consequences of current childbearing. Women's convictions and ability to feel empowerment and to follow their convictions needs to be considered within the overall process and context. Definitions and measurement need to reflect the complexity of pregnancy intention that has been demonstrated to exist in women's experiences.

Findings from this project demonstrate an additional need for caution in the conceptualization of unintended pregnancy as a problem caused by women who neglect to control their fertility and as a result become responsible for social and health ills as a result of this failure. The harm in this chain of reasoning are multifold. First, such reasoning presumes women to have independent control over their fertility, when in fact it has been demonstrated that contextual forces such as important primary relationships, religion, culture, history, and economics are important external influences on pregnancy intention. Thus social and economic forces shape women's choices as well as their ability to act on those choices and are therefore equally if not more responsible for negative consequences of childbearing. Second, concepts such as planning have different meanings for women based on social position and economic circumstances. Planned, expected, and well-timed pregnancies are often based on white, middle-class expectations for pregnancy that occur as one event in a series of prescribed life events. Failure to follow these rules can mean marginalization resulting in substantial implications for mother and infant health. Lastly, the duplication of oppression in science and policy by blaming women for pregnancies and labeling them social problem creates the potential for additional harm by alienating women from needed interventions and further moving them to the margins of society. This likely has its own consequence for seeking prenatal care or for allowing women to arm themselves with pregnancy prevention such as EC such behaviors characterize them as sexually promiscuous or irresponsible.

This project highlights considerations for pregnancy intention that have clinical, research and policy implications. The complexity of pregnancy intention needs to be considered in how

providers interface with women who are pregnant, considering pregnancy, or avoiding pregnancy. Future research needs to assist in further informing science regarding the complexities of pregnancy intention, improving definition and measurement and evaluating interventions that may best empower women and reduce harmful consequences of pregnancy. Policy makers and interventionists will need better definitions and measurement to best provide women with tools and power in which to control fertility, access services, self-advocate, and minimize risk of social, economic, or health harm.

Clinical Implications

Clinical providers offer the front line of interface with individual women to be able to assess pregnancy intention and uncover factors associated with risk in present or future pregnancies as a result of a pregnancy or future pregnancy. Specifically, clinical providers need to be aware of the complexity of pregnancy intention and consider pregnancy planning and expectations apart from whether a women in using birth control. Perhaps providers need to include questions regarding the meaning of a pregnancy now or in the future for a woman under their care to better understand what barriers and support she might experience in relation to childbearing or preventing pregnancy.

In general, framing nursing in ideologies that fully engage the needs of the individual while considering the contextual environment with conscious awareness of social, political, and economic influences is critical for advancement of nursing science and aims of improving health. Furthermore, required changes highlighted by this project aimed to demonstrate ways in which women's reproductive health and all of public could be improved are well within the scope of nursing. Empowerment can be a significant tool that can work to improve public health and expand the nursing profession in a way that is consistent with these ideologies that take larger contextual influences into account (Institute of Medicine, 2004). Combining the awareness of needs with the tools in which to accomplish goals of improved health can place nurses in the critical role of assisting women to negotiate the rapidly changing health environment that assist them to advocate for their own reproductive health needs.

Implications for future research

The results of this dissertation project highlight the need for expansion in how pregnancy intention is considered. The incongruencies of women's experiences with current conceptualizations and failures to consider important contextual elements suggest we do not fully understand pregnancy intention. Without these complete understandings, the validity of constructs in which we base definitions and measurement are threatened. In addition to additional exploration of contextual influences and additional inquiries into prospective perceptions of pregnancy, ways in which measures can reflect the expansion of concepts related to pregnancy intention and optimally inform intervention and policy needs further exploration.

It might be that a deeper understanding of pregnancy intention is prerequisite to inquiries further exploring knowledge, perceptions and use of emergency contraception. Additional inquiries into EC need to be conducted on populations that are different from college women. Questions remain regarding the persistence of EC's equation with abortion and potential differences attributed to racial or ethnic differences.

This research has also suggested ways in which nurses can affect reproductive health outcomes. One intervention is through the empowerment of women to assist them in being agents in their own best interests. Additional research is required to better understand what nursing actions might assist empowerment and how this interfaces with women's convictions and the embodiment of these convictions.

This project would also be incomplete without a discussion of the fit of Ecosocial theory to the overall findings. Krieger and colleagues collective work provides a framework by with power structures can be examined. This overlay on the data collected for this needs closer examination. Included with this is a need for close examination of how embodiment of convictions and displays of individual agency fit with current framework. The possibility of placing individual agency in the context of "cumulative interplay" with the larger social world and contrast with the current conceptualization of agency in regards to responsibility for power imbalance is certainly an area of further inquiry.

Implications for policy

Policy implications includes the need to educate policy makers and interventionists regarding the inadequacy of current conceptualizations of pregnancy intention and demand better and expanded definitions and measurements in which policy and interventions are based. Some avenues that may be available may be organizations that supply health information and pregnancy prevention to populations of women. This may mean gaining access to local health department policy makers, clinic providers, or family planning counselors that interface with low-income women seeking financial assistance from public funds. Another possibility is gaining access to members of the state board of pharmacy and sharing research findings regarding EC. The goal of this opportunity would be to increase understanding of women's experience with EC, and perhaps decrease the stigma of women seeking this means of pregnancy prevention are not necessarily sexually promiscuous, and empower pharmacists to best advocate for women who want to prevent a pregnancy combining both regular methods with EC. All efforts at influencing policy would be conducted with the intent that larger avenues would become continually available and allow efforts that would optimize women's control over their fertility and reduce harmful consequences from pregnancy.

Conclusion

The results of this dissertation project highlight the need for expansion in how pregnancy intention is considered. Findings of the integrative review suggest that current understanding of women's experiences with pregnancy especially outside the confines of "planning" is incomplete. The lack accuracy prevents the identification of factors that contribute to negative health consequences that have lasting impact on women and children. Hitting targets in most need of public health interventions becomes akin to shooting with one eye closed. This same lack of a holistic conceptual picture is reflected in remaining questions regarding the non-use and inaccurate knowledge of emergency contraception and examining the process of how convictions are embodied, pair with empowerment and influence agency. The implications are that without

this understanding attempts at measurement miss their mark threatening construct validity of current measures. Considering the fact that many interventions are based on large scale studies that use these measures and subsequently build interventions, it is critical our measurements "get it right". We need to be able to correctly identify factors that contribute to negative health consequences and have lasting impact on women and children while at the same time not being implicit in labels that assign blame, relegate certain pregnancies as "problems", and contribute to oppression or marginalization of women who are already disadvantaged. Researchers and public health interventionists need to optimally ensure that women targeted for interventions are those most in need. Only then can the goal of healthy babies and women regardless of expected or unexpected conception become closer to being realized.

