

Pregnancy Decision-Making among Women with a Recent Medicaid-Funded Birth

By

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Pregnancy Decision-Making among Women with a Recent Medicaid-Funded Birth

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ABSTRACT

Title: Pregnancy Decision-Making among Women with a Recent Medicaid-Funded Birth

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While pregnancy, birth, and childrearing represent fulfillment of significant life goals, unintended pregnancy has been associated with a host of unfavorable health, social, achievement, and economic outcomes. Despite decades of study and intervention, rates of unintended pregnancy have remained relatively unchanged for over three decades and continue to elude researchers, clinicians, and policymakers. Unintended pregnancy and its outcomes disproportionately impact women of socioeconomic disadvantage, racial minorities, unmarried cohabitating women, and women 18 to 24 years old. Increasingly, researchers have recognized pregnancy intention as a nuanced, multidimensional phenomenon, with limited sensitivity to conventional measurement strategies and ambivalence toward childbearing and contraception holding a key role in unintended pregnancy.

The purpose of this study was to expand the knowledge and understanding of factors and forces that influence sexually active women in their pregnancy decision-making, including the initiation and use of contraception. This study analyzed previously collected data from the *TAKE CHARGE Final Evaluation: A Study of Recently Pregnant Women* study, conducted by Washington State Department of Social and Health Services.

There were 1,292 women in the total sample, with qualitative subsamples of 593 and 258, the latter emphasized in this study. All women had a Medicaid-funded birth in spring 2005 and were surveyed two years later, with many volunteering additional comments, totaling over 2400.

This descriptive study maintained a naturalistic viewing position, implementing a concurrent nested mixed methods design with qualitative priority and integration during analysis. A novel characteristic of this study was the transformation of forced choice survey responses into qualitative statements which were subsequently integrated with volunteered participant comments and birth history data to create participant narratives amenable to a process of pattern-coding.

Analysis uncovered four major themes: *achieving childbearing goals, traditional values, multifaceted ambivalence, and insurance and finances matter, but not for pregnancy*. These themes and seventeen subthemes were integrated with existing literature to yield two thematic messages. The first message asserts that participants were *like everybody else, but living on the edge*. Women in this study revealed that they represented a cross-section of the population with characteristics, goals, interests, values, and childbearing desires that could characterize the general population of Washington women, with economic security as the significant exception. The second message is that *ambivalence is prevalent, multifaceted, and perhaps self-protective*. This affirmed that ambivalence toward pregnancy and childbearing is not a one-dimensional phenomenon, but arises and evolves in various contexts, has a significant association with subsequent birth, and may offer a protective mechanism for responding to a multitude of conflicting

attitudes, social norms, and control beliefs that surround pregnancy and childbearing. For many women, it may not be possible to form or express intentions even when pregnancy is considered desirable and ambivalence may be a mechanism for moderating decisional conflict.

Health care and social services providers would be well served to remain alert to their personal/professional orientations, biases, and potentially stigmatizing behaviors. Implementation of screening and intake strategies that elicit the values, interests, and life situations of their clients may assist with goal alignment, improved trust, and mutual plans that may lead to prevention of unwanted pregnancy and improved health outcomes for women who desire pregnancy and childbearing. Current public policies that afford insurance access for pregnant women and children as well as access to family planning appear to be fulfilling a critical need, and may be enhanced by the Affordable Care Act.

The unique approach to analyzing survey data employed in this study may be applied to other large fertility-focused studies, particularly when the integration of volunteered comments is possible. This study supports the ongoing critique of retrospective pregnancy intention measurement and reinforces the need for prospective and longitudinal fertility research, as well as additional qualitative and integrated methods study.

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CHAPTER 1

Introduction

While pregnancy, birth and childrearing constitute fulfillment of significant life goals among women, men and societies, unintended pregnancy has been associated with a host of unfavorable health, social, achievement and economic outcomes. Despite being studied for decades, both the concept of unintended pregnancy and the development of effective strategies to reduce its incidence in the United States continues to elude researchers, clinicians and policymakers (Finer & Zolna, 2011; Luker, 1999; Moos, Bartholomew & Lohr, 2003; Mosher, Jones & Abma, 2012; Santelli et al, 2003; Trussell, Vaughan & Stanford, 1999). The rates of unintended and adolescent pregnancy in the United States exceed almost all other countries in the industrialized world (Darroch, Frost & Singh, 2001; Finer & Zolna, 2011; Singh, Sedgh & Hussain; 2010; Trussell & Wynn, 2008). Unintended pregnancy and parenthood among young women has been linked with failure to achieve educational goals, poverty, welfare dependence, domestic violence, and impaired partnership relationships (Fergusson, Boden & Horwood, 2007). Additionally, unintended pregnancy has been associated with delayed entry into prenatal care and decreased opportunity to participate in preconception and early pregnancy risk assessment that could mitigate untoward maternal and infant health risks (Brown & Eisenberg, 1995; Washington State Department of Health, 2007).

Unintended Pregnancy

In the period 2004-2006, approximately 51% of Washington State pregnancies were classified as unintended, which exceeded the national prevalence of 49% and the Healthy People 2020 target of 44% (Cawthon, Woodcox & Lyons, 2008; Finer &

Henshaw, 2006; Finer & Zolna, 2011; Ranjit, Bankole, Darroch & Singh, 2001; US DHHS, 2011). In the United States, the portion of unintended pregnancies has been estimated at approximately 49% and has remained relatively unchanged between 1994 and 2006 (Finer & Henshaw; Finer & Zolna). An unintended pregnancy is typically defined as one where the woman would have preferred to become pregnant at a later time or not at all, or a pregnancy that ended in abortion, but demographic measurement strategies have been evolving (Mosher et al., 2012; Santelli, et al., 2003, 2009; Schrader, 1997). In 2006, 3.2 million pregnancies in the United States were classified as unintended, with 43% of these ending in abortion (Finer & Zolna,). Unintended pregnancy is disproportionately prevalent among unmarried cohabitating women, ages 18 to 24 years, racial minorities, and women who have had one prior birth, have not completed high school, and have incomes below 200% of federal poverty level (Finer & Zolna; Mosher et al.). While the rate of unintended pregnancies declined between 1994 and 2001 among adolescents, college graduates, and wealthy women, rates increased for poor women, ethnic minorities, and those with less education (Finer & Henshaw).

Economic Costs of Unintended Pregnancy

Unintended pregnancy imposes significant economic costs for society. Trussell (2007) calculated the direct medical costs of unintended pregnancy in the United States during 2002 as almost five billion dollars, with an average cost of \$1609 per unintended pregnancy. In contrast, use of contraception was estimated to avert 12 million unintended pregnancies and save \$19.3 billion in direct medical costs (Trussell). In Washington State, 47% of all births were funded through the state Medicaid program in

2006, costing taxpayers over \$309 million per year for direct maternity care expenses and comprising one of Washington Medicaid's largest expenses (Cawthon et al, 2008).

During the 2004-2006 period, estimated expenditures to provide publically funded maternity care for unintended pregnancies in Washington State exceeded \$235 million (Cawthon et al). Nationally, the cost of publically-funded maternity care associated with unintended pregnancies was estimated at \$11.1 billion for 2006 (Sonfield, Kost, Gold & Finer, 2011)

Beyond direct medical expenditures, unintended pregnancy has been identified as a contributor to long-term health and social services costs to support both women and children, including state-sponsored health care coverage, welfare payments and other consequences of poverty (Brown & Eisenberg, 1995). In particular, the younger the woman at the time of pregnancy and childbirth, the stronger the association between protracted poverty and welfare receipt (Brown & Eisenberg; Wellings, Wadsworth, Johnson, Field & Macdowall, 1999).

Diminished Maternal and Infant Health Outcomes

Unintended pregnancy has been linked with maternal risk behaviors as well as diminished maternal and infant health outcomes. Untoward infant outcomes associated with unintended or unwanted pregnancy include increased odds of preterm delivery and low birth weight, although these associations weaken when adjusted for confounding socioeconomic status and other risk factors (Afable-Munsuz & Braverman, 2007; Keeton & Hayward, 2007; Logan, Holcombe, Manlove & Ryan, 2013; Mohllajee, Curtis, Morrow & Marchbanks, 2007; Sable et al., 1997). Compared to women with intended

pregnancies, increased maternal risk factors for poor pregnancy outcomes have been strongly associated with unintended pregnancy and include delay in seeking prenatal care, no prenatal care, denial of pregnancy, depression, tobacco use, and alcohol use (Blake et al., 2007; Brown & Eisenberg, 1995; D'Angelo, Gilbert, Rochat, Santelli & Herold, 2004; Logan et al.; Mohllajee et al.). Additionally, women with unintended pregnancy are more likely to report impaired partner relationships and intimate partner violence (Blake et al.; D'Angelo et al.; Fergusson et al. 2007).

Closely-spaced births, where pregnancy occurs within 3 to 18 months of a prior birth, are often the result of unintended pregnancy and have been associated with increased risk of maternal morbidity and mortality, infant mortality, preterm birth, and low-birth-weight birth (Brown & Eisenberg, 1995; Conde-Adudelo, Rosas-Bermudez, & Kafury-Goeta, 2006). Several large studies have revealed significantly increased risks for preterm birth, low-birth-weight, and early neonatal death when interpregnancy intervals were less than 18 months and particularly when intervals were less than six months (Conde-Adudelo et al.; Grisaru-Granovsky, Gordon, Haklwi, Samueloff & Schimmel, 2009; Hsieh et al, 2005; Rawlings, Rawlings, & Reed, 1998; Zhu, Rolfs, Nangle, & Horan; 1999).

Disrupted Ability to Achieve Life Goals

Unintended pregnancy has been associated with inability to achieve life goals, particularly those associated with education, career, and financial independence (Brown & Eisenberg, 1995). In a longitudinal study of New Zealand youth, Fergusson and colleagues (2007) reported young women who gave birth were significantly less likely to

complete basic education, achieve a university degree, enroll in any post-secondary education, obtain full-time employment, or achieve independence from welfare support compared to young women who were never pregnant or who obtained an abortion for pregnancy. In their study of life-span goal changes during transition to parenthood, Salmela-Aro and Nurmi (2000) found that women experiencing pregnancy and childbirth were more likely to abandon goals associated with education, career, and financial independence in favor of family and motherhood goals over the course of pregnancy and early childrearing. In the United States, unintended pregnancy has been closely associated with low education attainment, poverty, and welfare dependence (Brown & Eisenberg, 1995; Finer & Henshaw, 2006; Finer & Zolna, 2011).

Unintended Pregnancy and Abortion

Abortion is one of the most enduring consequences attributed to unintended pregnancy and has been the subject of divisive social, ethical, and political debate. Whether legal or illegal, abortion has been a centuries-old option employed by women for unintended and unwanted pregnancies (Brown & Eisenberg, 1995). Reduction in the rate of unintended pregnancy is broadly viewed as a key step toward reducing the rate of abortion.

While as many as 8% of abortions result from pregnancies described as intended, Finer and Zolna's (2011) analysis of the 2006-2008 National Survey of Family Growth (NSFG) estimated 43% of unintended pregnancies ended in abortion. This reflects a decline from 54% estimated in the 1995 NSFG and from 47% the in 2002 NSFG, offset by an increase in the birthrate attributed to unintended pregnancy (Finer & Henshaw,

2006; Finer & Zolna). In Washington State, the rate of reported abortion for all women between 15 and 44 years of age declined from 26.6 per 1000 women in 1990 to 14.8 per 1000 in 2011, but remained 28.8 per 1000 for women 20-24 years of age (Center for Health Statistics, 2012).

Contraceptive Failure

If a woman desires only two children in her lifetime, she must use some form of birth control for roughly three decades (Alan Guttmacher Institute, 2000). A young woman who is sexually active and does not use contraception has an 85% chance of becoming pregnant within one year (Trussell, 2011). Although most modern birth control methods are very effective in preventing pregnancy, contraceptive failure has been identified as a significant contributor to unintended pregnancy. While 52% of unintended pregnancies are attributed to the 16% of women who do not use birth control (6%) or have gaps in use (10%), nearly half of unintended pregnancies occurred among women who reported using contraceptives. (Finer & Henshaw, 2006; Frost, Singh, & Finer, 2007a; Gold et al., 2009; Kost, Singh, Vaughn, Trussell, & Bankole, 2008). In the analysis of demographic survey data, a common definition of contraceptive failure is a “conception that occurred during a month in which a woman (or her partner) was using a contraceptive method, as long as she did not report that she (or he) had stopped use before becoming pregnant ” (Fu, Darroch, Haas & Ranjit, 1999, p.57). Among user-dependent contraceptive methods, 12.4% of all women experience a contraceptive failure within the first year of use, with highest rates for barrier, withdrawal, and fertility awareness methods, and rates below 9% for hormonal methods (Kost et al.). Similar to

the prevalence for unintended pregnancy, women who are low income, non-Hispanic black, cohabitating, or have one prior child demonstrate highest probability of contraceptive failure.

Ambivalence and Pregnancy

The concepts of pregnancy intention, ambivalence, and desirability are significant to understanding pregnancy rates, contraceptive failure, and pregnancy prevention.

There is a growing concern among researchers) that questions used to measure pregnancy intention in demographic and epidemiological instruments are one-dimensional and not necessarily congruent with women's behavior and emotions or the multiple domains that may influence contraception and pregnancy (Speizer, Santelli, Afable-Munsuz, & Kendall (2004). Finer and Henshaw (2006) proposed a woman's pregnancy intention is more accurately characterized as a continuous measure than as a dichotomous variable. Noting discordance in responses from women who responded to different survey instruments, Santelli and colleagues (2003) concluded little was known about how women's intentions relate to patterns of contraceptive use or the multiple dimensions that may influence pregnancy and contraception. Relying on analysis of 1995 and 1998 NSFG interview responses, no association was found between pregnancy attitudes and subsequent pregnancy, but an association between contraceptive use attitudes and pregnancy (Bruchner, Martin & Bearman 2004). In their analysis, the researchers reported that adolescents who were ambivalent about pregnancy were less likely to use contraceptives (Bruchner et al.). More recent quantitative and qualitative investigations have strengthened the evidence that pregnancy intentions are multidimensional, evolving

in nature, and embedded with ambivalence, thereby extending the critique of conventional measurement strategies and demonstrating the need for further qualitative and longitudinal study (Gerber, Pennylegion, & Spice, 2002; Kaye, Suellentrop, & Sloup, 2009; Kendall et al. 2005; Nettleman, Brewer, & Ayoola, 2007; Santelli et al.; Santelli, Lindberg, Orr, Finer, & Speizer, 2009; Santelli, Speizer, Avery, & Kendall; 2006; Speizer et al.).

Significance for Nursing and Research

The prevention of unintended pregnancy interfaces with many aspects of clinical nursing practice, particularly those working directly with at-risk women offering family planning, public health, home-health, clinic, and school nursing services. Additionally, nurses increasingly occupy key roles in the initiation, development, and administration of public policy focused on pregnancy prevention, social services, and support of favorable maternal-child outcomes.

While the focus of demographic and epidemiological research for many years, the conceptualization of pregnancy intention as a dichotomous variable remains problematic. Researchers recognize that pregnancy intention is a complex phenomenon and a multitude of factors, including ambivalence about pregnancy, may interface with the process of conception or conception avoidance. Where traditional definitions have been challenged, constructivist qualitative approaches may yield greater value toward revealing the multiple facets underlying the phenomena of pregnancy intention and yield a conceptualization that can inform future research, clinical practice, and policy.

Purpose

The purpose of this research is to expand knowledge and understanding of factors and forces that influence sexually active women in their pregnancy decision making, including the initiation and use of contraception if they wish to avoid or delay pregnancy. The results of this research should contribute to the body of knowledge toward informing programs, policies and future research in unintended pregnancy prevention. This study was designed to explore the following question: What are the social, environmental, and experiential factors that influence sexually active women in their pregnancy, as well as their ability to initiate and use contraception if they wish to delay pregnancy?

Accordingly, there were three specific aims. These aims were to:

1. Describe the characteristics of women with a recent Medicaid-funded birth, including any patterns associated with their pregnancy interests;
2. Describe the contraceptive strategies employed by recently pregnant women and perceived factors that contributed to their pregnancy; and
3. Describe the expressed attitudes of recently pregnant women toward pregnancy, childbearing, and contraception.

CHAPTER 2

Review of Literature

This chapter introduces concepts, relevant literature, and research that provide the background and foundation for this research proposal, including the state of knowledge and gaps in understanding. While decision making of any type can be a multifaceted process, decisions dealing with fertility, pregnancy, and childbearing are particularly complex, drawing the interest of social scientists, religious institutions, health care providers, public health entities, researchers, and policy-makers for generations. This literature review is organized around concepts relating to pregnancy and pregnancy decision making, including outcomes, consequences, and trends. Specific concept areas developed in this review include family planning, unintended pregnancy, consequences of unintended pregnancy, contraception, contraceptive failure, pregnancy intention, and ambivalence. Within each conceptual area, sub-topics are presented. As applicable, each section incorporates literature that develops related history or trends plus quantitative, qualitative, demographic, and epidemiologic research that illuminates the concept. The majority of research presented will be drawn from studies conducted in the United States, augmented by international research and other data that contributes to the concept or demographic trend. Because this research proposal focuses on recently pregnant women in Washington State, state level data, trends, and research will be incorporated. The goal of this chapter is to uncover what is and is not known about pregnancy decision-making, as well as how this research can contribute to understanding the phenomena.

Assumptions

While family planning and reproductive health literature reflects diverse and extensive interests, almost all of this scholarship reflects a common understanding and set of assumptions. However, these assumptions are rarely articulated overtly. Given that this proposal and review focuses on pregnancy decision making, it seems relevant to attempt to articulate these underlying assumptions and preconceptions that may be held by writers and researchers, including this author.

The first assumption and perhaps the broadest, is that procreation and reproduction represent social goods and perhaps a moral imperative toward species survival, strengthening society, providing biologic legacy, sustaining family, and fulfilling individual life objectives. While not developed in depth, this assumption is relevant to concepts of family planning and pregnancy intention that are developed in this review.

A second assumption is that children in society should have the opportunity for health and success in life, unencumbered by disease and social ills. This assumption is embedded in literature addressing unintended pregnancy, the consequences of unintended pregnancy as well as family planning and women's health. While this assumption reflects values and beliefs that may be more overtly articulated in developed nations, it is evidenced in public programs, international health efforts, and humanitarian initiatives.

The third assumption is that women and possibly their partners desire to exercise autonomy in the number of children as well as the timing of pregnancy and spacing between children. In particular, this represents a key right in the exercise of free will as well as the autonomy and health of women in societies. This assumption is embedded in

literature relating to family planning, unintended pregnancy, consequences of unintended pregnancy, pregnancy intention, and contraception.