APPENDIX A

IMPLIED CONSENT DOCUMENT

Project Title: **The Social Context of Unintended Pregnancy in College-aged Women**

Principal Investigator: Melissa Lehan Mackin

Research Team Contact: Melissa Lehan Mackin: University of Iowa, College of Nursing; Melissa-lehan@uiowa.edu or 319-341-8223

I invite you to participate in a research study. The purpose of the study is to find out what college women know and think about ways that unintended pregnancy can be prevented.

We are inviting you to be in this study because you are a female University of Iowa student who is between 18 and 35 years of age who can speak and read English. Approximately 1200 people will take part in this study at the University of Iowa.

If you agree to be in the study, I will ask you to complete the on-line survey following this document. You will be asked questions about your demographic information (gender, age, year in college, race/ethnicity, , your high school class size, how you pay for college, and health insurance coverage), sexual history, and contraceptive knowledge and history. The survey takes about 15-20 minutes to complete. You may skip any questions that you do not wish to answer.

We will also conduct interviews as part of this study. We will invite persons who complete the survey to participate in an interview about their responses on the survey. In the survey you will be asked to provide your contact information if you are interested in being in the interview part of the study. You will be asked to give a separate consent for the interview procedure. You may participate in the survey part of the study without agreeing to be contacted about the interview part of the study.

We will keep the information you provide confidential, however federal regulatory agencies and the University of Iowa Institutional Review Board (a committee that reviews and approves research studies) may inspect and copy records pertaining to this research. The data collected will remain anonymous, unless you provide your identifying information for the interview part of the study. The study information will be collected on a secure website and stored on password protected computers. If you provide your identifying information for the interview part of the study, we will use a numerical code to identify the data. The study identification code will be linked to your name. The list linking your name and your study identification code will be stored in a separate location that is accessible only to the researchers Myself and members of my research team will be the only persons to have access to the information you give me.

It is possible that answering questions relating to your sexual beliefs and practices may be awkward or uncomfortable. You may skip any questions you do not wish to answer. If you have any concerns about your responses, I will give you a list of resources in the Iowa City area and

you should contact them to discuss your concerns. You will not benefit personally from being in this study. However we hope that others may benefit in the future from what we learn as a result of this study.

You will not have any costs for being in this research study. Your name will be entered into a drawing for one of 40 $10 gift cards good at any Target store. You will be asked to provide your name and contact information at the end of the survey for entry into the drawing. Your name and contact information will be stored separately from your survey responses and will not be linked to your responses. You do not need to provide your name and contact information to participate in the survey part of the study.

Taking part in this research study is completely voluntary. If you decide not to be in this study, or if you stop participating at any time, you won't be penalized or lose any benefits for which you otherwise qualify.

If you have questions about the rights of research subjects, please contact the Human Subjects Office, 300 College of Medicine Administration Building, The University of Iowa, Iowa City, IA 52242, (319) 335-6564, or e-mail irb@uiowa.edu. To offer input about your experiences as a research subject or to speak to someone other than the research staff, call the Human Subjects Office at the number above.

Thank you very much for your consideration of this study. If you wish to participate in that study, please click the NEXT PAGE button to go to the first survey question. If you do not wish to participate in the study, you may close your web browser without answering any questions.

APPENDIX B

INVITATION TO PARTICIPATE IN SURVEY

Social Context and Unintended Pregnancy

Project Title: **The Social Context of Unintended Pregnancy in College-aged Women**

Principal Investigator: **Melissa Lehan Mackin**

Research Team Contact: **Melissa Lehan Mackin:** University of Iowa, College of Nursing; Melissa-lehan@uiowa.edu or 319-341-8223

I invite you to participate in a research study. The purpose of the study is to find out what college women know and think about ways that unintended pregnancy can be prevented.

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If you agree to be in the study, I will ask you to complete the on-line survey following this document. You will be asked questions about your demographic information (gender, age, year in college, race/ethnicity, your high school class size, how you pay for college, and health insurance coverage), sexual history, and contraceptive knowledge and history. The survey takes about 15-20 minutes to complete. You may skip any questions that you do not wish to answer.

We will also conduct interviews as part of this study. We will invite persons who complete the survey to participate in an interview about their responses on the survey. In the survey you will be asked to provide your contact information if you are interested in being in the interview part of the study. You will be asked to give a separate consent for the interview procedure. You may participate in the survey part of the study without agreeing to be contacted about the interview part of the study.

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be awkward or uncomfortable. You may skip any questions you do not wish to answer. If you have any concerns about your responses, I will give you a list of resources in the Iowa City area and you should contact them to discuss your concerns. You will not benefit personally from being in this study. However we hope that others may benefit in the future from what we learn as a result of this study.

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Thank you very much for your consideration of this study. If you wish to participate in that study, please click the NEXT PAGE button to go to the first survey question. If you do not wish to participate in the study, you may close your web browser without answering any questions.

APPENDIX C

LIST OF RESOURCES

If you are concerned about your sexual health or are a victim of sexual assault, these resources listed below are available to you in this area.

Resource	Phone Number	Website Address:
University of Iowa Student Health Service	**335-8394**	**http://www.uIowa.edu/~shs/**
University of Iowa Counseling Center	**335-7294**	**http://www.uIowa.edu/~ucs/**
The Rape Victim Advocacy Center	**(Iowa City area) Rape Crisis Line 335-6000** **(Statewide) Iowa Sexual Abuse Hotline 1-800-284-7821**	**http://www.rvap.org/pages/home/**
Kirkwood Campus Health	**319-398-5588**	**E-mail**: fhealth@kirkwood.edu
Saint Luke's Hospital	**319/369-7105**	**http://www.stlukescr.org/**
Mercy Medical Center	**319-398-6011**	**http://www.mercycare**

APPENDIX D

HARD COPY VERSION OF WEB SURVEY

What is your gender?

- ☐ Male
- ☐ Female

What is your age in years? (Continues from age 18 to age 35)

☐ 18 ☐ 19 ☐ 20 ☐ 21 ☐ 22 ☉

What year are you in college?

- ☐ Freshman
- ☐ Sophomore
- ☐ Junior
- ☐ Senior
- ☐ Graduate student
- ☐ Not Applicable
- ☐ Other (please specify)

If you selected other, please specify:

Approximately how many students were in your high school graduating class?

- [ ] Less than 100
- [ ] 100-299
- [ ] 300-499
- [ ] 500-800
- [ ] More than 800
- [ ] I was home-schooled
- [ ] Not Applicable
- [ ] Unsure
- [ ] Other (please specify)

If you selected other, please specify:

How would you describe your race/ethnicity? Select all that apply.

- [ ] Caucasian/White
- [ ] African American
- [ ] Indigenous or Aboriginal Person
- [ ] Asian/Pacific Islander
- [ ] Hispanic
- [ ] Latino
- [ ] Multiracial
- [ ] Other (please specify)

If you selected other, please specify:

How do you pay for college? Select all that apply.

- ☐ student loans
- ☐ scholarships
- ☐ grants
- ☐ part or full time job
- ☐ parents or other family members assist to pay costs
- ☐ Other (please specify)

If you selected other, please specify:

What kind of health care coverage do you have, if any? Select all that apply.

- ☐ private health insurance
- ☐ prepaid plans such as HMOs--health maintenance organizations
- ☐ Medicare
- ☐ Medicaid
- ☐ No insurance
- ☐ Unsure
- ☐ Other (please specify)

If you selected other, please specify:

At any time in your life, have you ever had vaginal intercourse with a man? (Do not count oral sex, anal sex, heavy petting or other forms of sexual activity that do not involve penile-vaginal penetration. Do not count sex with a female partner.)

- ☐ Yes
- ☐ No

In the last three months have you had vaginal intercourse with a man? (Do not count oral sex, anal sex, heavy petting or other forms of sexual activity that do not involve penile-vaginal penetration. Do not count sex with a female partner.)

- ☐ Yes
- ☐ No

Are you (or your male sex partner(s)) currently using a birth control method to prevent pregnancy? This includes male or female sterilization.

- ☐ Yes
- ☐ No
- ☐ Not Sure
- ☐ Other (please specify)

If you selected other, please specify:

Some people have had times when they have had vaginal intercourse without using any method of birth control. How often in the last 12 months would you say you have had vaginal intercourse without using any method of birth control?

- ☐ Every time
- ☐ much of the time
- ☐ a few times
- ☐ one time
- ☐ Never
- ☐ Other (please specify)

If you selected other, please specify:

Have you ever been pregnant?

- ☐ Yes
- ☐ No

Have you ever had a miscarriage or spontaneous abortion?

- ☐ Yes
- ☐ No
- ☐ Other (please specify)

If you selected other, please specify:

Have you ever had a medical or surgical abortion?

- ☐ Yes
- ☐ No
- ☐ Other (please specify)

If you selected other, please specify:

How many children do you currently have?

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 or more

Have you ever thought you might be pregnant but it turned out to be a "false alarm"?

- ☐ Yes
- ☐ No
- ☐ Other (please specify)

If you selected other, please specify:

To the best of your knowledge, if a woman has unprotected sex is there anything she can do <u>following intercourse</u> that will <u>prevent</u> pregnancy?

- ☐ Yes
- ☐ No
- ☐ Not Sure

Emergency contraception **is also known as Plan B or "the morning after pill". For the remainder of this survey the term *emergency contraception* will be used to represent all of these terms.**

- ☐ I have read this statement

Have you ever used *Emergency Contraception*?

- ☐ Yes
- ☐ No
- ☐ Not Sure
- ☐ Other (please specify)

If you selected other, please specify:

Would you ever consider using *emergency contraception*?

- ☐ Yes
- ☐ No
- ☐ Not Sure
- ☐ Other (please specify)

If you selected other, please specify:

Additional comments:

Do you know anyone (not including yourself) who has taken *emergency contraception*?

- ☐ Yes
- ☐ No
- ☐ Not Sure
- ☐ Other (please specify)

If you selected other, please specify:

Consider these statements about *emergency contraception* and indicate whether you agree, disagree, or are unsure with the statement being made.

	Agree	Disagree	Not Sure
Emergency contraception is most effective when taken within the first few days after intercourse	☐	☐	☐
Emergency contraception can cause an abortion	☐	☐	☐
Emergency contraception makes a woman ovulate	☐	☐	☐
Emergency contraception can kill or harm sperm	☐	☐	☐
Emergency contraception can prevent egg implantation	☐	☐	☐
Emergency contraception can be taken up to the end of the first trimester of pregnancy	☐	☐	☐
Emergency contraception can cause birth defects if it is taken when a women is pregnant	☐	☐	☐
Emergency contraception can be purchased directly from a pharmacist.	☐	☐	☐
Emergency contraception requires a doctor's prescription.	☐	☐	☐
Emergency contraception can be obtained in advance and kept for future use	☐	☐	☐

People have a variety of views about *emergency contraception*. Would you approve of using *emergency contraception* in any of the following situations:

	Yes	No	Not Sure
If a woman was raped	☐	☐	☐
If a man and women were using a condom but it broke	☐	☐	☐
If a man and women did not use any birth control during intercourse	☐	☐	☐
In place of a regular form of birth control	☐	☐	☐

On average *emergency contraception* costs about $60 in this area. Would you purchase *emergency contraception* if:

	Yes	No	Not Sure
You had to pay this money yourself	☐	☐	☐
You only had to pay a portion of the cost up to $20	☐	☐	☐
Your insurance company or some other source paid for the entire cost	☐	☐	☐
You would never purchase emergency contraception under any circumstances	☐	☐	☐

Do you know where women can get *emergency contraception* if they needed it?

	Yes	No	Not Sure
Community health clinic such as the Emma Goldman Clinic or Planned Parenthood	☐	☐	☐
Student health center	☐	☐	☐
Emergency Treatment Center	☐	☐	☐
Pharmacy by prescription	☐	☐	☐
Pharmacy by purchasing directly from pharmacist	☐	☐	☐

Had you ever heard of *emergency contraception* before taking this survey?

- ☐ Yes
- ☐ No
- ☐ Not Sure
- ☐ Other (please specify)

If you selected other, please specify:

APPENDIX E

ELEMENTS OF CONSENT FOR INTERVIEW

Project Title: **The Social Context of Unintended Pregnancy in College-aged Women**

Principal Investigator: **Melissa Lehan Mackin**

Research Team Contact: **Melissa Lehan Mackin:** University of Iowa, College of Nursing; Melissa-lehan@uiowa.edu or 319-341-8223

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It is possible that answering questions relating to your sexual beliefs and practices may be awkward or uncomfortable. You may skip any questions you do not wish to answer. If you have any concerns about your responses, I will give you a list of resources in the Iowa City area and

you should contact them to discuss your concerns. You will not benefit personally from being in this study. However we hope that others may benefit in the future from what we learn as a result of this study.

You will not have any costs for being in this research study. Your name will be entered into a drawing for one of 40 $10 gift cards good at any Target store. You will be asked to provide your name and contact information at the end of the survey for entry into the drawing. Your name and contact information will be stored separately from your survey responses and will not be linked to your responses. You do not need to provide your name and contact information to participate in the survey part of the study.

Taking part in this research study is completely voluntary. If you decide not to be in this study, or if you stop participating at any time, you won't be penalized or lose any benefits for which you otherwise qualify.

If you have questions about the rights of research subjects, please contact the Human Subjects Office, 300 College of Medicine Administration Building, The University of Iowa, Iowa City, IA 52242, (319) 335-6564, or e-mail irb@uiowa.edu. To offer input about your experiences as a research subject or to speak to someone other than the research staff, call the Human Subjects Office at the number above.