The fourth assumption is that societies and governments have concern about rapid expansion of the world population in the last century and the planetary resource demands associated with this growth. Similarly, where many governments in both developed and developing countries have committed resources to support parenting and the health of children, they have interest in these resources being utilized effectively and efficiently, as well as hold concern about the capacity of limited resources to achieve the intended purpose. This assumption is evident, both explicitly and implicitly, in the literature addressing family planning and unintended pregnancy.

While far from inclusive, this attempt to articulate preconceptions and assumptions embedded in family planning and reproductive health literature reveal assumptions that are both complimentary and competing. As this literature is explored, awareness of assumptions can be useful in uncovering bias, revealing complexities, and unveiling opportunities for discovery.

Search Strategy

The primary electronic database search was conducted using Medline and Old Medline encompassing years 1948 through May 2010. This was preceded by a similar search in January 2009. Medical subject headings were “pregnancy” and “pregnancy, unplanned”. The search “pregnancy” plus “pregnancy, unplanned” resulted in 295 results which were manually screened by title and complete reference for extraction. This yielded 106 articles for further review. Additional searches combined “pregnancy, outcome” with “pregnancy, unwanted” and “pregnancy, unplanned” with “pregnancy outcome”.

Articles were included for additional review if they addressed a concept or sub-concept of this review. Only English or English translations of articles were included.

International articles were included if they addressed a general concept, health outcome, or pregnancy outcome, but were excluded if their topic or research was local in nature.

Quantitative or qualitative research that addressed concept measurement or factor identification was specifically sought as well as articles that offered synthesis or review of literature. Literature reflecting history, trends, policy, and access to family planning and contraception were included. Articles for any age group were selected. In addition to the subject-heading searches, Medline similar article searches were conducted for “contraception: social revolution” and “unintended rapid repeat pregnancy”. For all searches, articles were excluded if they were focused on a specific clinical practice situation or clinical efficacy of a specific contraceptive method. In addition to the Medline database, PsychInfo and the Cochrane Database of Systematic Reviews were searched. Both databases were searched with various keyword combinations of “pregnancy”, “adolescent”, “fertility”, and “decision”.

Additional articles and literature were retrieved through searching the references of previously retrieved articles and books. This was particularly useful in locating sources representing sentinel concept development or historical significance. A manual library search resulted in retrieval of several historical texts.

Topical index searching of three non-governmental research organizations from 2006 through August 2013 yielded many additional sources and contemporary updates. These included the Guttmacher Institute (aka AGI), Kaiser Family Foundation (KFF), and The National Campaign to Prevent Teen and Unplanned Pregnancy. The Guttmacher

Institute proved particularly valuable, not only for the research, publications, and reports produced by that entity, but for a topical index current research in other publications.

Several governmental agencies and quazi-governmental organizations were accessed for data and reports to support this review, including the United Nations Population Division (UNFPA), World Health Organization (WHO), United States Bureau of Labor Statistics (BLS), United States Centers for Disease Control and Prevention (CDC), Washington State Department of Social and Health Services (DSHS), Washington State Department of Health Center for Health Statistics (DOH), and the Washington State Health Care Authority (HCA). In particular, entities of the CDC offered distinct resources, including the publication *Morbidity and Mortality Weekly Report (MMWR)* and reports from the National Center for Health Statistics (NCHS), the source for reports related to the National Survey of Family Growth (NSFG). Within Washington State DSHS, the primary source was the Research and Data Analysis Division (RDA).

Family Planning

Driving Forces – Population, Fertility, Health

Concern for world population growth, population distribution, and consumption of planetary resources has been among the forces driving international interest in controlling human fertility. As late as 1000 AD, the world population was estimated at less than 300 million persons (Diczfalusy, 1995). Requiring about 800 years, the first billion in human population occurred in 1804 and the second billion 123 years later in 1927. Subsequent billions of world population were added in progressively shorter intervals of 33, 14, 13, and 12 years before the world reached six billion persons in 1999

(Diczfalusy, 1995, 2002; Benagiano, Bastainelli & Farris, 2007). The United Nations Population Division (2008) estimated world population to range between 7.9 Billion and 11.0 billion by year 2050 depending on fertility projection variants. Benagiano et al. contend that low or medium fertility projections are the more likely scenarios. In population studies, fertility is defined as live births or “actual reproduction” and does not refer to the ability to conceive (fecundity) or include pregnancies that end in miscarriage or abortion (Campbell & Mosher, 2000; Cutright, 1971, 1972; United Nations, 2008)

The world population explosion of the mid 20th century sparked international concern, particularly when population passed three billion in 1960 and constant-fertility projections at the time estimated that world population could reach twenty to twenty-five billion (Diczfalusy, 2002). These projections were particularly distressing given the contemporary belief was that the planet only had the capacity to sustain about five billion people (Diczfalusy, 2002). When accepting his nomination as the 1960 presidential candidate for the Democratic Party, John F Kennedy declared: “unless man halts population growth, population growth will halt man” (Diczfalusy, 2000. p.4). While declining fertility since the 1950s in more developed countries has begun to abate or reverse population growth, less developed countries have experienced rapid increases in population (Diczfalusy, 2000; United Nations, 2008). Where Europe’s population in 2050 is projected to be 26% greater than 1950, Sub-Saharan Africa’s population will increase over 9.5 times and South-Central Asia will experience almost a five-fold increase (United Nations). Although all nations have experienced declines in fertility, these are more pronounced in developed versus less developed regions. Fertility in the United States declined between 1970 and 2002 from 2.5 births per woman to approximate

a replacement rate of 2.0, where fertility in Europe declined from 2.2 to 1.4 and Japan from 2.1 to 1.3 during similar periods (United Nations, 2008). In contrast, births per woman in Western Africa declined from 7.0 to 5.8 during that time and South-Central Asia from 5.5 to 3.2 (United Nations). China, which has been recognized for both its expansive population and coercive childbearing policies is an outlier among most Asian nations, with its fertility declining from 5.7 births per woman in 1970 to 1.4 births in 2002 (Lane, 1994; United Nations).

Beside fertility, the other force behind population growth is decreased mortality and extended lifespan. Even when fertility approximates the replacement rate of 2.1, population aging will extend growth for decades and while fertility projections may be considered abstract estimates, the elderly of year 2050 exist today as young and middle-aged adults (Diczfalusy, 2002, United Nations, 2009). Since 1950 worldwide, the number of people aged 60 or older more than tripled from 205 million to 737 million, and is projected to almost triple again to reach two billion by year 2050 (United Nations). In the United States, the number of persons aged 60 or older grew from 20 million in 1950 to 56 million in 2009 and is projected to reach 111 million in 2050, representing a shift from 12.7% of the population in 1950 to 27.5% of population in 2050 (United Nations, 2008, 2009). While almost all developed countries have already experienced a significant shift in the age of their populations and have average life expectancies that exceed the less developed regions by over 11 years (21 years over least developed countries), this gap is projected to narrow as life expectancy increases and the growth rate of older adults increases in less developed regions (United Nations, 2009).

Finding means to control the rapid expansion of the world population found explicit justification in the impact of population on degradation of planetary ecology and population poverty (Lane, 1994). However, from the beginning of the population movement, there has been concern about who were the true beneficiaries of population control programs; the nations who promulgated them or individual women, their families, and disadvantaged groups (Lane)? Despite the altruistic proclamations behind population control initiatives and the funding of aid programs, the United States and other developed nations had self-interested motives about increasing scarcity of resources as well as Cold War fears about the spread of communism in countries of political interest that had potential for large dissatisfied impoverished populations (Lane). Additionally, groups both abroad and within industrial countries had fears about fertility control efforts being motivated by eugenics and interest in cultural genocide. The United States and other countries demonstrated population control policies and practices that included continued marketing of contraceptive products of questionable safety, sterilization of poor, developmentally disabled, and minority women with inadequate understanding of the procedure or consent, as well as instances of difficulty getting long-acting implantable contraceptives removed (Lane).

While control of population growth remained the predominant rhetoric for control of fertility, beginning in the 1960s this perspective transitioned to an emphasis on human rights, women's rights, individual needs and desires, and reproductive health. Lane (1994) argued that a fundamental fault with policies based on population control is they focused on convincing women to use contraceptives verses seeking to meet the needs of clients from a woman-centered perspective. The transition to a human and individual

rights perspective was highlighted in a 1965 argument by Sir Dugald Baird, a professor of Obstetrics and Gynecology in Aberdeen, Scotland. Extending Franklin Roosevelt's elaboration of "freedom of speech and worship and freedom from want and fear", Baird added "freedom from the tyranny of excess fertility" (Diczfalusy, 2000, Lane 1994).

Worldwide, women and couples had both expressed and demonstrated a desire for fewer children than prior generations (Benagiano et al., 2006; Centers for Disease Control & Prevention, 1999; Dicsflausy, 1995; Fathalla, 1992; Singh, Darroch, Ashford, & Vlassoff, 2009; United Nations, 2009). In the United States, reductions in family size were demonstrated well before the advent of modern family planning methods. Between 1800 and 1900, the number of children per family decreased from 7 to 3.5 (Centers for Disease Control & Prevention, 1999). The cohort of US women born between 1900 and 1910 achieved the lowest lifetime fertility rate of any prior generation of women, with 42% of these white women having fewer than two children and the cohort demonstrating a family size of 2.3 children in 1933 (CDC, 1999; Dawson, Meny, & Ridley, 1980). This low fertility was achieved through active use of traditional and emerging contraceptive methods, surgical sterilization, and clandestine abortion (Dawson et al.). While the worldwide baby-boom that followed World War II reversed this trend, the childbearing behavior of the 1900-1910 cohorts was argued to be more representative of 20th century US women (Dawson et al.). It is important to note that population and fertility research in the United States prior to 1960 was largely limited to white, married women (Campbell & Mosher, 2000). Although dramatically higher than developed countries, fertility in less-developed countries has declined in recent decades, largely the result of increased use of contraception (Centers for Disease Control & Prevention; Singh et al.,

2009). In 2008, more than half of women of reproductive age in developing countries - 818 million – expressed the desire to avoid another pregnancy, yet 215 million were not using modern contraception, largely attributed to low access in the poorest regions of the world (Singh et al., 2009). Population projections conducted in 1990 estimated that if unwanted births in developing countries could be averted from that point forward, world population in 2050 would be closer to 7.5 billion rather than the 9 billion estimate at that time (Fathalla, 1992).

In the last five decades, family planning has been increasingly intertwined with human rights and the umbrella concept of reproductive health. In its Proclamation of Tehran, the proceedings from 1968 United Nations International Conference on Human Rights, included two articles, specifically forwarding the rights and advancement of women in society (Article IX) and family planning as an integral aspect of human rights (Article XVIII) (United Nations, 1968). While embedded in language focused on the moderation of population growth, Article XVIII, proclamation 3, declared “couples have a basic human right to decide freely and responsibly on the number and spacing of their children and a right to adequate education and information in this respect” (United Nations, p15). In 1994, the United Nations Population Fund (UNFPA) convened the International Conference on Population and Development in Cairo, the largest intergovernmental conference ever held on the topic, with 11,000 participants from 180 nations (United Nations, 2010) The broad goal of ICPD was to develop a 20 year integrative program of action targeting poverty and human rights, with a particular focus on issues impacting women (United Nations). It was the first such United Nations conference where the outcome focused on population and development from the

perspective of meeting the needs of individual women and men, verses achieving demographic targets (United Nations). Reproductive rights and reproductive health constituted an entire chapter (Ch. VII) in the final ICPD Programme of Action document adopted by 179 countries and defined reproductive rights as human rights, calling for universal access to reproductive health by year 2015 (United Nations). Family planning self-determination, access and options were embedded in the objectives, articulating that “The aim of family-planning programmes must be to enable couples and individuals to decide freely and responsibly the number and spacing of their children and to have the information and means to do so and to ensure informed choices and make available a full range of safe and effective methods” (United Nations). The vision created at the 1994 ICPD, provided a foundation for the UN Millennium Summit held in September 2000 and the creation of the Millennium Development Goals (MDGs). Promulgating a 15-year initiative to combat poverty, hunger, and disease, the eight MDGs included: (1) Eradicate of extreme poverty and hunger, (2) Achieve universal primary education, (3) Promote gender equality and empower women, (4) Reduce child mortality, (5) Improve maternal health, (6) Combat HIV/AIDS, malaria and other diseases, (7) Ensure environmental sustainability, and (8) Develop a global partnership for development (Singh et al., 2009; United Nations UNFPA, 2010). While MDG 5 specifically targeted the achievement of universal access to reproductive health and family planning and contraception by 2015, the concept of improved sexual and reproductive health is embedded in almost all of the other MDGs (Singh et al., 2009; United Nations UNFPA, 2010). Diefalusey (1995), reflecting on the proceedings of the ICPD as well as parallel World Health Organization position statements, articulated “twelve pillars” of reproductive health: (1) the status of

women in society (which encompass poverty and education), (2) family planning, (3) maternal care and safe motherhood, (4) abortion, (5) reproductive tract infections and HIV/AIDS, (6) infertility, (7) reproductive tract malignancies, (8) nutrition, (9) infant and child health, (10) Adolescent reproductive health and sexuality, (11) sexual behavior and harmful sexual practices, and (12) environmental and occupational reproductive health. Subsequent assessment of progress toward MDG achievement has focused on most of these dimensions summarized by Dicalusey (Singh et al., 2009).

The proximate listing of poverty, reproductive health, and family planning among the broad international goals is not arbitrary. Beyond the demographic argument of population growth and resource scarcity, poverty, and excess fertility are closely associated and this relationship may be bidirectional. As previously noted, high fertility rates and unwanted fertility are concentrated in the poorest and least developed nations, whereas developed and affluent countries have achieved relatively low fertility rates and benefit from ready access to a wide range of range of family planning modalities (Benagiano et al., 2007; Singh et al., 2009; United Nations, 2009). In the early 1960s, the prevailing perspective of policy makers was that economic progress could be achieved and that poverty could be overcome if the poor would gain control over their fertility (Lane, 1994). In contrast, Ratcliffe (1978) suggested that poverty was not the result of having too many children, but that excess fertility was the consequence of poverty. Ratcliffe studied the Kerala State in South India which, despite being one of India's poorest, most malnourished, and densely populated states, achieved a demographic transition to low birth and death rates between 1961 and 1974, unmatched by more prosperous Indian states and other less developed nations. He attributed these to a broad

set of social justice reforms including land redistribution, comprehensive access to primary education and public health services, which were followed by declines in infant and child mortality and only then, declines in fertility (Ratcliffe, 1978).

In the United States, groundbreaking qualitative work by Rainwater (1960), explored family planning and contraceptive behavior among working-class families in Chicago and Cincinnati, a group excluded from prior demographic studies. In particular, researchers revealed that lower-class working families experienced fertility well in excess of that which they desired, yet faced multiple challenges in aligning their fertility desires with what they experienced in their ability to control the spacing and total number of children (Rainwater). While higher income groups achieved greater success in family planning, their interviews with lower-class families revealed a plethora of social structure, resource access, belief, educational, personal capacity, and normative forces that created barriers to aligning desires with childbearing reality (Rainwater). While never using the specific term, Rainwater was among the first social science researcher to reveal ambivalence as a factor in failure to achieve family planning desires. While Rainwater described the team's objective of achieving ethnic diversity in their sample, there was no evidence of including black participants in the interviews and the sample was limited to married couples. One of the notable latent discoveries of Rainwater's work was that participants were willing to speak freely and in remarkable detail about sexuality and other intimate matters, topics ignored or purposely avoided in prior fertility research (Rainwater). Later, Rainwater (1970) extended his ethnographic work with black residents in federal slums, revealing several similar findings in the dimensions of pregnancy and childbearing.

Another milestone in fertility studies linking poverty and social class with excess fertility occurred with the 1965 National Fertility Study. While still focused on married couples, it expanded participation to racial minorities and broad social classes (Ryder & Westoff, 1971). Other landmark features of this study is that it differentiated between timing and number failures, plus changed the unit of analysis from a couples fertility history to an individual pregnancy or birth (Campbell & Mosher, 2000). The researchers revealed a sharp inverse relationship between socioeconomic status and the number of children “expected” versus “desired” and that this relationship was most striking for black women (Ryder & Westoff, 1971). In contrast to the number of children “expected” as well as actual fertility, the number of children “desired” by black women was actually lower than that of white women (Ryder & Westoff).

The preceding sections might be interpreted to suggest that broad international support exists for comprehensive reproductive health services and family planning, but this would be inaccurate. To the contrary, family planning and reproductive health have been among the more politically charged and divisive policy issues in both developed and developing nations.

Prefacing his reflection on the 1994 ICPD proceedings and his argument for comprehensive reproductive health, Diczfalusy (1995) articulated “seven dimensions of reality”: *scientific, economical, ecological, religious, ethical, cultural, and POLITICAL*, with the later purposefully capitalized (p.2). Absent concurrence among the seven dimensions, he contended the political or ideological reality would assume a commanding role (Diczfalusy). While the ICPD Programme of Action offered sweeping statements regarding reproductive health, family planning, and the rights of women, the

final document remained contingent, reflecting political and ideological discord of the assembly (Diczfalusy, 1995; United Nations, 2010). The introductory paragraph on reproductive rights incorporates "...The right of men and women to be informed and to have access to safe, effective, affordable, and acceptable methods of family planning of their choice, as well as other methods of their choice for regulation of fertility *which are not against the law* [emphasis added]..." (United Nations, para 7.2). Similarly, the Programme of Action regarding abortion access, the most contentious of reproductive health topics, included the contingency: "...In circumstances in which abortion is not against the law such abortion should be safe." (United Nations, para 8.25). Multiple oral and written statements from nations submitted for Part Two of the ICPD Programme of Action expressed reservation or incompatibility with constitutional or religious law, particularly surrounding abortion (United Nations).

The Catholic Church has occupied a notable position in the discourse, opposing most means of family planning and fertility control. Responding to the Angelican Synod's 1930 conference resolution that contraception might be permissible in certain circumstances, Pope Pius XI issued the Encyclical letter *Casti Connubii* that same year affirming the centuries old standing of St Augustine and St Thomas that sexuality in marriage must be aimed at reproduction (Benagiano et al., 2007). While *Casti Connubii* led many Catholic scholars to interpret the Encyclical as prohibiting even abstinence for birth spacing, Pope Pias XII clarified in two 1951 speeches that regulation of family size was permitted, but only through natural means (Benagiano et al.). During the Vatican II era of reform, Pope John XXIII, created the Papal Commission on Population, the Family, and Natality, raising expectations among Catholics that hormonal contraception

would become a permitted practice (Benagiano et al.; PBS 2010). Following the death of Pope John XXIII, Pope Paul IV continued the work of the commission, which produced a majority recommendation to permit hormonal contraception (Benagiano et al.; Ryder & Westoff, 1971). However, the Encyclical letter *Humanae Vitae*, issued by Pope Paul IV in 1968, reaffirmed the traditional position condemning all forms of birth control except for complete or periodic abstinence (Benagiano et al.; PBS; Ryder & Westoff).