Thank you very much for your consideration of this study. If you wish to participate in that study, please click the NEXT PAGE button to go to the first survey question. If you do not wish to participate in the study, you may close your web browser without answering any questions.

APPENDIX F

INTERVIEW GUIDE

My name is Melissa Lehan Mackin and I am the principal investigator for this project. As you noted in the consent information, I am interested in how women such as yourself think about unintended pregnancy and emergency contraception. You were chosen to be invited here for an interview based on some of your responses on the web-survey. I have several questions here to guide our conversation but I want to hear your story and may ask you to elaborate on specific points that you mention. We will talk for about an hour. I also want to remind you that you may skip any question you do not want to answer or stop the interview at any time.

I. Let's start by telling me a little bit about yourself.

A. Can you tell me your name and what you preferred to be called?

B. How are things going for you here at UI?

II. I wanted to show you the preliminary survey results that you participated in during the Spring semester of 2009 . *(Present some critical findings related to characteristics like/unlike the invited participant.)*

A. What do you think of this information?
B. Where do you think you fall within these responses?
C. Are you surprised by anything? Why?
D. Did you expect that this is how you would fall in the distribution?
E. Do you agree or disagree with some of the minority/majority of the findings?

III. So you are *(say age)* years old and a *(say year in college)* in college. Tell me about your thoughts about pregnancy at this time in your life.

A. Would a pregnancy be a welcome event for you?

1. **YES** -So you feel a getting pregnant might be a good thing for you, can you tell me more about that?

2. **NO**-So getting pregnant wouldn't necessarily be a good thing for you right now. Can you tell me more about that?

3. **UNSURE**-So there might be both good and bad things associated with getting pregnant right now. Can you tell me about some of those things?

B. Has this been what you have always felt or have your thoughts changed over time? If your thoughts have changed over time why do you think that is?

IV. Do you think that it is likely that you could get pregnant at this time in your life and can you tell me why you think that is?

A. **NOT SEXUALLY ACTIVE**

1. If you were sexually active do you think you would use birth control?

a. **YES**-tell me what you think that might be like?

b. **NO**-tell me more about what you think of about this. Do you think other women who don't want to be pregnant should use birth control?

B. PHYSICALLY UNABLE TO GET PREGNANT

substitute best female friend for "you"

C**. USING BIRTH CONTROL**

Would you want to share your thoughts about your experiences with birth control?

D. PREGNANCY IS POSSIBLE

What are your thoughts about birth control?

E. OTHER

Please tell me more about your thoughts on this.

V. I know you said _(briefly summarize what was said about likelihood of getting pregnant)__ but if you *(or your best female friend)* became pregnant at this time in your life, can you tell me what some of the important people in your life might think? *(Follow with prompts as necessary.)*

A. your sexual partner
B. your sister
C. your brother
D. your best friend here at UI
E. your mother
F. your father
G. your neighbor back home
H. your minister or a fellow church member
I. your best friends from high school (male or female?)

VI. Can you think of other things you would think about that might influence how you would feel if you were pregnant? Which ones do you think have the strongest influence? Have you always felt this way or do you think your thoughts have changed over time. If your thoughts have changed why do you think that is?

VII. Have you ever had the experience where you were pregnant or you thought you might be pregnant? Can you tell me about that experience and how you felt? What do you think were some of the strongest influences on how you felt at that time?

VIII. I know you told me _(briefly summarize what was said about thoughts about birth control) but I also want to know what you think about emergency contraception. Do you and your friends know the drug by the name emergency contraception or do you call it something else?

1. **HISTORY OF TAKING EC**- You indicated in the survey you have taken EC in the past. Would you be willing to talk about that experience?

Given your experience, imagine that I am a friend who just had unprotected intercourse. Would you tell me about EC? What would you tell me about EC? Have you always felt this way or do you think your thoughts have changed over time. If your thoughts have changed why do you think this is?

2. **NEVER TAKEN EC**-Imagine that I am a friend who just had unprotected intercourse. Would you tell me about EC? What would you tell me about EC? Have you always felt this way or do you think your thoughts have changed over time. If your thoughts have changed why do you think this is?

VIII. When you think about preventing pregnancy what are some of the things that have influenced your ideas about that?

A. Can expand on any of the influences you mentioned previously or other influences? *(Follow with prompts as necessary.)*

a. family
b. friends
c. partner
d. religious beliefs
e. cultural beliefs
f. resources/cost/accessibility
g. rules or laws

B. Which ones do you think have the strongest influence?

C. Have you always felt this way or do you think your thoughts have changed over time. If your thoughts have changed why do you think this is?

IX. Do you think that the environment here at college is different in your hometown in relation to pregnancy? (For example, sexual behavior, support, consequences, attitudes, acceptance, etc.)

Prompt as needed: How are attitudes/expectations different in each place for men and women or boys and girls?

X. How about pregnancy prevention? Is the environment here at college than at home? (For example, pharmacy access, contraception availability, attitudes, acceptance, etc.)

XI. How, if any, is access to emergency contraception different here than in your hometown setting?

That is all the questions I have and I want to thank you for taking the time to talk to me. If you have any questions or concerns please feel free to contact me. I also remind you that if you have concerns about your sexual health I am giving you a list of resources that you may contact to follow-up on any of these concerns.

REFERENCES

Abma, J. C., Driscoll, A., & Moore, K. (1998). Young women's degree of control over first intercourse: An exploratory analysis. *Family Planning Perspectives*, (30(1)), April 21.

Abma, J. C., Martinez, G. M., & Copen, C. (2010). Teenagers in the united states: Sexual activity, contraceptive use and childbearing. *National Survey of Family Growth. National Center for Health Statistics, Vital Health Statistics, 23*(30)

Adimora, A. A., & Schoenbach, V. J. (2005). Social context, sexual networks, and racial disparities in rates of sexually transmitted infections. *The Journal of Infectious Diseases, 191 Suppl 1*, S115-22.

American College of Obstetricians and Gynecologists. (2010). ACOG practice bulletin no. 112: Emergency contraception. *Obstetrics and Gynecology, 115*(5), 1100-1109.

Andrews, J. L., & Boyle, J. S. (2003). African american adolescents' experiences with unplanned pregnancy and elective abortion. *Health Care for Women International, 24*(5), 414-433.

Apple, M. (1996). Introduction. In P. F. Carspecken (Ed.), *Critical ethnography in educational research* (). New York: Routledge.

Ayres, L. (2000). Narratives of family caregiving: The process of making meaning. *Research in Nursing & Health, 23*(6), 424.

Ayres, L. (2007a). Qualitative research proposals--part IV: Data management. *Journal of Wound, Ostomy, and Continence Nursing : Official Publication of the Wound, Ostomy and Continence Nurses Society / WOCN, 34*(4), 365-367.

Ayres, L. (2007b). Qualitative research proposals--part V: Rigor in data analysis. *Journal of Wound, Ostomy, and Continence Nursing : Official Publication of the Wound, Ostomy and Continence Nurses Society / WOCN, 34*(5), 489-491.

Ayres, L., Kavanaugh, K., & Knafl, K. A. (2003). Within-case and across-case approaches to qualitative data analysis. *Qualitative Health Research, 13*(6), 871.

Ayres, L., Knafl, K. A., & Tripp-Reimer, T. (2008). The best of both worlds: The interdependence of software and "peopleware". *Research in Nursing & Health, 31*(2), 95-97.

Ayres, L., & Poirier, S. (1996). Focus on qualitative methods. virtual text and the growth of meaning in qualitative analysis. *Research in Nursing & Health, 19*(2), 163.

Aziken, M. E., Okonta, P. I., & Ande, A. B. (2003). Knowledge and perception of emergency contraception among female nigerian undergraduates. *International Family Planning Perspectives, 29*(2), 84-87.

Barnett, E., & Casper, M. (2001). A definition of "social environment". *American Journal of Public Health, 91*(3), 465-465.

Bell, T., & Millward, J. (1999). Women’s experiences of obtaining emergency contraception: A phenomenological study. *Journal of Clinical Nursing, 8*(5), 601-609.

Boonstra, H. (2002). Emergency contraception: The need to increase public awareness. *The Guttmacher Report on Public Policy*, (5(4)), April 21.

Bringer, J. D., Johnston, L. H., & Brackenridge, C. H. (2004). Maximizing transparency in a doctoral thesis: The complexities of writing about the use of QSR*NVIVO within a grounded theory study. *Qualitative Research, 4*(2), 247-265.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.

Brown, S. S., & Eisenberg, L. (1995). Best intentions: Unintended pregnancy & the well-being of children & families. *JAMA, 274*(17), 1332.

Carspecken, P. F. (1996). In Carspecken P. F. (Ed.), *Critical ethnography in educational research*. New York: Routledge.

Center for Disease Control and Prevention. (2011). *Pregnancy risk assessment monitoring system (PRAMS): Questionnaire.* Retrieved June 1st, 2011, from http://www.cdc.gov/PRAMS/Questionnaire.htm

Centers for Disease Control and Prevention. (2010). *NSFG cycle 6 (2002): Public use data files, codebooks, and documentation.* Retrieved June 1, 2011, from http://www.cdc.gov/nchs/data/nsfg/nsfg_2002_questionnaires.htm#female

Centers for Disease Control and Prevention (CDC). (2010). *Unintended pregnancy.* Retrieved July 27, 2010, from http://www.cdc.gov/reproductivehealth/UnintendedPregnancy/index.htm

Chandra, A., Martinez, G. M., Mosher, W. D., Abma, J. C., & Jones, J. (2005). Fertility, family planning, and reproductive health of U.S. women: Data from the 2002 national survey of family growth. *Vital and Health Statistics.Series 23, Data from the National Survey of Family Growth, (25)*(25), 1-160.

Clarke, A. E. (2003). Situational analysis: Grounded theory mapping after the postmodern turn. *Symbolic Interaction, 26*(4), 553-576.

Collins, P. H. (2000). *Black feminist thought: Knowledge, consciousness, and the politics of empowerment* (2nd ed.). New York: Routledge.

Corbett, P. O., Mitchell, C. P., Taylor, J. S., & Kemppainen, J. (2006). Emergency contraception: Knowledge and perceptions in a university population. *Journal of the American Academy of Nurse Practitioners, 18*(4), 161-168.

Cunnane, M. S., Dickson, G., & Cook, R. L. (2006). Women's experiences with emergency contraception in an internal medicine practice. *Journal of Women's Health (2002), 15*(9), 1080-1089.

Custer, M. (1993). Adoption as an option for unmarried pregnant teens. *Adolescence, 28*(112), 890.

Danel, I., Berg, C., Johnson, C. H., & Atrash, H. (2003a). Magnitude of maternal morbidity during labor and delivery: United states, 1993-1997. *American Journal of Public Health, 93*(4), 631.

Danel, I., Berg, C., Johnson, C. H., & Atrash, H. (2003b). Magnitude of maternal morbidity during labor and delivery: United states, 1993-1997. *American Journal of Public Health, 93*(4), 631-634.

Dedobbeleer, N., Beland, F., Contandriopoulos, A. P., & Adrian, M. (2004). Gender and the social context of smoking behaviour. *Social Science & Medicine (1982), 58*(1), 1-12.

DeVault, M., & Gross, G. (2007). Feminist interviewing: Experience, talk, and knowledge. In S. Nagy Hesse-Biber (Ed.), *Handbook of feminist research: Theory and praxis* (). Thousand Oaks, CA: Sage Publications.

Diaz, A., Edwards, S., Neal, W. P., Ludmer, P., Sondike, S. B., Kessler, C., et al. (2004). Obtaining a history of sexual victimization from adolescent females seeking routine health care. *The Mount Sinai Journal of Medicine, New York, 71*(3), 170-173.

Doyle, S. (2007). Member checking with older women: A framework for negotiating meaning. *Health Care for Women International, 28*(10), 888-908.

Federal Food and Drug Administration. (2009). *Plan B: Questions and answers august 24, 2006.* Retrieved July 27, 2010, from http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/ucm109783.htm

Federal Food and Drug Administration. (2010). *FDA statement: Updated FDA action on plan B (levonorgestrel) tablets.* Retrieved June 4, 2011, from http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/2009/ucm149568.htm

Fielding, S. L., & Schaff, E. A. (2004). Social context and the experience of a sample of U.S. women taking RU-486 (mifepristone) for early abortion. *Qualitative Health Research, 14*(5), 612.

Finch, J. (1989). *Family obligations and social change / janet finch*. Cambridge Cambridgeshire : Oxford England ; Cambridge, MA, USA : Polity Press ; B. Blackwell.

Fine, M. (1994). Dis-tance and other stances: Negotiations of power in feminist research. In A. Gatlin (Ed.), *Power and method* (). New York: Routledge.

Finer, L. B., Frohwirth, L. F., Dauphinee, L. A., Singh, S., & Moore, A. M. (2005). Reasons U.S. women have abortions: Quantitative and qualitative perspectives. *Perspectives on Sexual & Reproductive Health, 37*(3), 110-118.

Finer, L. B., & Henshaw, S. K. (2006). Disparities in rates of unintended pregnancy in the united states, 1994 and 2001. *Perspect Sex Reprod Health, 38*(2), 90-6.

Fischer, R. C., Stanford, J. B., Jameson, P., & DeWitt, M. J. (1999). Exploring the concepts of intended, planned, and wanted pregnancy. *Journal of Family Practice, 48*(2), 117-122.