Despite the official position of the Catholic Church, practicing Catholics demonstrated progressive nonconformity with church dogma (Benagiano et al., 2007; Ryder & Westoff, 1971; Westoff & Ryder, 1977). In the United States, a 1969 follow-up survey with (white, married) Catholic women who participated in the 1965 National Fertility Study revealed 60% of participants who expressed views against the Encyclical position and a majority (51%) using contraception other than abstinence or rhythm (Ryder & Westoff). In the subsequent (1970) National Fertility Study, there was increasing convergence in contraceptive practice between Catholics and non-Catholics, and the fertility rate among white Catholics demonstrated a steep decline from 1965 (Westoff & Ryder). While Catholics reported a desire for more children than non-Catholics, the researchers projected that differences between these groups in the adoption of modern contraception would largely disappear by the end of the 1970s (Westoff & Ryder). Internationally, countries where Catholicism is a dominant religion have been among those with the lowest birth rates, including Italy, whose 2003 fertility rate of 1.3 was among the lowest of all Europe (Benagiano et al.; United Nations, 2008). Benagiano et al. (2007) described Italians as becoming increasingly rigorous in social ethics, yet less

concerned about the teachings of the Catholic Church regarding contraception and abortion.

In the United States, while improved access to contraception and family planning services since 1970 has been recognized as a significant achievement in social justice and public health, political controversy continues to surround these programs (AGI, 2000; CDC, 1999). Persistent opposition of public family planning services has been linked to perceptions that these programs promote teenage sexual activity, encourage promiscuity, as well as that both increase demand for and encourage access to abortion (AGI).

History in the United States

The United States has occupied a unique position in the history of contraception and family planning as repressors, revolutionaries, and innovators. For the majority of United States history, family planning was considered inappropriate for public discourse and government support for contraception and family planning services was outside the realm of possibilities (AGI, 2000; CDC, 1999). As late as 1959 in a press conference surrounding foreign aid and birth control, President Dwight Eisenhower responded “Not our Business. I cannot imagine anything more emphatically a subject that is not a proper political or governmental activity of function or responsibility....This government will not, as long as I am here, have a positive political doctrine in its program that has to do with this problem of birth control. That’s not our business.” (Time, 1959). Interestingly, by 1965, Eisenhower had reversed his position on public support of family planning and served with former president Harry Truman as co-chair of Planned Parenthood – World Population (Kennedy, 1970).

The Comstock Act enacted by the United States Congress in 1873, plus related statutes in most states, made provision of contraception or the provision of education material related to family planning or abortion illegal by specifically including these in far-reaching obscenity laws (Centers for Disease Control & Prevention, 1999; Tome, 2001; Wardell, 1980). Named after the self-appointed morality crusader and primary New York prosecutor, Anthony Comstock, these laws had a chilling effect on the discussion of sexual and reproductive topics and made the United States the only western nation of the period to criminalize birth control supplies, services, or education (Wardell; Douglas, 1970). During World War I, US troops were the only Allied Forces servicemen sent overseas without condoms, which contributed to widespread sexually transmitted diseases among the troops (Tome). While federal anti-obscenity laws remain in effect and are enforced today, the Comstock Act barriers to the medical distribution of contraception were substantively diluted in high-profile court rulings in 1918 and again in 1936 (Douglas, Wardell,). Although the 1936 ruling in *United States v. One Package of Japanese Pessaries* removed federal prohibitions against doctors providing contraceptives to their patients, a multitude of state statutes remained in force. It was not until 1965 when remaining state Comstock contraception laws in Connecticut and Massachusetts were abolished for married couples by the US Supreme Court ruling in *Griswold v. Connecticut* (AGI, 2000; CDC, 1999). In 1972 the U.S. Supreme Court extended this ruling to unmarried persons in *Eisenstadt v. Baird* , plus state laws prohibiting abortion and a woman's ability to access abortion were struck down in 1973 Supreme Court rulings *Roe v. Wade* and *Doe v. Bolton* (AGI, 2000; CDC, 1999).

Perhaps no one has been attributed with driving the development and formal public acceptance of contraception in the United States as Margaret Sanger (1879-1966), popularly known as the mother of family planning (Diczfalusy, 1995; Wardell, 1980). Born Margaret Louise Higgins in Corning New York as the sixth of eleven children, she witnessed her mother's health progressively deteriorate after 18 pregnancies and die in her 40s (Douglas, 1970; Wardell). Free-willed and a social activist like her father, she completed training as a nurse. She was subsequently compelled to action from her work as a visiting nurse in the tenements of New York, where she observed women who were sick and died from multiple pregnancies, births, and self-induced abortions; and often begged with Sanger and unsympathetic physicians for information on how to prevent future pregnancies. In both her youth and work as a nurse, Sanger observed how wealthier families had fewer children, possessed better health, and were able to access services unavailable to the poor, despite the prohibitive Comstock laws (Douglas). Following a sentinel experience in 1912 working with a couple where the wife died from a second self-induced abortion and who had desperately sought assistance on preventing a repeat pregnancy, Sanger confirmed her purpose to assist women and couples who wished to control their fertility and to overturn the laws that prohibited them from receiving the information and services they desperately wanted: "It was the dawn of a new day in my life...I knew I could not go back merely to keeping people alive..." (Douglas; Sanger, 1938, p.494).

Sanger traveled to France in 1913 to learn pregnancy prevention techniques and returned to the U.S. eager to share what she learned, which she did through publishing a monthly newsletter, *The Woman Rebel* and founding the movement she named "Birth

Control” (Douglas, 1970). Following the expected indictment for Comstock violations related to her newsletter, Sanger fled to wartime Europe in 1914 to await a more favorable time for trial and immediately upon leaving U.S. waters, cabled her associates to distribute 100,000 copies of her new pamphlet *Family Limitation* which instructed readers on the specific birth control strategies she had learned in France (Douglas). Additionally, she considered the content of *Family Limitation* a much more significant reason to be on trial (Douglas). While in exile and studying in England, she traveled to the Netherlands after learning of their remarkably low infant and maternal mortality rates. There, she discovered a network of family planning clinics and a remarkable new birth control device, the diaphragm pessary, which she was trained to fit (Douglas). While Sanger was in Europe, her ex-husband William Sanger was entrapped and prosecuted by Comstock in giving away his only copy of *Family Limitation* to an agent posing as a distressed husband. In his sentencing hearing, William Sanger loudly declined an offer to pay a fine in lieu of 30 days in jail: “It is indeed the law that is on trial here today...I would rather be in jail for my conviction than to be free at a loss of my manhood and self-respect” (Douglas; *The New York Times*, 1915). While a legal loss, William Sanger’s trial gathered widespread attention and reflected a notable shift in public opinion regarding contraception and Comstock laws (Douglas; *The New York Times*).

Margaret Sanger returned to the U.S. in 1915 shortly after to face her own trial, which was delayed while she cared for her daughter dying of pneumonia, as well as deferral by the court. Likely due to the changing public opinion about birth control as well as the strengthened image of Sanger as a dedicated and grieving mother, the court dismissed charges against her in February 1916, although the laws remained unchanged

(Douglas, 1970). In October 1916, Sanger and her sister Ethel Byrne, also a nurse, opened the first U.S. birth control clinic in the impoverished Brownsville District of Brooklyn, New York., not only to provide service, but as a challenge to New York's penal code prohibiting contraceptive advice (Douglas). The clinic served 140 women on its first day and 488 by the time it was raided by the New York City Vice Squad on its tenth day (Douglas, Reed, 1978). Sanger, Byrne and their assistant/interpreter Fania Mindell were indicted on charges of selling an indecent book, running a public nuisance, and distributing contraceptive information (Douglas). Convicted first, Byrne was sentenced to 30 days in the workhouse, began a food and liquid hunger strike, became the first woman to be forcibly tube fed, and was pardoned by Governor after 10 days in prison, but near death (Douglas). Mrs. Byrne's ordeal captured the national headlines and attention of the nation, competing with World War I mediation negotiations with the New York Tribune reporting "...it will be hard to make the youth of 1967 believe that in 1917 a woman was imprisoned for doing what Mrs. Byrne did." (Douglas, p.114). Fania Mindell's trial occurred on January 29, 1917, was convicted of selling an obscene book, and was fined fifty dollars which was paid by a New York society woman. Sanger's trial followed and she was convicted under Section 1142 of the New York Penal Code for distributing contraception and she was sentenced to 30 days in the workhouse after being unwilling to promise to obey the law she did not respect and intended to appeal (Douglas). With the workhouse being unwilling to accept the sister of Ethel Byrne, Sanger served her sentence in relative comfort at the Queens County Penitentiary, where she slept, wrote, studied, and lectured to other inmates (Douglas). In 1918, New York State Supreme Court Judge Fredrick Crane upheld Sanger's conviction upon appeal but

issued a landmark ruling that reinterpreted another section of the penal code allowing licensed physicians to give contraceptive advice (Douglas, Reed). This was the first substantive reversal of standing Comstock laws and, combined with the notoriety of the cases and sentences, proved a turning point in the history of contraception in the United States (Douglas, Reed).

Sanger continued to make legal and clinical progress for contraception in the United States and became a respected ambassador of the birth control movement worldwide. In 1929, the previously oppositional New York Academy of Medicine provided instrumental support after a police brutal police raid that seized confidential medical records of Dr. Hannah Stone, a respected physician practicing in Sanger's Clinical Research Bureau (Douglas, 1970; Reed 1978). Directly or indirectly, the Catholic Church hierarchy orchestrated substantial political, social, and legal opposition to the birth control movement (Douglas; Reed). Postal and Tariff laws continued to prohibit importation of contraceptives, requiring most to be smuggled into the country (Douglas; Reed; Tone, 2001). In 1936, Sanger, Stone, and civil liberty attorney Morris Ernst collaborated to further erode federal Comstock laws through their victory in *United States v. One Package*, which established contraception as a legitimate part of medical practice and removed final barriers to disseminating contraceptive information and products (Douglas; Reed; Tone).

From the beginning of her interest in birth control, Sanger dreamed for a reliable and accessible method of contraception, a "magic pill" that could be totally within the control of the woman and freeing her from reliance on the man for prevention of pregnancy (Douglas1970; Reed, 1978: Tone, 2001, p. 208). In her 70's, Sanger was

increasingly despondent over the lackluster prospects of such a method as well as the political aversion by the scientific community and major funding entities to support such an endeavor (Douglas, 1970; Tone). In 1951, Sanger was introduced to reproductive biologist Gregory Pincus at a dinner party and persuaded him to join her quest for a new contraceptive (Reed; Tone). He surprised her by suggesting it may be possible using steroidal hormones (Reed; Tone). Pincus was a research scientist who rose in prominence at Harvard and established himself as an authority in mammalian sexual physiology (Reed). In 1934, he achieved notoriety in the scientific community for achievement of in-vitro fertilization of rabbit ovum, but suspicious and dramatized portrayals in popular media as a scientist enacting the fiction of Aldous Huxley's *Brave New World* (Reed, Tone). This undesired attention contributed to Pincus being denied tenure at Harvard, moving his research briefly to Cambridge, and then co-founding the private, non-profit Worcester Foundation for Experimental Biology (WFEB) in Shrewsbury Massachusetts, where he did steroid production research for G.D. Searle and eventually met Sanger (Reed; Tone). Sanger assisted Pincus in obtaining grant funds from the organization that she helped create, the Planned Parenthood Federation of America (PPFA). While totaling almost ten thousand dollars for initial animal studies between 1951 and 1953, this was a fraction of what would be needed and PPFA was lackluster in its commitment to supporting contraceptive research (Reed; Tone).

Katharine McCormick, a suffragist and long-time acquaintance and supporter of both Sanger and the birth control movement, became a prominent figure in the advancement of birth control research. Born in 1875 in an affluent family, McCormick was one of the first two women to graduate from the Massachusetts Institute of

Technology with a degree in science (Biology), and shortly after married Stanley McCormick, youngest son of the founder of the International Harvester Corporation (Douglas, 1970; Reed, 1978; Tone, 2001). After Stanley was diagnosed with schizophrenia in 1906, McCormick vowed to remain childless under the belief that the disease was hereditary and directed financial support to schizophrenia research, where she became familiar with scientist Hudson Hoagland, the subsequent WFEB co-founder with Pincus (Douglas; Reed; Tone). Following Stanley's death in 1947, the probate of his estate left McCormick the heiress of fourteen million dollars and new-found time to dedicate to her interests, which included contacting Sanger in 1950 to ask about the financial needs of the birth control movement and the status of contraceptive research (Reed; Tone). In 1953, McCormick and Sanger visited WFEB, with McCormick pledging to support Pincus's work, which included moving from Santa Barbara to Boston to more closely oversee the research and almost exclusively funding the work of WFEB (Reed; Tone). At the 1955 International Planned Parenthood Conference in Tokyo, Pincus announced initial clinical trials that ovulation in women could be inhibited by oral progestin administration (Diczfalusy, 2000; Tone). Between 1953 and her death in 1967, McCormick provided between \$150,000 and \$180,000 per year for development and follow-up research of the contraceptive pill, which was achieved with no governmental financial support (Reed, Tone).

Another significant, yet seemingly unlikely protagonist in the development of the contraceptive pill was prominent Massachusetts obstetrician, John Rock. A devout Catholic and social conservative who attended daily mass, Rock was a pioneer in the treatment of infertility and the early research of in-vitro fertilization, yet held a humanist

perspective toward birth control, having witnessed the suffering and physiologic toll on women from multiple pregnancies (Reed, 1978; Tome, 2001). Rock was the only Catholic among 15 physicians to petition the Massachusetts legislature in 1931 to repeal the law prohibiting the sale of contraceptives, opened a “rhythm method” birth control clinic in Boston in 1936, taught medical students about birth control as a professor at Harvard in the 1940’s, and co-authored the lay-reader book *Voluntary Parenthood* in 1949 (Reed, Tome). Pincus recruited Rock to oversee the initial clinical trials of progesterone as an extension of his infertility research at his Boston clinic as well as larger-scale clinical trials in Puerto Rico, Haiti, and Los Angeles (Reed, Tome). Together, Rock and Pincus decided on the medication regimen of 21 days of progesterone pills followed by seven days of placebo in order to maintain a “natural” menstrual cycle (Reed, Tome). Rock’s status as a practicing Catholic as well as his prominence in the medical and social circles was instrumental in garnering G.D. Searle’s approval of Enovid by the Food and Drug Administration, initially for the control of gynecological disorders in 1957 and finally, as a contraceptive in 1960 (Reed, Tome). Popular awareness of “the pill” had grown immensely and by late 1959, over a half-million women were taking Enovid (Searle) or norethedrone (Parke Davis) for their off-label contraceptive effects (Tome). Rock continued his advocacy for the approval of the contraceptive pill within the Catholic church as “natural” and an extension of the rhythm method, but became dejected with the encyclical letter *Humane Vitae* and for the first time, ceased attending mass (Tome; PBS).

For the first time, otherwise healthy women began using a daily medication for what was considered social preventive purposes, a use most physicians and

pharmaceutical companies considered unimaginable (Reed, 1978, Tome, 2001). The contraceptive pill quickly became the most popular method of contraception in the United States, with over 1.2 million U.S. women using the pill in 1962 and over 6.5 million users by 1967 (Reed; Tome). Contrasted to other countries, the contraceptive pill was almost a uniquely American experience in the 1960s with over half of the 12.8 million women taking oral contraceptives in 1967 residing in the U.S., followed by Canada, Brazil, and Britain (Tome). Lower-dose versions of Enovid were eventually approved by the FDA as well as products by other manufacturers, with the contraceptive pill being the most heavily researched and scrutinized pharmaceutical brought to market at the time (Tome). While the oral contraceptive has faced several challenges - ranging from safety concerns, to being a male-imposed burden/risk upon women, to promoting promiscuity, to concerns of racial-eugenic motives - the contraceptive pill became and remains among the most popular contraceptive options in the United States as well as most countries worldwide (Reed; Singh et al., 2009; Tome).

The story of the birth control movement in the United States is one of repression and desperation as well as passion, courage, and innovation. This unique history and evolution of birth control is reflected in both the acceptance and challenges of family planning today. Following the *United States v. One Package* decision, civil rights attorney Morris Ernst wrote: "In the United States we almost never repeal outmoded legislation in the field of morals. We either allow it to fall into disuse by ignoring it...or we bring persuasive cases to the courts and get the obsolete laws modified by judicial interpretation." (Douglas, 1970, p. 222). While legal barriers eroded over time, the entanglement of sexuality and contraception with morally conservative labels of

obscenity and vice persist to modern times. Combined with religious dogma that prohibits or stigmatizes contraception, young women and men face contradictory messages that may create conflict and ambiguity as they begin to navigate their sexuality and reproductive health decisions.

United States Public Policy and Programs

The 1960's posed a marked contrast to United States public policy proclaimed by President Eisenhower in 1959. To the surprise of most observers, newly elected Catholic President John F. Kennedy retrieved the recommendations of the Draper Report on foreign economic development aid and reversed the Eisenhower position, stating that if other governments sought assistance in curbing their population growth, the United States would give it (Douglas, 1970). Although President Kennedy changed the dialogue regarding birth control and offered assistance to other nations, it was the administrations of his successors, Lynden B. Johnson and Richard M. Nixon which initiated and expanded domestic programs (Tome, 2001). Even though these presidents altered the domestic agenda and the status of contraception in the United States, these policies arose less from a perspective of human rights or sexual revolution than from cold war fears of unchecked population growth in developing countries, the spread of communism, and the potential benefit to their domestic economic agendas (Tome).

President Lyndon B Johnson's *War on Poverty* and the Senate hearings sponsored by Earnest Gruening (Democrat of Alaska and physician) notably changed the landscape of domestic family planning policy in the United States, legitimizing the perspective of personal freedom of choice as well as building a moral imperative toward extending the middle-class privilege of contraception to the poor (Reed, 1978). While embracing a

rhetoric of social justice, much of the implicit and explicit justification for expanding family planning access centered on abating domestic welfare relief costs and government supported maternity and infant care - policy rationale that continues today (AGI, 2000; Sonfield, Alrich, & Gold, 2008; Tome, 2001). Beginning in 1965, the United States Office of Economic Opportunity began funding family planning grants to community agencies and Planned Parenthood affiliates under its “Local Option” policy for initiating welfare programs (AGI; Reed). Additionally, the Maternal Child Block Grant program (Title V Social Security Act of 1942) was amended in 1967, requiring state health departments to allocate at least six percent of block grant funds to family planning (AGI, Reed). This requirement was eliminated in 1981 (AGI).

Enacted in 1965, Title XIX of the Social Security Act developed the federal Medicaid program which focused on health care access for persons in poverty, allowing states to claim reimbursement for family planning services (as an optional program) and requiring that they provide family planning information and services to welfare recipients (AGI, 2000). During the initial years of the program, access varied widely across the 50 states, Medicaid family planning service recipients were largely limited to single mothers who received welfare cash assistance, plus welfare staff and social service providers had limited training or expertise to provide information and services (AGI; Sonfield et al., 2008). In 1972, Congress changed inclusion of family planning services from an optional to a mandated program for any state participating in Medicaid and supported states in doing so by offering a 90% federal cost match (AGI). Still, individual access was restricted by limits of Medicaid eligibility.

In the late 1960s, Medicaid and block grant supported programs served only a small portion of the approximately five million low income women in need of financial support for family planning services, leaving racial minorities and youth particularly vulnerable to unwanted pregnancy (AGI, 2000). Fulfilling his 1969 campaign pledge, President Richard Nixon established a five-year national goal of universal access to woman-focused family planning services regardless of ability to pay for care (AGI). With bipartisan support from Congress, Nixon's promise came to fruition in 1970 with passage of Title X of the United States Public Health Services Act, the first and only federal program categorically dedicated to family planning (AGI; Lindberg, Frost, Sten, & Dailard, 2006). Title X drastically changed the uneven landscape for family planning access, stimulating the rapid establishment of a nationwide network of clinics and serving a wide swath of society, including some of the most disadvantaged and difficult to reach populations (AGI). Almost two thirds of Title X clinic clients have been served by Health Departments and Planned Parenthood affiliates, with the remainder served by community health centers, hospital-based clinics, and other independent providers (AGI; Lindberg et al.). In addition to establishing a network of accessible providers, Title X and its regional programs have been credited with establishing clinical standards for contraceptive and reproductive health practice, ethical modeling of voluntary decision-making and confidentiality, outreach to vulnerable and marginalized groups, and delivery innovation that has evolved with changing needs (AGI; Lindberg et al.). The most notable achievement of subsidized family planning services was significant progress toward Richard Nixon's stated goal of eliminating economic disparities in accessing family planning. Between 1982 and 1995 the percentage of low-income and at-risk U.S.

women using contraception rose from 68 percent to 92 percent, with specific improvements from 73 percent to 90 percent among black women and 78 percent to 91 percent for Hispanic women (AGI).

While Title X funding accounted for the majority financial support to clinics in the 1970s, funding services provided for clients at reduced or no fee, this direct federal funding diminished in proportion over subsequent decades. In 1980, Title X funds comprised approximately half the public support for family planning, diminishing to 20 percent in 1997, and 12 percent in 2006, with Medicaid shifting to become the majority funding source (AGI, 2000; Lindberg et al., 2006; Sonfield et al., 2008). While public funding for family planning increased progressively from low levels in the 1980s through the 1990s, it has not kept pace with the rapidly increasing cost of contraceptive supplies (Lindberg et al.).

From onset, Title X and its network of providers has been challenged by social and political controversy, primarily centered on two previously mentioned claims: that confidential access to contraception and information promotes teenage sexual promiscuity and that family planning clinics and availability of contraception encourages abortion (AGI, 2000). This stigma has extended to almost all family planning providers, whether or not recipients of Title X funding, and regardless that use of federal funds has never been permitted for abortion (AGI). Just as Comstock-era policies and religious dogma created conflicting messages and stigma for women (and men) in need of family planning services, opposition from activist groups and related policy initiatives have created continued challenges in recent decades (AGI, Espey, Cosgrove, & Ogburn, 2007). In 1982 the Reagan administration imposed a requirement on Title X clinics to inform

parents prior to dispensing contraception to minors, popularly known as the “squeal rule”. While struck down in several courts as subverting the intent of Congress, this issue has reemerged in subsequent Title X funding bills and seen in state laws that limit consent by minors (AGI; Guttmacher, 2011). In 1987, the Reagan administration forwarded additional federal regulations, known as the “gag rule” that prohibited Title X providers from discussing abortion with clients, even if specifically requested. While opposed by almost all medical organizations and members of Congress, the gag rule was declared constitutional by the Supreme Court in 1991, but was re-challenged and only in effect for one month before being suspended by President Clinton in 1993 (AGI). Additionally, Title X experienced steep funding cuts during the 1980s under the Reagan and George HW Bush Administrations, with partial recovery of appropriations during the Clinton Administration (AGI). In foreign policy, the Reagan and (George HW) Bush administrations withheld funding to the United Nations Population Fund (UNFPA) citing federal anti-coercion law and holding that UNFPA supported coercive abortion and sterilization policies. While the Clinton administration reversed this policy and restored UNFPA funding, George W. Bush suspended funding seven times during his presidency until reversed again in 2009 by the Obama administration (Guttmacher Institute, 2008, 2009).

In regards to family planning, the administration of George W. Bush from 2001 through 2008 was noted as one that was more ideologically driven, restrictive, and politicized than most recent presidencies (Boonstra, 2003; Cohen, 2007; Dailard, 2006; Espey et al., 2007; Gold, 2001, 2004; Santelli 2008). In addition to blocking UNFPA funding, the administration reinstated Reagan’s 1984 Mexico City Policy or “global gag

rule” which prohibited US aid funding to international groups that used funds from any source to offer abortion counseling or services, plus distanced US foreign policy from contributing to the ICPD Programme of Action and Millennium Development Goals (Barot, 2009; Cohen 2007, 2009). Domestically, the Bush administration drew criticism from the scientific community for its suspension or restructuring of scientific advisory committees with appointees representing political loyalty or like ideological views, with particular impact on committees advising the policy and research agendas for the National Institutes of Health (NIH), CDC, and the Food and Drug Administration (FDA) (Boonstra; Santelli, 2008). Additionally, well-established consumer information regarding condoms, contraceptive methods, HIV, and abortion was either removed or substantially modified to generate uncertainty of effectiveness or safety (Boonstra).

While established as a part of welfare reform in 1996, abstinence-focused sex education assumed new and more restrictive interpretations during the Bush administration with increases in funding from the 50 million dollars approved by Congress in 1996 to over 176 million for 2006 (Dailard, 2002, 2006; Espey, Cosgrove & Ogborn, 2007; Guttmacher, 2006). This drive for abstinence-only education continued despite evidence that over 80% of funded curricula contained false, misleading, or distorted information, plus was ineffective in reducing pregnancy, abortion, or sexually transmitted infections among teens (Committee on Government Reform – Minority Staff, 2004; Dailard, 2006; Espey et al., 2007; Santelli, 2008). Additionally, the Bush administration made several unsuccessful attempts to cut federal responsibility for Medicaid costs with capped block grants as well as actively opposed approval of new and renewal state family planning expansion waivers. The administration softened its position on the latter

following bipartisan threats to legislate automatic expansions for states, yet added additional hurdles for states to secure waivers (Gold, 2001, 2004; Sonfield & Gold, 2005; Sonfield et al., 2008).

Medicaid and Expansions

In 2006, 65% of United States women age 15-44 have some form of private insurance coverage, with 20% uninsured, and 12% enrolled in Medicaid. For women at and below the federal poverty level, reliance on Medicaid was 37%, with 40% uninsured and 21% had private insurance (KFF, 2007). While Medicaid, including the State Children's Health Insurance Program (SCHIP), is one of the most important resources for health care access for low income women, eligibility and enrollment varies widely between states based on income and state-defined criteria (KFF). Despite a very limited role in family planning at inception of this federal-state program for the poor, beginning in the mid-1980s, Medicaid has evolved to become the single largest funding source for publicly-supported family planning services (KFF; Sonfield et al., 2008).

As previously noted, Congress passed legislation in 1972 requiring states to offer family planning information and services to women receiving Aid to Families with Dependent Children (AFDC, also known as "welfare"), and offered state Medicaid programs incentive to do so by offering nine dollars of federal match for every state dollar expended (AGI, 2000; Benson, Singh, & Frost, 1993). Unfortunately, this still limited eligibility predominantly to those women whose incomes were well below poverty level, were already receiving welfare due to being an unmarried mother, and to those who were able to navigate cumbersome welfare enrollment processes (Benson et al.). Remarkable changes to Medicaid occurred during the 1980s, when Congress took

action to separate the link between Medicaid eligibility and welfare, based on growing evidence that early prenatal care was essential to decreasing incidence of low birthweight and infant mortality (Benson et al.). In 1984, Congress expanded Medicaid eligibility to low-income women who were pregnant with their first child, followed in 1985 by requiring states to consider eligibility based on women's income, regardless of family structure, then allowing states to increase income eligibility income eligibility to 100% of federal poverty level in 1986 while still receiving typical 50-76% federal matching funds (Benson et al.; Sonfield et al., 2008). In 1986, Congress allowed states to extend pregnancy eligibility for up to 60 days postpartum and expand income threshold to 185% of poverty. By 1989, states were required to enroll women up to 133% of poverty, while retaining the option to cover women up to 185%, and were granted flexibility to experiment with outreach and alternative enrollment strategies (Benson et al.). During the 1990's, notable changes included welfare reform in 1996, client exemption from cost sharing for family planning services, permitting family planning (and pregnancy) self referral under Medicaid managed care, and expanded coverage for children with the creation of SCHIP in 1997 (KFF, 2007; Sonfield et al., 2008).

Based on their experiences with the pregnancy-related expansions, several state Medicaid programs sought to expand eligibility for their family planning services, which was particularly attractive to states given the 90% federal match for family planning vs. the 50-76% match for pregnancy care and other services (KFF, 2007; Lindrooth & McCullough, 2007; Sonfield et al., 2008). To expand eligibility for a specific program, states were required to apply for and obtain a Section 1115 research and demonstration waiver from the Health Care Financing Administration (HCFA, now Centers for

Medicare and Medicaid Services [CMS] after 2001), with the requirement that the federal portion of the cost could not exceed what would be spent without the waiver, but must be “budget neutral”. Additionally, demonstration waivers would be limited to five years, with the potential for a three year renewal (KFF; Frost, Sonfield & Gold, 2006; Lindrooth & McCullough; Sonfield et al.). With pregnancy and infant care costs being among the highest expenses for their Medicaid programs, states argued that averted pregnancy costs, particularly those for unintended pregnancies, would readily offset the costs of their family planning expansions. South Carolina was the first state to receive approval for a waiver in 1993, with 12 states having waivers in place by 2000, and 26 states by 2007 (KFF; Frost et al.; Lindrooth & McCullough; Sonfield, Alrich, & Gold).

The scope and eligibility for family planning waivers varied state by state, but each were based on one of three general forms. Most conservative were postpartum expansions and continued-care expansions (KFF, 2007; Sonfield et al., 2008). Postpartum expansions offered continuing eligibility for family planning services for one or more years following a Medicaid-funded birth where continued-care expansions provided ongoing family planning eligibility if a woman lost Medicaid eligibility for any reason. The most aggressive strategies were income-based expansions where no prior participation in the Medicaid program was required and eligibility was based solely on income, with thresholds most commonly at 185% or 200% of FPL (KFF; Sonfield et al.). One core objective of these programs was to expand eligibility and a woman’s access to family planning *prior* to becoming pregnant (Cawthon, Keenan-Wilkie, Lyons, & Rust, 2006). Of the 26 states with approved waivers in 2007, 20 were income based expansions, four were postpartum extensions, and two were continued-care programs.

Additionally, waiver programs frequently included innovative strategies, including: enhanced outreach efforts to potential clients and providers, name branding to decrease the stigma of Medicaid, simplified enrollment processes, presumptive eligibility, point-of-service applications, linkages to other services/programs, inclusion of men, and unique strategies to protect confidentiality (Sonfield et al.). In 2008, approximately 75% of U.S. women in need of subsidized family planning services lived in a state with some form of Medicaid expansion (Sonfield et al.). Health care reform legislation in 2010 granted additional flexibility to states, allowing them to expand eligibility for family planning services by permanently amending their state Medicaid plan verses a waiver. Since 2008, two additional states have received waivers and two states have converted their waivers to plan amendments (Guttmacher, 2011). Washington State initiated its *Take Charge* family planning expansion program in 2001 and is among the 200% FPL income-based expansions, was among the eight expansion programs that included men and incorporated the range of program innovations listed above (Cawthon et al.; Sonfield et al.).

Beginning with the pregnancy-related expansions in the early 1990s, the role of Medicaid as a funder of subsidized family planning has grown rapidly in both prominence and cost, a trend that has escalated rapidly with the family-planning expansions of the 1990s and 2000s (AGI, 2000; KFF, 2007; Sonfield et al., 2008). While representing 20% of public family planning expenditures in 1980, the Medicaid portion grew to 33% in 1987, 47% in 1994, 61% in 2001, and 71% by 2006 (Sonfield et al.). In 2006, Medicaid funded approximately 1.3 billion of the 1.85 billion dollars expended for public family planning, an increase from approximately 350 million of the 711 million (actual, not inflation adjusted) dollars spent in 1994 (KFF, Sonfield et al.). Much of this

increase in Medicaid and total family planning expenditures since 1994 has been attributed to greater enrollment of clients in states with waivers and pronounced inflation in the cost of providing family planning services, particularly contraceptive supplies (KFF; Lindberg, Frost, & Dailard, 2006; Sonfield et al.). Where public family planning expenditures between 1980 and 2006 increased 428% in actual dollars, the inflation adjusted increase during that same period was 63%, with 18 states experiencing inflation-adjusted decreases or stagnation in funding (Sonfield et al.). Increases in Medicaid family planning expenditures approximated overall spending growth of the 300 billion dollar Medicaid program, which saw spending grow 75% from 1995 to 2002 and where 2006 family planning costs accounted for less than one-half of one percent of program spending (KFF; Sonfield et al.).

The marked increase in Medicaid family planning expenditures raises questions of whether expansions have been a prudent use of public resources, and a growing body of evidence suggests that they have been (KFF, 2007; Lindrooth & McCollough, 2007). In 2002 CMS contracted with the CNA Corporation in conjunction with Emory University and the University of Alabama to conduct a study of eight state waiver programs, intending to determine whether the programs were budget neutral, increased access for targeted populations, and whether they achieved reductions in unintended pregnancy (AGI, 2004; Edwards, Bronstein & Adams, 2003). In their modeling of six state programs for budget neutrality, the team calculated net savings to both state and federal Medicaid programs that favorably exceeded program expectations. Additionally, five of six programs, all income-based designs, demonstrated capacity to enroll and serve eligible women. However, reductions in measures of unintended pregnancy were

inconsistent across the eight states reviewed and the researchers raised concerns about the multiple confounders and sensitivity of their modeling strategy (AGI, 2004; Edwards et al.).

Examining the massive California Family Planning, Access, Care, and Treatment (PACT) program, Foster et al. (2004) modeled changes to unintended pregnancy using claims data and clinical record review for 1997 and 1998. They estimated that PACT reduced unintended pregnancy by 108,000 and that these pregnancies would otherwise have resulted in 50,000 births and 41,000 induced abortions (Foster, et al.). A follow-up cost analysis study by Amaral et al. (2007) applied Foster's methodology to 2002 PACT data, estimating 205,000 averted pregnancies, and applied this to two and five-year cost projections, modeling a range of pregnancy outcomes, direct medical expenses for mother and infant, as well as welfare support. They projected averted pregnancy-related costs of 1.1 billion in the two-year models and 2.2 billion in the five-year models, which exceeded the \$404 million in program costs. For each dollar spent for the California family planning expansion, they projected \$2.76 in savings at two years and \$5.33 within five years (Amaral et al.). An additional assessment of the California PACT by Brindis et al. (2003) revealed that program and delivery strategies increased adolescent participation from 100,000 in 1995-96 to 260,000 in 2000-01, including expanded participation among ethnic minorities and males.

Drawing upon data from states with expansions as well as NSFG and database information from all states and the District of Columbia in years 2002-2005, Frost et al. (2006) employed established modeling strategies to simulate costs and benefits of family planning expansions if adopted by all states. The researchers generated four income-

based scenarios, including two scenarios with required expansion up to 200% or 250% of FPL, one scenario where states could expand to 200% FPL on an optional basis and one where states would be required to establish family planning eligibility on parity with their eligibility for pregnancy-related care. The team found that all four scenarios generated savings to both states and the federal government by the third year of expansion, with the pregnancy-parity model being the most cost effective, yielding \$2.90 in savings for each dollar spent, even though this model averted fewer unintended pregnancies than the mandatory 200% and 250% scenarios. The mandatory 250% scenario yielded the greatest number of averted pregnancies but would be the most expensive to implement, yielding lower net savings of \$2.20 per dollar. The optional 200% scenario was projected to avert the fewest unintended pregnancies, but generated the second highest cost savings at \$2.80 per dollar because of the program's lower national implementation costs (Frost et al.).

Lindrooth & McCulough (2007) conducted econometric modeling on the effect of expansions, focused specifically on the reduction of trend-adjusted birth rate, an outcome that had not been clearly demonstrated in state project reports or other studies. They compared data from 12 states with expansion projects in place prior to year 2000 with state, regional, and national birth data from 1991-2001. The expansion states included eight income-based programs and five postpartum programs, with South Carolina counted twice as that state converted its program to income-based in 1997. The income-based programs demonstrated statistically significant reductions in birth rates, particularly when controlled for national trends and less so when controlled for regional and state-specific trends. However, postpartum programs did not produce significant

birth rate reductions. When estimating cost offsets with a subset of states, Lindrooth & McCollough's analysis revealed statistically significant net savings from averted births for income-based programs, with particular savings for the states because of the 90% federal family planning match. The size and high cost of California's PACT program resulted in savings to the federal government that was not statistically significant (Lindrooth & McCollough).

While Lindrooth and McCollough (2007) concluded that income-based expansions demonstrated a much greater effect than postpartum expansions and speculated that this occurred because income-based programs expanded eligibility to all women, an alternative explanation is that the women served in these different programs represent different populations with different demographic characteristics and perspectives toward pregnancy (Cawthon, Rust & Efav, 2009). In Washington State's evaluation of its two cycles of family planning waivers, evaluators found that participants who enrolled based on income eligibility differed both demographically as well as in future pregnancy intention from those who became eligible due to a prior pregnancy, with income-based participants demonstrating greater desire to avoid pregnancy (Cawthon et al.). The aims of this research include the attempt to further uncover differences in characteristics between these groups by focusing on the qualitative reflections of postpartum women who participated in this 2007 Washington State survey.

Unintended Pregnancy

Unintended pregnancy is a concept at the heart of public policy and clinical practice concerns regarding excess fertility. Unintended pregnancy has been associated with a host of serious social and health consequences, including preterm birth, low

birthweight newborns, increased infant mortality, increased maternal risk behaviors, inability to participate in preconception and early prenatal care, increased maternal mortality and morbidity, disrupted attainment of life goals, poverty, and welfare dependence (Brown & Eisenberg, 1995). Additionally, abortion is a common outcome of unintended pregnancy that carries significant social, political, and moral burdens (Brown & Eisenberg).