Fisher, B. S., Cullen, F. T., & Turner, M. G. (2000). *The sexual victimization of college women*U.S. Department of Justice, Office of Justice Programs, Research Report.

Free, C., Ogden, J., & Lee, R. M. (2002). *Young women's accounts of factors influencing their use and non-use of emergency contraception* BMJ Publishing Group.

Gannon, S., & Davies, B. (2007). Postmodern, poststructural, and critical theories. In S. Nagy Hesse-Biber (Ed.), *Handbook of feminist research: Theory and praxis* (). Thousand Oaks, CA: Sage Publications.

Giddens, A. (1984). *The constitution of society*. Cambridge, UK: Polity.

Gipson, J. D., Koenig, M. A., & Hindin, M. J. (2008). The effects of unintended pregnancy on infant, child, and parental health: A review of the literature. *Studies in Family Planning, 39*(1), 18-38.

Grewal, I., & Kaplan, C. (1994). Introduction. In I. Grewal, & C. Kaplan (Eds.), *Scattered hegemonies* (). Minneapolis: Regents of the University of Minnesota.

Grimes, D. A., & Raymond, E. G. (2002). Emergency contraception. *Annals of Internal Medicine, 137*(3), 180-189.

Heimburger, A., & Ward, V. (2008). Putting the "S" back into sexual and reproductive health. *International Journal of Sexual Health, 20*(1-2), 63-90.

Hickey, M. T. (2009). Female college students' knowledge, perceptions, and use of emergency contraception. *Journal of Obstetric, Gynecologic, and Neonatal Nursing : JOGNN / NAACOG, 38*(4), 399-405.

Higgins, J. A., Hirsch, J. S., & Trussell, J. (2008). Pleasure, prophylaxis and procreation: A qualitative analysis of intermittent contraceptive use and unintended pregnancy. *Perspectives on Sexual & Reproductive Health, 40*(3), 130-137.

Hingson, R., Heeren, T., Winter, M. R., & Wechsler, H. (2003). Early age of first drunkenness as a factor in college students' unplanned and unprotected sex attributable to drinking. *Pediatrics, 111*(1), 34.

Hogan, V. K., & Ferre, C. D. (2001). The social context of pregnancy for african american women: Implications for the study and prevention of adverse perinatal outcomes. *Maternal and Child Health Journal, 5*(2), 67-69.

Honein, M. A., Kirby, R. S., Meyer, R. E., Xing, J., Skerrette, N. I., Yuskiv, N., et al. (2009). The association between major birth defects and preterm birth. *Maternal and Child Health Journal, 13*(2), 164-175.

Hsu, H., Lien, Y., Lou, J., Chen, S., & Wang, R. (2010). Exploring the effect of sexual empowerment on sexual decision making in female adolescents. *Journal of Nursing Research (Lippincott Williams & Wilkins), 18*(1), 44-52.

Hulsey, T. M., Laken, M., Miller, V., & Ager, J. (2000). The influence of attitudes about unintended pregnancy on use of prenatal and postpartum care. *Journal of Perinatology : Official Journal of the California Perinatal Association, 20*(8 Pt 1), 513-519.

Im, E. O., & Chee, W. (2001). A feminist critique on the use of the internet in nursing research. *ANS.Advances in Nursing Science, 23*(4), 67-82.

Institute of Medicine. (2004). Keeping patients safe: Transforming the work environment of nurses., June 20, 2011, from http://books.nap.edu/openbook.php?record_id=10851

Iuliano, A. D., Speizer, I. S., Santelli, J., & Kendall, C. (2006). Reasons for contraceptive nonuse at first sex and unintended pregnancy. *American Journal of Health Behavior, 30*(1), 92.

Jennings, B. M. (2007). Qualitative analysis: A case of software or 'peopleware?'. *Research in Nursing & Health, 30*(5), 483-484.

Jones, R. K., Frohwirth, L. F., & Moore, A. M. (2008). "I would want to give my child, like, everything in the world.". *Journal of Family Issues, 29*(1), 79-99.

Joyce, T. J., Kaestner, R., & Korenman, S. (2000). The effect of pregnancy intention on child development. *Demography, 37*(1), 83-94.

Kavanaugh, K., & Ayres, L. (1998). "Not as bad as it could have been": Assessing and mitigating harm during research interviews on sensitive topics. *Research in Nursing & Health, 21*(1), 91-97.

Keating-Lefler, R., & Wilson, M. E. (2004). The experience of becoming a mother for single, unpartnered, medicaid-eligible, first-time mothers. *Journal of Nursing Scholarship, 36*(1), 23-29.

Kelly, M., & Charlton, B. (1995). The modern and postmodern in health promotion. In R. Bunton, S. Nettleton & R. Burrows (Eds.), *The sociology of health promotion: Critical analysis of consumption, lifestyle, and risk* (). London: Routledge.

Kendall, C., Afable-Munsuz, A., Speizer, I., Avery, A., Schmidt, N., & Santelli, J. (2005). Understanding pregnancy in a population of inner-city women in new orleans--results of qualitative research. *Social Science & Medicine (1982), 60*(2), 297-311.

Ketterlinus, R. D., Henderson, S. H., & Lamb, M. E. (1990). Maternal age, sociodemographics, prenatal health and behavior: Influences on neonatal risk status. *J Adolesc Health Care, 11*(5), 423-31.

Khatiwada, I., McLaughlin, J., Sum, A., Palma, S., & Council for Advancement of Adult Literacy. (2007). *The fiscal consequences of adult educational attainment*Council for Advancement of Adult Literacy.

Klerman, L. V. (2000). The intendedness of pregnancy: A concept in transition. *Maternal & Child Health Journal, 4*(3), 155-162.

Krieger, N. (1994). Epidemiology and the web of causation: Has anyone seen the spider? *Soc Sci Med, 39*(7), 887-903.

Krieger, N. (2001a). A glossary for social epidemiology. *Journal of Epidemiology & Community Health, 55*(10), 693.

Krieger, N. (2001b). Theories for social epidemiology in the 21st century: An ecosocial perspective. *Int J Epidemiol, 30*(4), 668-77.

Krieger, N. (2005). Embodiment: A conceptual glossary for epidemiology. *Journal of Epidemiology & Community Health, 59*(5), 350.

Krieger, N. (2008). Proximal, distal, and the politics of causation: What's level got to do with it? *American Journal of Public Health, 98*(2), 221.

Krieger, N., & Gruskin, S. (2001). Frameworks matter: Ecosocial and health and human rights perspectives on disparities in women's health -- the case of tuberculosis. *Journal of the American Medical Women's Association, 56*(4), 137.

Lather, P. (1986). Issues of validity in openly ideological research: Between a rock and a soft place. *Interchange, 17*(4), 63.

LeCompte, M., & Preissle, J. (Eds.). (1992). *The handbook of qualitative research in education*. San Diego, CA: Academic.