In contemporary demographic measures, such as the National Survey of Family Growth (NSFG) and the Pregnancy Risk Assessment Monitoring System (PRAMS), a pregnancy is defined as *unintended* if the woman (or partner, depending on the survey) expressed that they did not want to become pregnant at that time (Campbell & Mosher, 2000; Santelli et al., 2003). An unintended pregnancy is further defined as *unwanted* if the mother did not wish to become pregnant at the time it occurred or any time in the future, and a *mistimed* pregnancy is one that occurred sooner than it was wanted. A pregnancy is considered *intended* if the woman responded that she wanted to become pregnant at the time it occurred or sooner than it occurred (Campbell & Mosher; Santelli et al.). Similar to the concept of unintended pregnancy, an *unplanned* pregnancy suggests a pregnancy that occurred while a woman was using a contraceptive method or one that occurred when she did not desire to become pregnant but was not practicing contraception (Santelli et al.). While rarely seen in literature since the 1970s, the term *illegitimacy* refers to a pregnancy and birth that occurs to a woman while she is unmarried or one that results from incest or adultery (Cutright, 1971).

Other than *illegitimacy*, the prior definitions have evolved since the mid 1960's. Earlier United States demographic studies, including the original 1941 study of Social

and Psychological Factors Affecting Fertility, commonly known as the Indianapolis Study, measured only couples' fertility history, with excess fertility being the number of births beyond what was desired (Campbell & Mosher, 2000; Santelli et al., 2003). Additionally, the studies prior to 1965 focused almost exclusively on white, married couples, with the 1960 National Fertility Study being the first to include a small sample of black women (Campbell & Mosher, 2000; Westoff & Ryder, 1977). In 1965, the National Fertility Study introduced two new concepts in measurement of fertility: first, identifying the individual birth or pregnancy as the unit of analysis, versus fertility history and second, creating a distinction between pregnancies and births that were unwanted because of mistiming (occurring too soon) versus pregnancies or births that were unwanted regardless of timing, called *number* failures (Campbell & Mosher; Santelli et al.). While Westoff and Ryder (1977) did not continue this measurement strategy in their 1970 cycle of the National Fertility Study, it was incorporated in the 1973 NSFG and all subsequent cycles of that study (Campbell & Mosher, Santelli et al.).

Conventional Measurement

Dichotomous differentiation between intended and unintended pregnancy has become the standard descriptor in understanding fertility and has been important in efforts to understand the health and social impact of pregnancy on women and children, planning public programs, articulating unmet need for contraceptive services, targeting at-risk populations, advocating resource allocation, and research planning (Brown & Eisenberg 1995; Santelli et al. 2003; Santelli, Lindberg, Orr, Finer, & Speizer, 2009). Almost all data regarding pregnancy fertility, and pregnancy intention is generated from large representative demographic surveys and surveillance systems previously

mentioned, including the National Survey of Family Growth (NSFG), the CDC Pregnancy Risk Assessment Monitoring System (PRAMS), and internationally, the Demographic and Health Surveys (DHS) (Finer & Henshaw, 2006; Santelli et al.; Mosher & Jones, 2010). Data from these sources are commonly merged with other national data on birth and abortion incidence to estimate rates of intended and unintended pregnancy (Finer & Henshaw; Finer & Kost, 2011; Santelli et al. The most recent wave of the NSFG was conducted between 2006 and 2010, with some data beginning to emerge from that survey of 12,279 women and 10,403 men (Lepsowski, Mosher, Groves, West, Wagner, et al., 2013; Mosher & Jones).

In almost all surveys, reflections about pregnancy intentions are collected retrospectively, typically following a birth and ask women (and sometimes men) to reflect on their thoughts about pregnancy at the time they became aware of their pregnancy (Santelli et al. 2003; Santelli et al., 2009). While pregnancies are typically categorized as intended or unintended, those words are not used in actual survey questions and for pregnancies that are categorized as unintended-mistimed, the extent of mistiming is generally not assessed (Santelli et al). Supporting the exclusion of the term, a small grounded theory study revealed that the word “intended” possessed negative connotations among the low-income women interviewed (Gerber, Pennylegion, & Spice, 2002). Pregnancies that end in abortion arise from other surveillance data and are generally classified as unintended, although as many as four to eight percent of abortions have been associated with intended pregnancies (Finer & Henshaw, 2006; Santelli et al.). An assumption underlying almost all demographic survey questions and data reporting is that pregnancy is a conscious decision process (Santelli et al.).

Preceded by the 1965 and 1970 National Fertility Studies (NFS), the NSFG has been the most comprehensive and representative source of information on pregnancy and contraceptive use and was conducted in 1973, 1976, 1982, 1988, 1995, and 2002, with a most recent wave beginning in 2006 (Campbell & Mosher, 2000; Lepsowski et al., 2013; London, Peterson, & Piccinino., 1995; Mosher & Jones, 2010). While making slight modifications and expanding the question set as different waves of the NSFG were conducted, the foundational questions regarding pregnancy intention have remained basically the same, primarily to preserve consistency across the long-term time series for measurement of unintended pregnancy trends (Lepsowski et al., 2013; London et al.; Mosher et al., 2012; Peterson & Mosher, 1999; Speizer, Santelli, Afable-Munsuz, & Kendall, 2004, Santelli et al., 2009). From inception, the NSFG has relied on two core questions differentiate between number and timing failures, and create the intended-mistimed-unwanted classification (Campbell & Mosher; Peterson & Mosher). Women are first asked to reflect back on the time they became pregnant and if they “wanted to have a(nother) baby at some time”, followed by whether she became pregnant “sooner than you wanted, later than you wanted, or at about the right time?” (Campbell & Mosher, p.168; London et al., 1995, p287; Santelli et al., 2003). By 1988, questions regarding pregnancy intention and timing encompassed three questions and then separated into five related questions by 2002 (London et al., 1995, p287; Santelli et al., 2003). All of the NSFG surveys beginning in 1973 asked women to reflect on whether their husband or male partner wanted her to become pregnant when she did, although those reflections were not used to classify the pregnancy as intended or unintended (Campbell & Mosher; London et al.,). Until 1982, the NSFG limited its sample to ever-

married women, who constituted most childbearing in the United States, but the sample was expanded in 1982 and beyond to all women 15-44 years old regardless of marital status, responding to the increasing number of births that were occurring outside marriage (Campbell & Mosher; London et al.). Additionally, the NSFG included questions regarding contraceptive use around the time of their pregnancy and in 1995 added questions regarding how happy or unhappy the woman was to be pregnant at that time (Campbell & Mosher; Peterson & Mosher).

In addition to the NSFG, the Pregnancy Risk Assessment Monitoring System (PRAMS), a population-based surveillance program sponsored by the CDC and state health departments, serves as a prominent source of state-based data on unintended pregnancy, pregnancy care access, and pregnancy-related health indicators (CDC-PRAMS, 2013; Sonfield, Kost, Gold, & Finer, 2011; Santelli 2003). PRAMS was initiated in 1987 as a response to stagnation in decline of infant mortality in the United States as well as continued high incidence of low birthweight births (CDC-PRAMS). In 2010, 37 states participated in PRAMS surveillance, representing approximately 75% of live births in the United States, with each state sampling between 1300 and 3400 women (no men) per year via mailed surveys or (if no response) telephone interviews (CDC-PRAMS). Seven other states have conducted surveillance with varying degrees of similarity and timing to PRAMS (Finer & Kost, 2011).

Since inception, PRAMS has measured pregnancy intention and timing using one combination question, asking the woman to reflect back to the time just before she became pregnant and respond whether she wanted to become pregnant sooner, later, at that time, or not at all (CDC-PRAMS, 2013; Santelli, 2003). Responses to this one

question are used to determine whether a pregnancy is categorized as intended, unintended, or mistimed, with a woman who desired pregnancy earlier or at that time as intended, a woman who desired pregnancy later as unintended-mistimed, and a woman who did not desire pregnancy then or in the future as unintended-unwanted (Brown & Eisenberg, 1995; D'Angelo, Gilbert, Rochat, Santelli, & Herold, 2004; Santelli, 2003). PRAMS includes a wide variety of other pregnancy-related health questions including contraception, partner interest, breastfeeding, nutrition, prenatal care, tobacco use, insurance coverage, and prior births, but does not inquire about prior pregnancy losses or abortion (CDC-PRAMS, 2013; Finer & Kost, 2011). Across the 39 states participating in PRAMS, Finer and Kost observed wide variation in rates of unintended pregnancy, an upward trend between 2002 and 2006, plus noted the challenges associated with the single-question intention measure as well as integrating a variety of data sources on outcomes, particularly for pregnancies that ended in miscarriage or abortion.

Evolving Measurement

Beginning in the mid 1990s, researchers increasingly recognized limitations in conventional measurement of pregnancy intention, arising from both the questions used to elicit intention as well as the process of retrospective measurement (Bachrach & Newcomer, 1999; Brown & Eisenberg, 1995; London et al., 1995; Luker, 1999; Sable, 1999; Santelli et al., 2003; Speizer, Santelli, Afaible-Munsuz, & Kendall, 2004; Trussell, Vaughan, & Stanford, 1999; Zabin, 1999). Retrospective versus prospective measurement was a concern generated with the fertility studies of the 1960s and 1970s, but remains the prevailing measurement methodology to present day (Bachrach & Newcomer; Mosher et al., 2012; Santelli et al., 2009; Westoff & Ryder, 1977). Measurement concerns largely

arose from finding about happiness toward pregnancy and childbearing even when a pregnancy was reported as unintended or the result of a contraceptive failure (Bachrach & Newcomer; D'Angelo et al., 2004; Henshaw, 1998; Luker; Santelli, Roach, Hatfield-Timajchy, Gilbert, Curtis, et al.; Trussell et al.). While women often reported use of a contraceptive method prior to the time they became pregnant, it was not uncommon for researchers to find inconsistent use of contraception or non-use despite reports by at-risk women of not wanting to get pregnant at the time (Brown & Eisenberg; Foster, Bley, Mikanda, Induni, Arons, et al., 2003; Fu, Darroch, Hass, & Ranjit, 1999; Iuliano, Speizer, Santelli, & Kendall; 2006; Ranjit, Bankole, Darroch, & Singh, 2001; Trussell & Vaughn, 1999; Trussell et al.; Zabin).

Increasingly, ambivalence toward pregnancy and parenthood has been recognized as a confounder in the measurement and expression of pregnancy intention, and the underlying assumption of pregnancy as a conscious decision process has been challenged (Bachrach & Newcomer, 1999; London et al., 1995; Luker, 1999; Santelli et al., 2009; Santelli et al., 2003; Zabin 1999). In an attempt to capture more of the nuance and various dimensions underlying pregnancy intention, the National Survey of Family Growth (NSFG) incorporated additional questions and methods to enhance the data gathered while retaining conventional questions to preserve its long-term time-series capacity (Campbell & Mosher, 2000; London et al.; Mosher et al., 2012; Peterson & Mosher, 1999). Additional dimensions added to the NSFG question set included measures of: wanting pregnancy, degree trying to become or avoid pregnancy, happiness toward pregnancy, how the women felt about getting pregnant, perceived partners intentions toward pregnancy, desire to have a baby with her partner, relationship with

partner, concern about money, and other hindrances and feelings about telling others (Campbell & Mosher; Mosher et al.; Peterson & Mosher; Speizer et al., 2004). However, the retrospective measurement methodology was retained and continued through the most recent wave of the NSFG that occurred from 2006 to 2010 (Lepsowski et al., 2013; Mosher et al., 2012; Santelli et al., 2009). One exception to this was a 1990 follow-up telephone survey of 5886 women who had previously responded to the 1988 NSFG and had indicated they wished to postpone or avoid future pregnancy, with the inquiry focused on any subsequent births between 1988 and 1990 (Williams, Abma, & Piccinino, 1999).

In response to the increased breadth of questions in subsequent waves of the NSFG and continuing challenges on how these measures may be used to actually assess intendedness of pregnancy, Speizer and colleagues (2004) analyzed data collected from 1190 women as part of the *Determinants of Unintended Pregnancy Risk in New Orleans Study*, which employed 15 dichotomous and scaled NSFG pregnancy intention measures plus five study specific measures. Employing both bivariate and factor analysis, the team compared groups that presented to family planning and prenatal clinics, as well as between first and higher order pregnancies, revealing a single latent factor, named pregnancy desirability, which explained between 85% and 95% of shared variability across models (Speizer et al.). Three variables common to all models and across groups included *happiness*, *effort in achieving pregnancy*, and *desire to have a baby with her partner*, plus findings that the conventional measure of intendedness helped explain the latent construct for the first pregnancy only, where *wantedness* and *planning* were connected with the latent factor only for second and higher order pregnancies (Speizer et

al.). The researchers expressed concern that the discovery of a single latent factor contradicted their thinking as well as findings from a concurrent qualitative study that suggested pregnancy intention as multidimensional in nature, suggesting that the measures may be unable to capture the complexity of pregnancy intentions (Speizer et al.; Kendall, Afable-Munsuz, Speizer, Avery, Schmidt, et al. 2004). Additionally, Santelli and colleagues (2005) further explored various dimensions of pregnancy intention and decision to seek abortion among low-income New Orleans women who were initiating care in prenatal and abortion clinics, revealing that conventional measures for pregnancy mistiming and being unwanted did not discriminate well between decision to seek prenatal care or abortion. In this very limited population, they found that responses to affective dimensions of *happiness*, *surprise*, *confusion*, and *being scared* as well as contextual dimensions of *perceived partner desire* and *partner relationship* to be more closely associated with decisions to seek abortion (Santelli et al.). Subsequently, Santelli and colleagues (2009) expanded on their previously identified factor of *pregnancy desirability* to conduct factor analysis on dichotomous and four scaled variables to generate a multivariate pregnancy *desire* scale based on a combination of six highly loading questions or categories: happiness, wanting, trying, wanting with partner, on time, and unwanted. Multivariate logistic modeling, incorporating live birth and abortion outcomes, resulted in two key dimensions of *desire to become pregnant* and *mistiming*, with the recommendation that surveillance systems report degree of desire and mistiming verses conventional dichotomous measures (Santelli et al.). The researchers noted several limitations, including the continuation of retrospective reporting and need to explore

additional life circumstances dimensions, particularly in longitudinal and prospective studies (Santelli et al.).

Prevalence of Unintended Pregnancy in Populations

In the early 20th century, Margaret Sanger observed that women and families who possessed greater financial resources and social status had fewer children than those who were poor, regardless of Comstock laws that prohibited access to contraception, fertility control education, and abortion (Douglas, 1970). Although researchers engaged multiple strategies to minimize social class and demographic variation in the 1941 Indianapolis study, the most robust predictors of family planning behavior were associated with social class (Stycos, 1960). While limited to only white participants, Rainwater (1960) revealed that lower-class women and men had less control over their fertility and expected to have more children, despite desiring a similar or lower number than their counterparts of higher socioeconomic class. While Catholic women desired and expected to have more children than those who identified themselves as Protestant, they demonstrated a similar pattern of lower-income women having more children (Rainwater). Subsequently, Clark (1965) and Rainwater (1970) described how disparities in social power, oppression, cultural practices, and lack of resources contributed to higher fertility and unwed fertility among black ghetto dwellers in contrast to middle and upper class whites. Demographic researchers first included non-white participants in the 1960 Growth of American Families (GAF) study (Campbell & Mosher, 2000, Ryder & Westoff, 1971). The 1965 National Fertility Study (NFS) introduces several new elements to data collection and analysis, including the expansion of black participants, assessment of religious affiliation as a variable, reflected the introduction of the hormonal birth control

pill, and shifted analysis from total fertility to the specific pregnancy or birth (Campbell & Mosher, Ryder & Westoff). The NFS revealed expected and actual fertility to exceed desired fertility and pregnancies associated with being black vs white, lower education, marriage at an earlier age, lower versus higher family income, and whether women worked for family support or for other reasons (Ryder & Westoff). While the 1965 NFS revealed a continued pattern that Catholic women desired more children than Protestant women, the differential in these groups for both desired and actual fertility seen in the 1955 & 1960 GAF had narrowed by 1965 (Ryder & Westoff). Subsequent research has revealed a continued narrowing in fertility desires, actual fertility, and practice of contraception between Catholic, Protestant, and Jewish women, with strength of individual religious practices versus affiliation as the main distinguishing variable (Brown & Eisenberg, 1995; Kramer, Roland-Hogue, & Gaydos, 2007; Westoff & Ryder, 1977).

Using conventional NSFG measures, excluding miscarriages and adjusting for estimates of pregnancies that ended in abortion, approximately 57% of pregnancies were classified as unintended in 1987, with 8% unwanted, 20% mistimed, and 29% ending in abortion (Brown & Eisenberg, 1995). Based on data from the 1994 NSFG and similar adjustments, the unintended pregnancy percentage dropped to 49%, from 54 pregnancies per 1000 women to 45 per 1000, reflecting both reductions in rates of unplanned birth and rates of abortion (Henshaw, 1998). Based on state-based PRAMS data and abortion estimates for 2006, the median unintended pregnancy portions across 44 states was 53%, or 51 pregnancies per 1000 women, with state-by-state variation ranging from approximately 40 to 65 unintended pregnancies per 1000 women (Finer & Kost, 2011).

In Washington State, the percentage of pregnancies estimated as unintended was 55% in 1993-95, 52.8% in 1999-2001, and 50.8% in 2004-2006 (Cawthon et al., 2008; Ritualo, Cawthon, & Woodcox, 2004). Assessing pregnancy intention for pregnancies that ended in live births, excluding abortion estimates and miscarriages, NSFG data revealed 37.1% of pregnancies were unintended in the 2006-2010 wave of the NSFG, essentially unchanged from 1982 results (Mosher et al., 2012). Unintended pregnancy in the United States exceeds that of other developed nations (Brown & Eisenberg; Darroch, Frost, & Singh, 2001).

As previous researchers had suggested in their studies of fertility and excess fertility, studies in recent decades has revealed disparate distribution of unintended pregnancy among population subgroups, specifically, those with low income, lower education, non-white, at the extremes of reproductive years, and those never married or separated (Brown & Eisenberg, 1995; Finer & Henshaw, 2006; Foster, Bley, Mikanda, Indum, Arons, et al., 2004; Henshaw, 1998; Miller, Decker, McCauley, Tancredi, Levninson, et al. 2010; Mosher et al., 2012). Drawing upon 1988 and 1990 NSFG data, the Institute of Medicine noted the overall 44% of births from unintended pregnancy was disproportionately higher among those in poverty (59%) black women (62%), never married women (73%), and teenagers (86%) (Brown & Eisenberg, 1995). Noting the overall decrease in unintended pregnancy rate from 54 per 1000 women to 45 per 1000 between the 1987 and 1994 waves of the NSFG, Henshaw (1998) noted that while the majority of both intended and unintended pregnancies occurred among women aged 20 to 34, the highest portion of unintended pregnancies were among those under age 20 (75.0-82.7%), and those older than 40 (50.7%). By the 2001 wave of the NSFG the rate and

portion of unintended pregnancies remained substantively unchanged at 49% and the unintended rate among women under age 19 remained similar to 1994, the total number of pregnancies among teens, both intended and unintended fell by over 23% (Finer & Henshaw, 2006). By 2001 the percentage of unintended pregnancies among women 20-29 increased and decreased slightly among women over 40 (Finer & Henshaw). Between 2001 and 2006, the rate of total pregnancies and unintended pregnancies for teens 15-17 continued to decrease, where the unintended pregnancy rate for other age groups remained the same or increased (Finer & Zolna, 2011). Other initial findings from the 2006-2010 wave of the NSFG showed that 77% of births to women age 15-19 were unintended and that over half of total births were attributed to being mistimed by two years or more (Mosher et al., 2012).

Racial disparity in unwanted pregnancy and birth has been recognized since the fertility studies of the mid 1960s (Ryder & Westoff, 1971; Westoff & Ryder, 1977). From 1994 NSFG data, Henshaw (1998) calculated that the pregnancy rate for black women was 66% higher than white women, with the unintended rate being almost three times that of white women (98.9 per 1000, vs 35.5 per 1000), and the portion of pregnancies that ended in abortion nearly double that of white women. Patterns between white and black women closely paralleled income distribution (Henshaw). Women of Hispanic ethnicity had higher total pregnancy rates, both intended and unintended, but the percentage distribution of intended and unintended pregnancies and births was very similar to non-Hispanics (Henshaw). Increased rates of unintended pregnancy for Hispanic and particularly, black women continued with the 2001 wave of the NSFG and persisted when in comparisons of the groups above and below poverty, although higher

rates of unintended pregnancy was notably higher for Hispanic women below poverty while approaching the lower rate for whites for groups with incomes above poverty (Finer & Henshaw, 2006). In the 2006-2010 wave of the NSFG the overall rate of births from unintended pregnancy continued elevated for black and Hispanic women, with black women revealing a higher portion of mistimed births (Mosher et al., 2012). However, the portion of intended pregnancies among non-Hispanic white women increased significantly to 78%, widening the disparity between white women and their minority counterparts (Mosher et al.).

Poverty has a long association with excess fertility and unintended pregnancy (Clark, 1965; Rainwater, 1960, 1970; Ryder & Westoff, 1971; Stycos, 1960). Poverty has been identified as the major confounding variable in racial disparities in pregnancy rates and unintended pregnancy (Finer & Henshaw, 2006; Henshaw, 1998; Westoff & Ryder, 1977). In the 2001 NSFG, women with incomes below poverty demonstrated rates of unintended pregnancy almost four times that of women with incomes above 200% of poverty (112 per 1000 vs. 29 per 1000), reflecting a widening disparity between income levels from 1994 (Finer & Henshaw). Additionally, the rate of unintended births increased by 44% for poor women, where the rates declined among higher income women, partially attributed to a higher abortion rate among women with greater income (Finer & Henshaw). Between 2002 and 2006-2010 waves of the NSFG, these income disparities remained consistent, with births resulting from unintended pregnancy among women in poverty at 47% but only 18% among women with incomes at 300% of poverty or higher (Mosher et al., 2012).

Women with less than a high school diploma have both higher total birth rates and higher unintended pregnancy rates than women with more education, particularly compared to those who have attained a college degree (Finer & Henshaw, 2006; Mosher et al., 2012). Where 49-50% of unintended pregnancies in 1994 and 2001 were among women with less than a high school education, the unintended rates were similar for women with high school diplomas or some college, but declined to 26% for college graduates in 2001, a decrease from 33% unintended rate in 1994 (Finer & Henshaw). In both 1994 and 2001, women with some college demonstrated the highest rate for unintended pregnancies that ended in abortion. The differential between women with and without a college degree continued among women in the 2006-2010 NSFG survey who had given birth (Mosher et al.). In their analysis regarding the individual benefits and cost associated with the rising age in marriage seen since the mid 1990s, Hymowitz, Carroll, Wilcox, and Kaye (2013) observed that the delay in marriage frequently allowed more economically privileged women to attain higher level education and establish their career, but that less economically advantaged, or “flailing middle class” (p. 19) women were likely to have had a child out of wedlock and not achieve similar levels of education and income.

Marital and habitation status are the other major area of difference between groups with intended and unintended pregnancy. In 1994, the percentage of unintended pregnancies and births among currently married women were 30.7% and 21.8% respectively, where women who were never married or formerly married reported unintended pregnancy rates exceeding 62% and unintended births exceeding 36% (Henshaw, 1998). Percentages of pregnancies ending in abortion among never and

formerly married women exceeded 40% (Henshaw). Data from 2001 revealed similar characteristics but a slightly decreasing rate of unintended pregnancy among unmarried, never married, and formerly married groups. Cohabitation status among unmarried women, newly measured for 2001, revealed higher rates of both intended and unintended pregnancy among cohabitating women, but a higher percentage of pregnancies among non-cohabitating women considered unintended (76% vs. 70%) and those that ended in abortion (61% vs. 54%) (Finer & Henshaw, 2006). In the 2006-2010 wave of the NSFG, the portion of births from intended pregnancies among married women was 77%, where it was 49% for unmarried cohabitating women and 33% for unmarried and not cohabitating women (Mosher et al., 2012). Noting that the median age for a woman's first marriage has steadily increased since the early 1970s to approximately age 27 in 2011, Hymowitz and colleagues (2013) reported the median age for first birth crossed over the marriage trend line in the late 1980's with the 2011 median age for first birth at about 25.5 years.

Other group characteristics have been associated with unintended pregnancy. From 2006-2010 NSFG data, married women more commonly reported that their third or higher order birth was unintended (35%), including 17% unwanted versus 18% mistimed (Mosher et al. (2012). For unmarried women, both the first birth (62%) and third or higher order birth (57%) had higher than average unintended portions, where 39% of first births were reported as mistimed, and 35% of third and higher order births were reported as unwanted (Mosher et al.). Other groups that have been identified as having higher risk for unintended pregnancy include Medicaid women with a prior birth, rural-dwelling women, enlisted military women, undocumented migrants, and women who have

experienced intimate partner violence and/or partner coercion, with most of these groups sharing some demographic characteristics associated with a population at risk for unintended pregnancy (Cawthon et al., 2009; Custer, Waller, Vernon, & O'Rourke, 2008; Miller, Decker, McCauley, Tancredi, Levinson, et al., 2009; Noone & Young, 2009; Wolff, Epiney, Lourenco, Costanza, Delieurtraz-Marchand, et al., 2008). Beyond identified population characteristics, Finer and Kost (2011) analyzed geographic rates of unintended pregnancy in the United States, reporting state-by-state estimates for 2006. In general, they found unintended pregnancy rates at above 50 per 1000 women concentrated in southern states, plus Alaska & Hawaii, with rates below 50 per 1000 most common in states north of Oklahoma and west of the Great Lakes region (Finer & Kost). States with the highest rates of unintended pregnancy (63-69 per 1000 women) included Hawaii, California, Nevada, Mississippi, Florida, New York, Maryland, Delaware, and the District of Columbia (Finer & Kost).

Consequences of Unintended Pregnancy

A broad array of untoward consequences have been associated with unintended pregnancy and unwanted childbearing, including individual and societal economic costs, negative medical and health outcomes, poverty, disrupted goal attainment, and abortion (Brown & Eisenberg, 1995; Logan et al., 2007; Mosher et al., 2012). However, distinction of consequences associated with unintended pregnancy have a long history of being confounded by other variables, particularly the previously described measurement issues for intendedness, and mistimed versus unwanted pregnancy, plus the influence of disadvantaged socioeconomic status (Brown & Eisenberg; Logan et al.; Mosher et al.).

Economic Costs and Consequences: Public

Public economic costs of unintended pregnancy in the United States has been a longstanding concern (Brown & Eisenberg, 1995; Mosher et al., 2012). Among the first studies attempting to quantify costs, Trussell (2007) drew upon multiple data sets to estimate the direct medical expenditures associated with unintended pregnancy for 2002, as well as the savings associated with contraceptive use. He estimated almost five billion dollars was expended in direct medical costs for unintended pregnancies in 2002, with the largest portion (\$3.92 billion) for pregnancy and birth care (Trussell). Additionally, he estimated that approximately \$19 billion in direct cost savings could be attributed to contraceptive use (Trussell).

Given the disparate distribution of unintended pregnancies and births among low income women, public programs, particularly Medicaid, bear the majority of these costs (Mosher et al., 2012; Sonfield et al., 2011). Sonfield and colleagues conducted the first analysis of state-level data in order to estimate both national and state-by-state direct costs of publically-funded births that resulted from unintended pregnancy in 2006. Nationally, the researchers estimated that 64% of the 1.6 million births in 2006 from unintended pregnancy were funded by public insurance programs such as Medicaid, where 48% of overall births and 35% of births from intended pregnancies were publically funded (Sonfield et al.). At an average of cost of \$11,647 per publically funded birth, the national cost of unintended pregnancies was estimated at \$11.1 billion for 2006, and an average state expenditure for all women age 15-44 years was \$180, with a low of \$97 per woman in Oregon and \$476 per woman in Alaska (Sonfield et al.). Combined with the public expenditures to fund births from intended pregnancies, the estimate of total public

expenditures rose to \$21.8 billion (Sonfield et al.). For Washington State in 2006, the researchers reported that 47.2% of all births were publically funded with 65.1% of these from unintended pregnancies, resulting in \$253.9 million in total expenditure for births from unintended pregnancies at \$12,205 average cost per birth (Sonfield et al.). In ten southern states, plus the District of Columbia, over 70% of births from unintended pregnancy were funded through public programs, with the rates for Louisiana and Mississippi at 81% (Sonfield et al.). Representing one of the largest single expenditures for the Washington State Medicaid program, publically funded maternity care in the 2004-2006 biennium exceeded \$309 million per year, with over 49% of births attributed to unintended pregnancy, despite a trend of decline in births among women under age 20, abortion rates and unintended pregnancy (Cawthon et al., 2006; Cawthon et al., 2008).

While also a public expenditure, publically funded contraceptive services have been recognized as yielding a net savings for public programs, with three dollars in state and federal Medicaid costs for every dollar spent on public family planning programs (AGI, 2000). Specific to savings from unintended pregnancies, the estimated \$2.2 billion in 2010 U.S. public funding for contraceptive services averted \$12.7 in pregnancy and infant care, yielding a net savings of \$10.5 billion or \$5.68 for every dollar spent on contraceptive care (Frost, Zolna, & Frohwirth, 2013).

Economic Costs and Consequences: Individual and Family

Much of the research and literature regarding the economic, social, and health consequences has focused on pregnancy and childbearing in the early years of a woman's reproductive potential, specifically adolescence (Brown & Eisenberg, 1995; Hymowitz et al., 2013; Logan et al., 2007; Manlove, Terry-Humen, Papillo, Franzetta, Williams, &

Ryan, 2002). Other reviews of literature have revealed an absence of research examining the consequences of unintended childbearing specific to young adults (Logan et al.). Although the highest rates of unintended pregnancy have been found among women age 20 to 24, the highest percentages of unintended pregnancy and birth are reported for women under age 20, most due to being mistimed for two years or greater (Finer & Henshaw, 2006; Mosher et al., 2012). While strong and persistent associations have been revealed between unintended pregnancy and early childbearing with unfavorable economic and social outcomes, this has been confounded in determining causation, specifically whether early childbearing is the consequence of socioeconomic disadvantage, or poverty and social consequences are the result of early pregnancy childbearing (Brown & Eisenberg, 1995). Sentinel research by Rainwater (1960), Hoffman and Hoffman (1973), and Hoffman and Manis (1979), suggested that early, unplanned, and unwed childbearing may offer opportunity for goal attainment among disadvantaged women, where the availability of other goals may seem unattainable.

In their sentinel comprehensive review, the Institute of Medicine (IOM) articulated the associations between early childbearing and lower education attainment, single parenthood, larger families with associated cost demands, lower wages, and greater likelihood of living in poverty (Brown & Eisenberg, 1995). Women who began their childbearing under age 20 were three times more likely to have incomes below poverty at age 27 than those who delayed childbearing until after age 20, plus had significantly higher likelihood of welfare dependence for the first five years following birth (Brown & Eisenberg, 1995). While recognizing the complex interplay with preexisting socioeconomic disadvantage, researchers in the United Kingdom analyzed results of

representative national survey of 18,876 men and women, revealing that women who had children during their teens were more likely to have a greater number of children, have low educational attainment, be unemployed or in manual-labor employment, reside in subsidized housing as well as in more impoverished areas of the country (Wellings et al., 1999). While women who became mothers as teens demonstrated higher likelihood of having an abortion prior to age 24, they similarly discovered that young with higher education were more likely to have terminated a pregnancy (Wellings et al.).

Fergusson and colleagues (2007) analyzed data on life outcomes for 492 women in New Zealand who participated in a 25yr longitudinal study, comparing women who had no pregnancy prior to age 21, those who began childbearing under age 21, and women who had an abortion, including subsequent adjustment for family background and childhood behavioral characteristics. On educational and economic variables, women who had no pregnancy under age 21 or had elected abortion demonstrated greater likelihood to attend to graduate from a university, be employed full time, have higher mean income as young adults, and be much less likely to be welfare dependent (Fergusson et al.). After covariate adjustment, most of the differences diminished between women who had an abortion and those who began early childbearing, with the exception of educational attainment, and the women who ended a pregnancy with abortion demonstrated lower employment and higher welfare dependence more similar to those who began early childbearing (Fergusson et al.).

More recently, Hymowitz and colleagues (2013) studied the 40 year trend of rising marriage age in the United States and the impact on women, men, and families. Where the median age at first marriage for women in 1980 was 22, it has risen to 27 by

2011, with the median age of first birth crossing the marriage age line in 1989, with a greater portion of women in their twenties beginning childbearing before marriage (Hymowitz et al.). While the researchers did not study pregnancy intention, they revealed remarkable disparities among those who delayed marriage, with women who also delayed childbearing attaining higher education, income, and lower divorce rates after marriage (Hymowitz et al.). However, the women who began childbearing prior to marriage were more likely to have their education limited to high school or some college, experience family instability, and have lower personal income, reflecting a widening divide between those with economic privilege and the norm of the “large and already flailing middle class” (Hymowitz et al., p. 19). The researchers contended that the United States was at the verge of a new demographic reality where the majority of first births precede marriage and the economic reality of “...today’s unmarried twentysomething moms are the new teen mothers” (Hymowitz et al., p. 11). Similarly, early findings from the 2006-2010 wave of the NSFG have display persistent and widening disparities between rates of unintended pregnancy, particularly among those age 20 to 24, and those residing in groups representing racial and socioeconomic advantage or disadvantage (Mosher et al., 2012). Additionally, Finer & Zolna (2011) described women as unmarried but cohabitating in 2001 and 2006 as having the highest rates for both pregnancy and unintended pregnancy.

Health Outcomes: Risk Behaviors and Psychosocial

Similar to economic outcomes, health behaviors and outcomes associated with unintended pregnancy are confounded by socioeconomic disparity (Brown & Eisenberg, 1995). Various studies reviewed for the 1995 IOM report revealed strong associations

between behavioral risks and unwanted and mistimed pregnancies, specifically smoking and alcohol uses, with less clear evidence regarding the interface with illicit drug use, adequate weight gain, or use of prenatal vitamin supplements (Brown & Eisenberg). A subsequent review by Gipson, Koenig, & Hinden (2008) discovered some studies in developed countries with positive associations between unintended pregnancies and illicit drug use, alcohol use, cigarette smoking, and caffeine intake, but most research revealing mixed effects. Among the large representative studies they reviewed, most effects, with the occasional exception of maternal smoking, diminished or disappeared following controls for socioeconomic and other family background variables (Gipson et al.). More recent U.S. data from 26 regions participating in the representative Pregnancy Risk Assessment Monitoring System (PRAMS) for 2004 revealed that women who reported their pregnancies as unintended also reported higher prevalence of preconception and interconception (postpartum) health risks (D'Angelo, Williams, Morrow, Cox, Harris, et al., 2007). While not controlling for socioeconomic variables, preconception risk factors associated with unintended pregnancy included increased tobacco use, decreased multivitamin use, decreased use of dental care, decreased preconception health visits, increased prevalence of physical abuse, and increased pre-pregnancy stress, where postpartum factors included increased depression, increased low birthweight birth, increased preterm birth, and decreased check-up visits (D'Angelo et al.). Pre-pregnancy alcohol use was identical between intention groups and those reporting unintended pregnancy had almost twice the prevalence of participation in the Women, Infants, and Children (WIC) supplemental nutrition program, the latter suggesting that those with unintended pregnancy represented a greater concentration of lower-income women

(D'Angelo et al.). While not differentiated by pregnancy intention, Washington State women participating in Medicaid demonstrated higher prevalence of delayed or no prenatal care, maternal smoking, low birthweight delivery, and preterm birth when compared to non-Medicaid women (Cawthon et al., 2008). The partial exception was non-citizens who demonstrated the lowest rate of maternal smoking among all groups and had similar prevalence of low birthweight deliveries as non-Medicaid women (Cawthon et al.).

A 2003 study of 1,044 predominantly low-income (78% Medicaid) black women receiving prenatal clinic services in the District of Columbia, compared pregnancy intention and happiness toward pregnancy with several behavioral risk factors, finding significant positive associations and unfavorable odds ratios between unwanted pregnancy and both cigarette smoking and alcohol use (Blake, Kiely, Gard, El-Mohandes, & El-Khorazaty, 2007). When examining happiness toward the participants' current pregnancy, unhappy women demonstrated significantly higher odds of cigarette smoking, alcohol use, illicit drug use, being depressed, and having experienced intimate partner violence in the past year (OR 1.71-2.55) (Blake et al.). Interestingly, women who were unhappy had significantly lower odds for reporting environmental tobacco smoke exposure, all happiness groups reported some experience with partner sexual coercion in the past year, with unhappy women significantly higher, and only 32% of women unhappy about pregnancy reported using contraception at the time they became pregnant (Blake et al.). A 2008-2009 study of 1,278 women visiting family planning clinics in Northern California revealed unintended pregnancy as a outcome significantly associated with intimate partner violence (IPV), where 53% of participants reported physical or

sexual partner violence and there were increased odds of unintended pregnancy among women who reported experiencing IPV, reproductive control behaviors, pregnancy coercion, or birth control sabotage (Miller et al. 2010). A subsequent screening and counseling intervention study by the same research team achieved a 71% reduction in the odds of pregnancy coercion among participants at the intervention sites versus control sites (Miller, Decker, McCauley, Tancredi, Levnison, et al., 2011). While research is extremely limited, there has been a positive association identified between unintended pregnancy and subsequent child abuse (Gipson, Koenig, & Hindin, 2008; Logan et al., 2007).