Lee-Rife, S. (2010). Women's empowerment and reproductive experiences over the lifecourse. *Social Science & Medicine, 71*(3), 634-642.

Lehan Mackin, M., & Clark, M. K. (In press). Emergency contraception in Iowa pharmacies before and after over-the-counter approval. J Public Health Nursing

Lincoln, Y. S., & Guba, E. G. (1985). Naturalistic inquiry / yvonna S. lincoln, egon G. guba. Beverly Hills, Calif. : Sage Publications.

Livescribe Inc, . (2009). Introducing pulse. Retrieved November 10, 2009, from http://www.livescribe.com/smartpen/index.html

Luker, K. C. (1999). A reminder that human behavior frequently refuses to conform to models created by researchers. *Family Planning Perspectives, 31*(5), 248.

Macintyre, S. (1997). The black report and beyond: What are the issues? *Social Science & Medicine, 44*(6), 723.

Martin, J. A., Hamilton, B. E., Sutton, P. D., Ventura, S. J., Menacker, F., Kirmeyer, S., et al. (2007). Births: Final data for 2005. *National Vital Statistics Reports : From the Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System, 56*(6), 1-103.

Maxwell, J. A. (1992). Understanding and validity in qualitative research. *Harvard Educational Review, 62*(3), 279-300.

Miles, M., & Huberman, A. M. (1994). *Qualitative data analysis* (second ed.). Thousand Oaks: Sage Publications.

Miller, L. M. (2011). College student knowledge and attitudes toward emergency contraception. *Contraception, 83*(1), 68-73.

Miller, L. M., & Sawyer, R. G. (2006). Emergency contraceptive pills: A 10-year follow-up survey of use and experiences at college health centers in the mid-atlantic united states. *Journal of American College Health : J of ACH, 54*(5), 249-256.

Miller, W. B. (1986). Why some women fail to use their contraceptive method: A psychological investigation. *Family Planning Perspectives, 18*(1), 27.

Mohanty, C. (Ed.). (2003). *Under western eyes: Feminist scholarship and colonial discourses*. Durham, NC: Duke University Press.

Mohllajee, A. P., Curtis, K. M., Morrow, B., & Marchbanks, P. A. (2007). Pregnancy intention and its relationship to birth and maternal outcomes. *Obstetrics and Gynecology, 109*(3), 678-686.

Moos, M. (2003). Unintended pregnancies: A call for nursing action. *MCN: The American Journal of Maternal Child Nursing, 28*(1), 24-31.

Moos, M., Petersen, R., Meadows, K., Melvin, C. L., & Spitz, A. M. (1997). Pregnant women's perspectives on intendedness of pregnancy. *Women's Health Issues, 7*(6), 385.

Mosher, W., & Bachrach, C. (1996). Understanding U.S. fertility: Continuity and change in the national survey of family growth, 1988-1995. Fam Plann Perspect, 28(1), 4-12.

Mosher, W., Martinez, G., Chandra, A., Abma, J., & Wilson, S. (2004). Use of contraception and use of family planning services in the United States: 1982-2002Center for Disease Control.

Munhall, P. L. (1988). Ethical considerations in qualitative research. *Western Journal of Nursing Research, 10*(2), 150-162.

Nagy Hesse-Biber, S., & Piatelli, D. (2007). From theory to method and back again. In S. Nagy Hesse-Biber (Ed.), *Handbook of feminist research: Theory and praxis*. Thousand Oaks, CA: Sage Publications.

National Center for Health Statistics. (2005). Fertility, family planning, and reproductive health of U.S. women: Data from the 2002 national survey of family growth. *Vital and Health Statistics, 2005*, Series 23(25)

Parry, D. C. (2005). Women's experiences with infertility: Exploring the outcome of empowerment. *Women's Studies, 34*(2), 191-211.

Patton, M. Q. (2002). *Qualitative research & evaluation methods* (third ed.). Thousand Oaks: Sage Publications.

Petersen, R., & Moos, M. (1997). Defining and measuring unintended pregnancy: Issues and concerns. *Women's Health Issues, 7*(4), 234-240.

Pharmacy Access Partnership. (2008). *EC-help.* Retrieved November 30, 2008, from http://www.ec-help.org/GettingECPrintFriendly.htm

Poirier, S., & Ayres, L. (1997). Focus on qualitative methods. endings, secrets, and silences: Overreading in narrative inquiry. *Research in Nursing & Health, 20*(6), 551.

Potharst, E. S., van Wassenaer, A. G., Houtzager, B. A., van Hus, J. W., Last, B. F., & Kok, J. H. (2011). High incidence of multi-domain disabilities in very preterm children at five years of age. *The Journal of Pediatrics,*

Richards, L. (1999). Data alive! the thinking behind NVivo. *Qualitative Health Research, 9*(3), 412.

Rodgers, B. L., & Cowles, K. V. (1993). The qualitative research audit trail: A complex collection of documentation. *Research in Nursing & Health, 16*(3), 219.

Sable, M. R. (1999). Pregnancy intentions may not be a useful measure for research on maternal and child health outcomes. *Family Planning Perspectives, 31*(5), 249.

Salganicoff, A. (2004). *Women's health policy: Coverage and access to care.*, 2005, from http://www.kaiseredu.org/tutorials_index.asp#WomensHealth1

Sandelowski, M. (1993). Rigor or rigor mortis: The problem of rigor in qualitative research revisited [abstract]. *Advances in Nursing Science, 16*(2), 1.

Sandelowski, M. (1995). Focus on qualitative methods. qualitative analysis: What it is and how to begin. *Research in Nursing & Health, 18*(4), 371.

Sandelowski, M. (1996). Focus on qualitative methods. one is the liveliest number: The case orientation of qualitative research. *Research in Nursing & Health, 19*(6), 525.

Sandelowski, M., & Barroso, J. (2003). Creating metasummaries of qualitative findings. *Nursing Research, 52*(4), 226.

Santelli, J., Rochat, R., Hatfield-Timajchy, K., Gilbert, B. C., Curtis, K., Cabral, R., et al. (2003). The measurement and meaning of unintended pregnancy. *Perspectives on Sexual & Reproductive Health, 35*(2), 94.

Sassler, S., Miller, A., & Favinger, S. M. (2009). Planned parenthood?: Fertility intentions and experiences among cohabiting couples. *Journal of Family Issues, 30*(2), 206-232.

Shah, P. S., Balkhair, T., Ohlsson, A., Beyene, J., Scott, F., & Frick, C. (2011). Intention to become pregnant and low birth weight and preterm birth: A systematic review. *Maternal and Child Health Journal, 15*(2), 205-216.

Shanok, A. F., & Miller, L. (2007). Stepping up to motherhood among inner-city teens. *Psychology of Women Quarterly, 31*(3), 252-261.