Unintended pregnancies have been previously associated with disrupted marital and parental relationships, with marriages that begin after an unwanted pregnancy having demonstrated a higher rate of failure (Brown & Eisenberg, 1995). However, the body of research on parent outcomes and the structure and quality of parent relationships specifically associated with pregnancy intention is very limited (Logan et al., 2007). Delayed marriage and increasing cohabitation have been identified as trends in the United States in recent decades, and the NSFG began differentiating cohabitating, married, and single women in the 2002 wave as well as increasing inquiry about male partner intention in 2006-2010 wave (Finer & Henshaw, 2006; Finer & Zolna, 2011; Hymowitz et al., 2013; Mosher et al., 2012). For 2001 and 2006, Finer and Zolna reported cohabitating women as having over two times the percentage of unintended pregnancies as married women, plus the highest rates of both total and unintended pregnancy across living/marital status groups, plus the rate of unintended pregnancy among cohabitating women demonstrated greatest increase (20.6%) across groups, particularly concentrated

among those under age 25 and/or low-income. Contrasted to their married counterparts, cohabitation relationships have been found to be more unstable, conflicted, and short-lived, with three-times the likelihood of breaking up prior to their child's fifth birthday than married couples (Hymowitz et al.).

Exploring marital status, pregnancy planning, parenting satisfaction, and role overload, Lachance-Grzela and Bouchard (2009) surveyed 150 Canadian couples during the third trimester of their first pregnancy and at nine months postpartum. They found that cohabitating fathers experienced lower levels of parenting satisfaction and higher levels of role overload than their married counterparts when pregnancy was highly planned (planning was only reported by the woman), which the researchers attributed to less scripted role relationships among cohabitating couples and the challenge of navigating their parenting roles (Lachance-Grzela & Bouchard). While women's parenting satisfaction was not directly influenced by marital status, it was highly influenced their partners level of role overload as well as their own level of role overload (Lachance-Grzela & Bouchard).

Drawing upon data on 6061 live births from the 1988 National Maternal and Infant Health Survey, Swaminathan, Alexander, and Boulet (2006) examined the relationship between experiencing the delivery of a very low birthweight (VLBW) infant and the subsequent risk of divorce or separation in the first two years after delivery. Their analysis revealed that parents of VLBW infants had twice the odds of divorce or separation compared to when infants weighed 1500 grams or more and significantly lower levels of marriage stability when the pregnancy was not desired (Swaminathan et al.). Significantly higher odds of divorce or separation were revealed when the father had

not completed high school and when household income was 201-300% of poverty, with protective factors being pregnancy wantedness and longer per-existing duration of marriage (Swaminathan et al).

Health Outcomes: Maternal and Infant

As introduced by the 2004 PRAMS data reported in the previous section, unintended pregnancy has been associated with preterm delivery, low birthweight infants, and increased infant mortality, and that these associations have been both long-standing and challenged by the interface with socioeconomic status (Brown & Eisenberg, 1995; D'Angelo et al., 2007, Gipson et al., 2008; Logan et al., 2007). The IOM estimated that if all unwanted (vs. mistimed) pregnancies were prevented, there could be a seven percent decrease in the low birthweight rate among blacks and a four percent decrease among whites, substantially narrowing the racial disparity in this infant health outcome (Brown & Eisenberg, 1995). More recent reviews of literature have revealed that associations between pregnancy intention and birth outcomes substantially weaken or disappear when socioeconomic characteristics and adverse antenatal risk behaviors are controlled for (Gipson et al.; Logan et al.).

Among the more rigorous studies, Kost, Landry, and Darroch (1998) analyzed 9,122 births from the 1988 National Maternal and Infant Health Survey plus 2,548 births from the 1988 NSFG, finding increased odds that infant health would be compromised when the pregnancy was unwanted by the mother. After controlling for the mother's socioeconomic background characteristics as well as pregnancy-related behaviors such as prenatal care, adequate weight gain, alcohol use, and tobacco smoking, the association with prematurity, low birthweight, or small for gestational age births lost significance

(Kost, et al.). Of note, they found no adverse effect of alcohol use on these major infant health indicators at birth, but that smoking during pregnancy and failure to gain adequate weight during pregnancy were the most significant variables in infant outcomes (Kost, et al.). A study of 2,828 Missouri women who gave birth in 1989 through 1991 similarly revealed no significant associations between traditional measures of pregnancy intention and low birthweight after controlling for race and Medicaid status, but did reveal significantly elevated odds of low birthweight outcomes among women who exhibited denial during the early months of their pregnancy (Sable et al. 1997).

A more recent study by Afable-Munsuz and Braverman (2008) of 17,017 women who gave birth in California between 1999 and 2003 revealed a similar pattern of finding no significant association between pregnancy intention and preterm birth for white, black, or U.S. born Latina women after control for socioeconomic variables. However, the researchers revealed a significant association between preterm birth and pregnancy intention for immigrant Latinas, calling into question both the meaning of pregnancy intention measures to this population as well as adequacy of socioeconomic variables used for control (Afable-Munsuz & Braverman).

Access and entry to prenatal care has been a proxy measure for maternal infant health outcomes, with both inadequate prenatal care and delayed entry to prenatal care being associated with unintended pregnancy (Brown & Eisenberg, 1995; Gipson et al., 2008; Logan et al. 2007). Recent literature reviews have affirmed that most studies demonstrate a consistent association between unintended pregnancy and delayed prenatal care across diverse samples, but that associations between pregnancy intention and the number of prenatal visits were less robust (Gipson, et al.; Logan et al.). Kost et al (1998)

found no significant relationship between pregnancy intention and whether a woman received at least 90% of recommended prenatal visits, plus found no significant difference in infant health outcomes between women who made less than 90% of prenatal visits and those who made 90-120% of visits. However, women with greater than 120% of prenatal visits had greater odds of adverse birth outcomes (Kost). The interface between delayed prenatal access and Medicaid status may be a factor. Initial data from the 2006-2010 wave of the NSFG revealed that over twice as many women who reported their pregnancy as unintended had their first prenatal visit occur after the first trimester, but that those with unintended pregnancy were twice as likely to have had their delivery paid by Medicaid (Mosher et al. 2012). In Washington State, 45.4-50.3% of women who had a Medicaid-funded birth between 2001 and 2010 became eligible for Medicaid only because of their pregnancy status (Cawthon, 2011) Concerns about prenatal care access and obstetric provider supply have been identified in Washington State, with factors contributing to declined in first-trimester prenatal care for Medicaid women including provider supply and practice patterns, client awareness of pregnancy, need for prenatal care, and resource awareness, as well as system issues such as enrollment processes and managed care plan assignment (Cawthon, et al., 2008).

Breastfeeding has been associated with a broad range of health benefits for infants and women, but initiation and duration of breastfeeding has been linked to pregnancy intention, where women with unwanted pregnancies were less likely to breastfeed (Gipson et al. 2008, Logan et al. 2007; Mosher et al, 2012). In reviews of multiple studies conducted though the mid 2000s, crossing populations and methods, both Gipson et al. and Logan, et al. revealed strong associations between a pregnancy being unwanted

and being less likely to breastfeed, but the associations were mixed for mistimed pregnancies. Kost et al. (1998) found a difference in breastfeeding related only to unwanted pregnancies versus those that were mistimed, plus identified demographic characteristics that had strong association with not breastfeeding, including teens, black race, lower income, never-married women, women who worked during pregnancy, preterm and low birthweight infants, and women with one prior birth. In a study of pooled Demographic and Health Survey (DHS) data from 18 developing countries, Hromi-Fiedler and Perez-Escamilla (2006), revealed 10% less likelihood of breastfeeding when pregnancies were unintended. Initial data from the 2006-2010 wave of the NSFG, revealed that 25.9% of women with intended pregnancies did not breastfeed, compared to 39% among women with unintended pregnancies, with the 43.7% portion for those where pregnancies were unwanted or mistimed but greater than two years (Mosher et al.).

Health Outcomes: Pregnancy and Birth Spacing

For decades, timing and spacing of pregnancy have been integral to the concept of family planning and fertility, as well as the measurement and meaning of pregnancy intention (Campbell & Mosher, 2000; CDC, 1999; Santelli et al. 2003). Short interpregnancy intervals have been identified as among the strongest factors associated with adverse maternal and infant health outcomes (Conde-Agudelo, Rosas-Bermudez, & Kafury-Goeta, 2006). While a conceptual connection between unintended pregnancy and short interpregnancy interval would seem apparent, no research was discovered that studied or reported them in context. However, several studies focused on short interpregnancy intervals and adverse outcomes also described concurrent socio-demographic factors and behavioral characteristics that have been identified as

confounding variables in the measurement of pregnancy intention and adverse perinatal outcomes (Khoshnood, Lee, Wall, Hsieh, & Mittendorf, 1998; Rawlings, Rawlings, & Read, 1995; Rigsby, Macones, & Driscoll, 1998; Zhu, Rofls, Nangle, & Horan, 1999).

Rigsby and colleagues (1998) conducted a literature review regarding rapid repeat pregnancy among adolescents, revealing that predictors included younger age, low socioeconomic status, low education of the teen's mother, marriage, desired first pregnancy, and use of contraception other than Norplant. This was the only review that discussed pregnancy intention, although it emphasized repeat pregnancy verses birth interval, yet had the notable finding of identifying intended or desired pregnancy as the common predictor of repeat pregnancy (Rigsby et al.). In their study of 1,922 white and black women in military families, Rawlings et al. (1995) revealed that short interpregnancy intervals were more common among black than white women, that black women had twice the rate of premature or low birthweight infants and that an interpregnancy interval of nine months or less had significantly higher prevalence of adverse infant outcomes. For white women, elevated risk of adverse outcomes did not become significant until interpregnancy interval was less than three months, suggesting the role of race-based disparity or other confounders impacting the health of black women and their children (Rawlings et al.).

Zhu et al. (1999) analyzed birth certificate data from 173,205 singleton births in Utah from 1989 through 1996, controlling for 16 socio-demographic and behavioral risk factors, discovering significantly increased odds for low birthweight, preterm, and small for gestational age (SGA) outcomes when interpregnancy intervals were less than six months or greater than 120 months, with the lowest odds of adverse outcome with 18 to

23 month intervals. Khoshnood et al. (1998) analyzed National Center for Health Statistics data on 4.8 million births that occurred between 1988 and 1991, controlling for socio-demographic and behavioral variables, finding that while racial disparity existed in the frequency of short interpregnancy interval across groups, elevated risk of adverse outcomes existed for all groups when interpregnancy interval was less than six months. A study of 4,072 women in Taiwan with consecutive births from 1991 to 1997, found significantly increased odds of preterm birth when interpregnancy interval was less than 12 months and increased further if the index pregnancy was preterm (Hsieh et al. 2005). Additionally, the lowest risk of adverse outcomes existed for intervals between 18 to 48 months, with risk sharply increasing for intervals longer than 48 months (Hsieh et al. 2005).

Conde-Agudelo and colleagues (2006, 2007) conducted both comprehensive reviews of literature and meta-analysis of studies on birth spacing and maternal-infant outcomes. In their review of 22 studies, they found both short and long intervals associated with adverse maternal outcomes, with interpregnancy intervals beyond 5 years associated with increased risk of preeclampsia and labor dystocia, where short interpregnancy intervals were associated with increased risk of uterine rupture, particularly when the prior pregnancy was a cesarean delivery and uteroplacental bleeding disorders (Conde-Agudelo et al. 2007). In their meta-analysis of 67 studies, interpregnancy intervals of 18-23 months posed the lowest risk of adverse infant outcomes, with highest odd of preterm, low birthweight, and SGA outcomes when intervals were less than 6 months (OR 1.26-1.40), and significantly elevated risk for intervals 6-17 months as well as greater than 59 months (Conde-Agudelo et al. 2006).

More recently, Grisaru-Granovsky and colleagues (2009) studied 440,838 live births in Israel between 2001 and 2005, following a prior live birth that occurred between 1993 and 2005, comparing interpregnancy interval with preterm birth, very preterm birth, SGA, extreme SGA, early neonatal death, and congenital malformations. They discovered significantly increased odds for all adverse outcomes when interpregnancy interval was less than six months and significantly increased odds for SGA and extreme SGA outcomes when intervals were 6 to 11 months (Grisaru-Granovsky et al.). Additionally, increased odds for all adverse outcomes except early neonatal death and congenital malformation were revealed when interpregnancy intervals exceeded 60 months (Grisaru-Granovsky et al.). They found that most adverse outcomes were minimized when intervals were between 12 and 23 months (Grisaru-Granovsky et al.).

Health Outcomes: Abortion

Abortion, or termination of pregnancy, is one of the most direct consequences of unintended pregnancy and has represented one of the most contentious social and political issues in the United States and worldwide (Brown & Eisenberg, 1995; Jones & Kooistra, 2011; Singh, Wulf, Hussain, Bankole, & Sedgh, 2009). In recent decades approximately half of unintended pregnancies have been estimated as ending in abortion, although there has been a declining trend that appears to have recently flattened (Brown & Eisenberg; Finer & Henshaw, 2006; Finer & Zolna, 2011; Henshaw, 1998; Jones & Kooistra). The number of abortions peaked in the United States in 1990 at 1.61 million, subsequently declining 25% to 1.21 million by 2005, and remained at that level in 2008, albeit with a slight increase in rate from 19.4 per 1000 women to 19.6 (Jones & Kooistra). Throughout the 1980s, the percentage of unintended pregnancies that ended in

abortion were about 50%, increasing to 54% in 1994, then declining to 48% in 2001, and 43% for 2006 (Finer & Henshaw; Finer & Zolna; Henshaw; Jones & Kooistra). While the population adjusted rates for unintended pregnancy have varied, the portion of pregnancies measured as unintended has remained relatively constant since 1994 at 48 to 49% and the portion of births attributed to unintended pregnancies has remained relatively unchanged between 1982 and 2010 at approximately 37% (Finer & Henshaw; Finer & Zolna; Henshaw; Mosher et al., 2012). However, when calculated in the context of abortion, the birth rate attributed to unintended pregnancy climbed from 20 per 1000 women in 1994 to 25 per 1000 in 2006, counterbalancing the shift in portion of unintended pregnancies that ended in abortion (Finer & Henshaw; Finer & Zolna). Relying only on provider reports, Washington State has demonstrated a similar declining trend in abortion rates and total numbers, where there were 30,613 abortions in 1990 with a rate of 26.6 per 1000 women, this has progressively fallen to 20,048 (14.8 per 1000) in 2011 (Center for Health Statistics, 2012).

Not unlike measurement of pregnancy intention, the measurement of abortion and abortion as a percentage of unintended pregnancy has been challenging, primarily the result of abortion underreporting by participants in surveys such as the NSFG and by providers in states (Finer & Henshaw, 2006; Finer & Zolna, 2011; Henshaw, 1998; Hu, Darroch, Henshaw & Kolb, 1998; Jones & Kooistra, 2011, Santelli et al., 2009). Since the mid 1990s, researchers have combined multiple data sources, added separate surveys, and increased the breadth and nature of questions to progressively increase the sophistication of measurement, including abortions as a percentage of intended pregnancies (Finer & Henshaw; Finer & Zolna; Hu et al.; Henshaw; Jones & Kooistra;

Santelli et al.). Until the most recent estimates for 2001 and 2006, abortions were classified as unintended pregnancies in calculating portions and rates, although researchers recognized that up to eight percent of pregnancies ending in abortion began as intended pregnancies (Finer & Henshaw; Hu et al.; Henshaw; Santelli et al., 2003). In a 2002-2003 exploration of pregnancy intention among predominantly low-income, African-American women in New Orleans, 2.7% of women seeking abortion indicated that their pregnancy was intended using conventional measures, but 6.6% indicated that they had wanted to have a baby with their partner at the time they became pregnant when contextual dimensions were explored (Santelli et al., 2006).

While overall rates of abortion have declined, differences among demographic subgroups are pronounced, similar to trends and disparities in pregnancy and unintended pregnancy (Henshaw & Kost, 2008; Jones, Finer, & Singh, 2010). Much of the drop in rates of abortion between 1989 and 2004 has been due to a 31% change in abortion among women under 20 years old, plus smaller decreases among married women and non-Hispanic white women, where changes among black, Hispanic, other race, and unmarried women have shown less change, increasing the portion of abortions attributed to these groups (Henshaw & Kost; Jones et al.). With recent surveys differentiating groups of single women, the highest portion of women seeking abortion remained non-cohabitating single women, but cohabitating women demonstrated a relative abortion rate more than three times that of other women, reflecting the evolving demographic trend in marriage, increased unintended pregnancy as well as births due to unintended pregnancy in those cohabitating (Finer & Henshaw, 2006; Finer & Zolna, 2011; Jones et al.). About a third of abortions are obtained by women age 20-24, a portion that has remained steady

since the 1980s and represent the largest age cohort for abortion (Henshaw & Kost; Jones et al.). With the more pronounced decline in abortion among women under 20, those in older age groups have increasing portions of total abortions (Henshaw & Kost; Jones et al.).

Guttmacher Institute national surveys of abortion clients have collected additional data beyond that aggregated by the CDC from states, including income, education, union status, and religious affiliation, plus have been integral in assisting researchers to estimate abortion distribution and underreporting in the NSFG (Finer & Henshaw, 2006; Finer & Zolna, 2011; Henshaw, 1998; Jones et al., 2010). Between 2000 and 2008, the portion of women in poverty seeking abortion significantly increased from 27% to 42% where percentages for those with greater means declined, reflecting increasing disparity in contraceptive access, feeling financially unable to support a child (or additional child), or the initial impact of the economic recession that began in 2008 (Jones et al.). Women with some college had the highest portion of abortions (39.5%) and those with high school diploma or less represented another 40% in 2008, the portion of women with a baccalaureate college degree increase significantly between 2000 (16.4%) and 2008 (19.9%), likely reflecting the overall trend of increasing education among women (Jones et al.). Almost 61% of women obtaining abortions in 2000 and 2008 had at least one prior birth and approximately 34% had two or more (Jones et al.).

While abortion continues as one of the most controversial and divisive issues in modern society, it is among the most common and safest medical procedures for women in countries where it is both legal and integrated into health care delivery (Brown & Eisenberg, 1995; Fathalla, 1992; Henshaw & Kost, 2008; Santelli et al., 2006; Sedgh,

Henshaw, Singh, Ahman, & Shah, 2007; Singh et al., 2009). Rates of abortion have declined worldwide, predominantly in developed countries where it is broadly legal and safe (Sedgh et al.; Singh et al.). Concerns about long term health and psychosocial consequences have not been supported by research, where favorable outcomes associated with achievement of life goals have (Brown & Eisenberg, Fergusson, et al., 2007; Henshaw & Kost; Singh et al.). Concentrated in countries where abortion or follow-up care is not legally accessible or safely provided, up to 70,000 annual deaths occur worldwide related to abortion (Singh et al.). Abortion is broadly considered a unfavorable and undesired outcome to unwanted pregnancy and reduction in unintended pregnancy is considered integral to reducing the demand and incidence of abortion (Brown & Eisenberg, Fathalla; Frost et al., 2013; Henshaw & Kost; Jones & Kooistra, 2011; Singh et al.; Singh, Darroch, et al. 2009).