Singh, S., Sedgh, G., & Hussain, R. (2010). Unintended pregnancy: Worldwide levels, trends, and outcomes. *Studies in Family Planning, 41*(4), 241-250.

Smith, G. D., Hart, C., Blane, D., & Hole, D. (1998). Adverse socioeconomic conditions in childhood and cause specific adult mortality: Prospective observational study. *BMJ (Clinical Research Ed.), 316*(7145), 1631-1635.

Sonfield, A., Kost, K., Benson Gold, R., & Finer, L. B. (2011). The public costs of births resulting from unintended pregnancies: National and state-level estimates. *Perspectives on Sexual & Reproductive Health, 43*(2), 95-102.

Sorensen, G., Emmons, K., Hunt, M. K., Barbeau, E., Goldman, R., Peterson, K., et al. (2003). Model for incorporating social context in health behavior interventions: Applications for cancer prevention for working-class, multiethnic populations. *Preventive Medicine, 37*(3), 188.

Spear, H. J. (2004). *Personal narratives of adolescent mothers-to-be: Contraception, decision making, and future expectations* Blackwell Publishing Limited.

Srikanthan, A., & Reid, R. L. (2008). Religious and cultural influences on contraception. *Journal of Obstetrics and Gynaecology Canada : JOGC = Journal d'Obstetrique Et Gynecologie Du Canada : JOGC, 30*(2), 129-137.

St. John, W., & Johnson, P. (2000). The pros and cons of data analysis software for qualitative research. *Journal of Nursing Scholarship, 32*(4), 393-397.

Stanford, J. B., Hobbs, R., Jameson, P., DeWitt, M. J., & Fischer, R. C. (2000). Defining dimensions of pregnancy intendedness. *Maternal & Child Health Journal, 4*(3), 183.

Stevens-Simon, C. (2001). Virginity: A state of mind... but not necessarily of body. *Journal of School Health, 71*(3), 87.

Stevens-Simon, C., Beach, R. K., & Klerman, L. V. (2001). To be rather than not to be--that is the problem with the questions we ask adolescents about their childbearing intentions. *Archives of Pediatrics & Adolescent Medicine, 155*(12), 1298-1300.

Strayer, S. M., & Couchenour, R. L. (1998). Combined oral contraceptives versus levonorgestrel for emergency contraception. *The Journal of Family Practice, 47*(6), 417.

Tansey, E. M. (1991). The adolescent response to pregnancy: Accepting the reality. (DR.P.H., UNIV. OF TEXAS H.S.C. AT HOUSTON SCH. OF PUBLIC HEALTH). , 137 p.

Taylor, J. Y. (1998). Womanism : A methodologic framework for African American women. *Advances in Nursing Science, 21*(1), 53-64.

Teddlie, C., & Tashakkori, A. (2003). *Handbook of mixed methods in social & behavioral research*. Thousand Oaks: Sage Publications.

Teddlie, C., & Tashakkori, A. (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences*. Thousand Oaks, CA: Sage.

Tennyson, M. A. (1988). Experiences of a woman who intended to relinquish her infant for adoption. *Maternal-Child Nursing Journal, 17*(3), 139-152.

The Henry J Kaiser Family Foundation[KFF]. (2004). *Emergency contraception in california.* Retrieved November 30, 2008, from http://www.kff.org/womenshealth/whp021804pkg.cfm

The Henry J Kaiser Family Foundation[KFF]. (2005). *Emergency contraception.* Retrieved November 30, 2008, from http://www.kff.org/womenshealth/upload/3344-03.pdf

Thomas, J. (1993). *Doing critical ethnography*. Newbury Park, CA: Sage Publications.

Thurmond, V. A. (2001). The point of triangulation. *Journal of Nursing Scholarship : An Official Publication of Sigma Theta Tau International Honor Society of Nursing / Sigma Theta Tau, 33*(3), 253-258.

Trussell, J. (1988). Teenage pregnancy in the United States. *Family Planning Perspectives, 20*(6), 262.

Trussell, J. (2007). The cost of unintended pregnancy in the United States. *Contraception, 75*(3), 168-170.

Trussell, J., Lalla, A. M., Doan, Q. V., Reyes, E., Pinto, L., & Gricar, J. (2009). Cost effectiveness of contraceptives in the United States. *Contraception, 79*(1), 5-14.

Trussell, J., & Wynn, L. L. (2008). Reducing unintended pregnancy in the United States. *Contraception, 77*(1), 1-5.

Trussell, J., Vaughan, B., & Stanford, J. (1999). Are all contraceptive failures unintended pregnancies? evidence from the 1995 National Survey of Family Growth. *Family Planning Perspectives, 31*(5), 246.

U.S. Department of Health & Human Services. (2008). *Healthy people 2010: Progress review, family planning* Retrieved from http://www.healthypeople.gov/data/2010prog/focus09/default.htm

U.S. Department of Health and Human Services. (2010). *2020 topics & objectives: Family planning.* Retrieved January 5th, 2011, from http://healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicid=13

University of Iowa. (2005a). *Survey and desktop applications: Getting started with WebSurveyor.*, 2007, from http://cs.its.uiowa.edu/sda/survey/

University of Iowa. (2005b). *Undergraduate admissions: Computer access.*, 2006, from http://www.askadmissions.net/uiowa/aeresults.aspx?quser=computer+access

University of Iowa Registrar. (2007a). *Student demographics.* Retrieved November 30, 2008, from http://www.uiowa.edu.proxy.lib.uiowa.edu/admissions/undergrad/diversity/students.htm

University of Iowa Registrar. (2007b). *Total enrollment.* Retrieved November 30, 2008, from http://www.uiowa.edu.proxy.lib.uiowa.edu/admissions/undergrad/whos-at-iowa/total.htm

Vahratian, A., Patel, D. A., Wolff, K., & Xu, X. (2008). College students' perceptions of emergency contraception provision. *Journal of Women's Health (15409996), 17*(1), 103-111.

WebSurveyor Corporation. (2005). *Websurveyor guide: Table of contents*, 2007, from http://comm2.fsu.edu/WebSurveyor/Help/default.aspx

Weismiller, D. G. (2004). Emergency contraception. *American Family Physician, 70*, 707.

Wertheimer, R. E. (2000). Emergency postcoital contraception. *Am Fam Physician, 62*(10), 2287-92.

Whittaker, P. G., Armstrong, K. A., & Adams, J. (2008). Implementing an advance emergency contraception policy: What happens in the real world? *Perspectives on Sexual & Reproductive Health, 40*(3), 162-170.

Whittemore, R., & Knafl, K. (2005). The integrative review: Updated methodology. *Journal of Advanced Nursing, 52*(5), 546-553.

Zimmerman, C., & Watts, C. (2004). Risks and responsibilities: Guidelines for interviewing trafficked women. *Lancet, 363*(9408), 565.