Contraception

Although the advent of modern contraceptive methods has been attributed to heralding a revolution in modern society, attempts to limit fertility have existed for centuries, dating back to the beginning of written records, with the discovery of a circa 1850 BC Egyptian Petre Papyrus describing strategies to prevent pregnancy (Benagiano et al., 2006; Diczfalusy, 2000, 2002). Anthropologic study of primates in the latter half of the 20th century documented the evolving role of sex in species as extending beyond reproductive purposes - for both exchange and communication functions - and suggested that sex began to lose its exclusive reproductive meaning early in evolution of the human species (Benagiano et al). Non-reproductive sexual activity, plus biological

changes that made fertile and non-fertile periods less distinguishable for both women and partners, created a new necessity for avoiding conception (Benagiano et al.).

Women in more developed societies had begun reducing their fertility well before the advent of hormonal contraception (United Nations, 2009). The U.S. birth cohort of 1901-1910 was first generation of (white) women to decrease their lifetime fertility, with 42% having fewer than 2 children, attributed to increased use of available contraceptive, contraceptive sterilization, and clandestine abortion (Dawson et al, 1980). By the 1930's there was concern that United States would experience a population decline similar to that being seen in Europe (Campbell & Mosher, 2000). By 1933, U.S. average family size was 2.3 children, a decline from 7.0 in 1800 & 3.5 in 1900 (CDC, 1999). Racial differences in fertility were increasingly recognized, but almost all measurement was limited to white, married women (Campbell & Mosher).

In 1955, Gregory Pincus presented to the 5th International Planned Parenthood Conference in Tokyo that ovulation in women could be inhibited by the oral administration of progestin (Diczfalusy 2000). As previously described, Pincus and Massachusetts obstetrician John Rock were instrumental in the development and approval of the first hormonal contraceptive pill, Enovid (Diczfalusy; Reed, 1978; Tome; 2001). Enovid was approved by FDA in 1957 for menstrual regulation - followed by rapid increase of women diagnosed with "menstrual difficulties" - and subsequently approved by the FDA for contraceptive purposes in 1959, heralding what is commonly described as the beginning of the *contraceptive revolution* (Benagiano et al, 2006, 2007; Diczfalusy; PBS, 2003; Tome).

The advent of hormonal contraception, the IUD, and the products that followed afforded women control over fertility beyond any prior time in history, changing role relationships, expanding independent economic opportunities, and health improvements for women and children (Benagiano et al, 2007; Dixon-Mueller,1993). Concurrently, this heralded a progressive shift in responsibility to women from men for contraception, including its benefits, burden, and risks (Boonstra et al. 2000; Dixon Mueller; Lane, 1994; Olsen, 2007).

Contraceptive Efficacy

Modern contraceptive methods are highly effective when used correctly and consistently (Gold et al., 2009; Trussell, 2004, 2009, 2011). From 2006-2010 NSFG data, there are approximately 62 million United States women in their childbearing years, age 15-44, and about 43 million (70%) of them are sexually active and do not want to become pregnant, placing them at risk for unintended pregnancy (Jones, Mosher, & Daniels, 2012; Mosher & Jones, 2010). In recent years, the 65% of women who reported consistent use of contraception (including sterilization) accounted for only 5% of unintended pregnancies, where the 19% of women with inconsistent use accounted for 44% of unintended pregnancies and where non-users (16%) experienced 52% of unintended pregnancies (Gold et al.; Frost, Singh, & Finer, 2007). Over the course of a year, sexually active women and couples who do not use contraception have about an 85% chance of becoming pregnant (Trussell, 2004, 2009, 2011). For a woman who desires only two children, she must practice some form of contraception for about three decades of her life (AGI, 2000).

Almost all methods of contraception, except the contraceptive sponge and spermicide-only strategies, have one-year efficacy rates over 90% when used perfectly (Trussell, 2011). However, most methods that rely on the users have much lower rates of efficacy in typical use when compared to perfect use, typically mediated by how forgiving the method is of less than perfect use, how complex the method is for users to implement perfectly, and the fertility of the user (Trussell, 2004, 2009, 2011). Trussell noted that *typical use* is a very elastic concept and very dependent on a woman's perception of her use in response to questions in NSFG and other clinical studies.

Methods with very high inherent efficacy and low user requirements, including female sterilization, male sterilization, hormonal implant (Implanon), and intrauterine contraception (IUD, copper-T, Mirena), demonstrate both perfect use and typical use efficacy in excess of 99% (Trussell). Other hormonal methods of contraception, including birth control pills, patch (Evra), vaginal ring (NuvaRing), and injection (Depo-Provera), demonstrate perfect use efficacy greater than 99.5%, but typical use efficacy falls to 94% for injection and 91% for pills, vaginal ring, and the patch (Trussell, 2011). While most non-hormonal methods have demonstrated perfect use efficacy at 94% or greater, these are the methods least forgiving of imperfect use, with typical use efficacy for the diaphragm at 88%, sponge (nulliparous women only) at 88%, male condoms at 82%, female condom at 79%, withdrawal at 78%, and fertility awareness methods at 76%. Previously mentioned, spermicide-only methods and the contraceptive sponge for parous women have perfect use efficacy around 80% and typical use efficacy between 72% and 76% (Trussell). While offering the most widely accepted estimates of contraceptive effectiveness, Trussell conceded that they are the result of variable and

interpolated data, and that a multitude of variables are involved in the actual effectiveness for any particular woman or couple.

Other contraceptive strategies include the lactational amenorrhea method (LAM) (breastfeeding), and emergency contraception (Trussell, 2004, 2009, 2011). Providing approximately 98% protection from pregnancy in the initial six months following birth, LAM is considered highly effective, but is contingent on exclusive direct breastfeeding and the absence of any postpartum menses (Trussell, 2004, 2009, 2011). This method requires that any supplementation or pumped breast milk be minimized and the initiation of another form of contraception upon resumption of first menses (Trussell, 2004, 2009, 2011). Progestin-only emergency contraceptive pills can reduce the risk of pregnancy up to 75% when unprotected intercourse occurs during the second or third week of a woman's menstrual cycle, but the conditions and outcomes of studies underlying effectiveness estimates vary widely (Trussell, 2004, 2009; Trussell & Portman, 2013). When used as post-coital emergency contraception, insertion of the copper-T IUD has demonstrated greater than 99% reduction in pregnancy risk and offers up to 10 years of highly effective contraception (Trussell, 2004, 2009). Between 2002 and 2006-2010, the number of women reporting that they had ever used emergency contraception rose from 4.2 to 10.8% (Daniels, Mosher, & Jones, 2013). Simultaneous use of more than one method can remarkably decrease likelihood of pregnancy (Trussell, 2009). Combined perfect use of condoms and spermicides can decrease the one-year pregnancy risk to approximately 0.2%, similar to that for perfect use of the birth control pill, patch, or vaginal ring (Trussell, 2009). About 8% of women report dual method use, with the condom as the most commonly used second method, but 10% of all women use male condom as a

primary method and almost 14% report *any use* of condom, suggesting a less effective method, such as withdrawal, may be the backup method for many women when condom is unavailable (Mosher & Jones).

Contraceptive Use

In the first decade of the 21st century, 99% of all women age 15-44 who have ever had sexual intercourse, have reported using at least one contraceptive method, and almost 62% of all reproductive age women report current use of contraception (Jones et al, 2012; Mosher & Jones, 2010). Among the 38% of women who reported that they were not using contraception in the 2006-2010 NSFG, 19% indicated that they had never had sex or had not had sex in the past three months, 9% reported that they were either pregnant, immediately postpartum, or seeking pregnancy and 10% indicated that they were either infertile (2%) or had intercourse without contraception (8%) (Jones, et al.). When analysis was restricted to women at risk for unintended pregnancy by excluding women who were pregnancy or seeking pregnancy, abstinent, or sterile for non-contraceptive reasons, 89% of women reported use of contraception (including sterilization) and 11% used no method in the three month preceding the NSFG interview, essentially unchanged from 2002 but an increase from 7.5% non-users in 1995 (AGI, 2000; Jones et al.; Mosher & Jones; Trussell, 2008).

Among women who practice contraception, 63.4% practice some type of reversible method, with 26.6% relying on female sterilization and 10% male sterilization (Jones et al, 2012). The birth control pill is the most commonly used method (27.5%) with other hormonal methods used by 7.2% of women (Jones et al.). The pill is used the most by white women, never-married women, cohabitating women, childless women,

women under 30, and college graduates (Jones et al.). About 82% of all women who have ever had sex used the birth control pill at some time in their life (Daniels et al., 2013).

The development of other hormonal methods in the last two decades have resulted in a modest overall increase in the portion of those methods to 7.2% in 2006-2010 from 4.3% in 1995, with women who have ever used hormone injection rising from 4.5% to 23.2%, plus the ever use of the patch or vaginal ring being 10.4% and 6.3% respectively, the later methods being unavailable in 1995 (Daniels et al.; Jones et al). Sterilization is most commonly used by women and men over age 30, increasing with age (Jones et al.).

Where 30% of women and 9.5% of men age 30-34 reported sterilization, this increased to 50.6% and 20% among 40 to 44 year olds (Jones et al.). While interuterine contraception use was reported by 7% of contracepting women in 1982, usage fell to less than 1% of women in 1995, but rebounded to 5.6% usage by 2006-2010 (Jones at al; Mosher & Jones). The condom is most frequently reported as the primary method among women 15 to 24 years at 29.4% and at 36.2% for women 15 to19 years (Jones et al). Where the diaphragm was used by 8.1% of all contracepting women in 1982, usage had declined to 1.9% by 1995 and has essentially disappeared from use by 2006-2008 (Mosher & Jones). Natural family planning and variations were reported as the primary method by 1.2% of women in 2006-2010, declining from 2.3% in 1995 and 3.9% in 1982 (Jones et al,; Mosher & Jones). Withdrawal was listed as the primary contraceptive method by 2% of women in 1982, but steadily increased in portion to 5.2% by 2006-2008 and those who ever used withdrawal as a method increased from 25% to 60% over that time span (Daniels et al.; Mosher & Jones).

The initiation federal family planning support through Title X of the United States Public Health Service Act in 1970 and subsequent establishment of a wide network of family planning clinics had substantially diminished racial and income disparities in access to family planning services by the year 2000 (AGI, 2000). Coupled with state-based expansions to Medicaid programs since the mid 1990s, access to family planning services continued to expand, but other socio-political and service delivery issues have posed other ongoing challenges (AGI; Gold et al. 2009). The most common pattern of contraceptive practice demonstrated by users in the United States is to use male condoms at first intercourse, the birth control pill to delay the first birth and sterilization when the desired number of children is achieved (Mosher & Jones, 2010). While there are similar portions of women who have ever used any method of contraception across race/ethnicity, education, and age groups, substantial variation exists in the type of methods used (Daniels et al., 2013).

Accounting for the introduction of new methods, other age-based patterns have remained similar since 1995, while teenagers (15-19) have demonstrated a 45% decline in the use of condoms as the most effective method used, countered with a 20% increase in use of birth control pills (to 53.2%), and a 22% increase in other hormonal methods (to 16.1%), as well as 16% use of dual methods (Jones et al., 2012; Martinez, Copen, & Abma, 2011). These changes have been credited as contributing to the significant decline in teen birth rates seen since the early 1990s (Hamilton & Ventura, 2012; Martinez et al.). However, racial differences in patterns of use exist among teens and young women (15 to 24 years) that suggests disparity for unintended pregnancy (Jones et al.). Where 73% of white women use more effective reversible methods and 20% rely on their partner's use

of condoms as primary contraception, 52% of non-Hispanic black women use more effective methods and 38% rely on condom use (Jones et al).

Hispanic, black, and Asian women demonstrate lower rates for ever using birth control pills or most other hormonal methods in comparison to non-Hispanic white women, although black women were three times as likely as white women to use contraceptive injection as a strategy (Mosher & Jones, 2010). Additionally, foreign-born Hispanic women are three times more likely to have used the IUD compared to other groups (Daniels et al., 2013). While rates across race/ethnicity groups for sterilization was 23% for each, Hispanic and non-Hispanic black women had higher rates for female sterilization than white women, where male sterilization was much more common for white couples (Mosher & Jones). Among women at risk for unintended pregnancy, 16% of non-Hispanic black women reported no birth control use, where the rate of non-use was 9% for Hispanic, white, and Asian women (Mosher & Jones.)

In 2006-2008, female sterilization was used by 55% of contraceptive users age 22 to 44 years without a high school diploma, where only 16% of those with a college degree reported that method and had higher reliance on the contraceptive pill (35%) and condom (20%) (Mosher & Jones, 2010). History of ever using injectable contraception was three times more common among women without a high-school diploma or GED compared to those with a bachelor's degree (Daniels et al., 2013).

Ever use of contraception was about 99% across all religious groups in 2006-2010, and ever use of a more-effective, reversible method ranges was reported by 84% of Catholics, 91% of Baptist and fundamentalist Protestants, 90% of other Protestants, and 87% of women who reported no religious affiliation (Daniels et al., 2013). Ever use of

periodic abstinence strategies such as natural family planning was more commonly reported by Catholic women (22% use), although there was no difference between religious affiliations or reported importance of religion when identified as the primary birth control method (Daniels et al.; Jones et al., 2012). Catholic women (18%) and those with no religious affiliation (16%) reported higher reliance on male condom use as the primary contraceptive method (Jones et al.). The portion of women using female sterilization increases with the strength of importance of religion for them, from 12% among women where religion is not important to 32% for those who reported religion as very important (Jones et al.). A similar pattern was reported for male sterilization, although those affiliated with other protestant denominations have a higher frequency (13%) than Catholics, women with no religious affiliation, Baptist, or fundamentalist Protestant (8-9%) (Jones et al.). Other studies have found no significant difference between religious affiliation and non-contracepting behavior, with the exception of elevated odds of contraceptive non-use among Catholic teens (Kramer et al, 2007).

Between 1995 and 2006-2010 waves of the NSFG, the percentage of unmarried cohabitating women age 15-44 who used contraception increased from 8.4% to 13.1% where portion of married women decreased from 58% to 51% and the portion of formerly and never married, non-cohabitating women remained similar between periods (Jones et al., 2012). Where 7.5 % of married women at risk for unintended pregnancy did not use a contraceptive method in 2006-2010, that rose to 9.8% for cohabitators (Jones et al). Compared to their contracepting married counterparts, cohabitators were more likely to report use of the birth control pill (33.2% vs. 18.6%) and other hormonal method (10.1% vs. 3.9%), slightly lower usage of IUD (5.9% vs. 7.1%) and lower rates of both male and

female sterilization (Jones et al.). The average age of cohabitators was 29 years compared to 34 years for those currently married, plus 35% of cohabitators reported no prior childbearing compared to 19% of married couples and 81% of never married women (Mosher & Jones). Researchers have identified increase in non-married cohabitation as a broader societal trend in the United States and that this group is characterized by the highest, and increasing, unintended pregnancy rate among different relationship groups as well as the highest unintended birth rate (Hymowitz et al., 2013; Finer & Zolna, 2011).

For 2006-2010, women at risk for unintended pregnancy who had one prior birth reported the highest percentage (16.7%) for not using any birth control method, followed by women with no prior births (14%), where women with two or more prior births reported 7.1% nonuse (Jones et al.). Among contracepting women, reported use of the pill, condom, and other hormonal methods declined as parity increased and women with two or more births reported the highest rates of female (46.6%) and male (14.9%) sterilization as well as periodic abstinence methods (1.6%) (Jones et al.; Mosher & Jones). Women with one prior birth reported the highest use IUD (10.1%) and “other” methods, including withdrawal, spermicides, diaphragm, and cap (9.5%) (Jones et al.). Women who reported that they intended to have more children reported higher portions of contraception non-use (14.6%) compared to those who intended no more (8.6%) and reported higher rates of use of all contraceptive strategies except for sterilization and periodic abstinence strategies (Jones et al.).

Contraceptive Failure

In 2002, 52% of unintended pregnancies were attributed to women at risk who either did not use contraception at all (6%) or women who had gaps in contraception use

of one month or more during the year (10%) (Frost, Singh, & Finer, 2007a; Gold et al. 2009). However, 48% of unintended pregnancies were attributed to women who reported use of contraception in the month they became pregnant, the conventional definition of *contraceptive failure* (Finer & Henshaw, 2006; Gold et al.; Kost et al., 2008; Trussell & Vaughan, 1999). The majority (43%) of unintended pregnancies due to contraceptive failure have been attributed to inconsistent or incorrect use of the reported method(s) (Finer & Henshaw; Gold et al., Kost et al., Trussell, 2011).

Discontinuance of contraception, gaps in use while at risk, delays in resumption of a method, and abandonment of contraception have been particular concerns to researchers, with method dissatisfaction and barriers to access being common variables (Daniels et al., 2013; Frost et al. 2007a, 2007b; Fu, Darroch, Haas, & Ranjit, 1999; Kost et al. 2008; Mosher & Jones, 2010; Ranjit et al., 2001; Trussell, 2004, 2008, 2011; Trussell & Vaughan, 1999; Wu, Meldrum, Dozier, Stanwood, & Fiscella, 2008). Initial tabulations from the 2006-2010 wave of the NSFG of reasons for stopping use of birth control pills, contraceptive patch, or contraceptive injection most frequently related to side effects (45% patch, 63% pill, 74% injection) or worry about side effects (6%-12%), did not like changes to the menstrual cycle (9%-31%), having become pregnant while using the method (4%-11%), or it was too difficult to use (10-11%, pill and patch only, not injection) (Daniels et al, 2013; Mosher & Jones, 2010). Discontinuance of the birth control pill due to side effects, worry about side effects or changes to menstrual cycle were similarly distributed across Hispanic, white and black races, except Hispanics reported greater worry about side effects (Mosher & Jones). Expense, insurance non-coverage, and difficulty obtaining the method were reported as reasons by 3.4% or less of

all users stopping one of these three hormonal methods (Daniels et al.; Moser & Jones). Most common reasons for stopping condom use included decrease of sexual pleasure (43%), partner did not like it (41%), worry it would not work (17%), and being too messy (10%) (Daniels et al).

In the 2006-2010 NSFG, women who reported an unintended pregnancy in the prior 3-4 years were asked if they had used contraception at the time they became pregnant and, if not, asked to choose among a list of reasons why they had not used birth control (Mosher & Jones, 2010). For the 2006-2008 data period the most common reason selected by women was that they “did not think you could get pregnant” (43.9%), followed by “didn’t really mind if you got pregnant” (22.8%), “worried about side effects of birth control” (16.2%), “did not expect to have sex” (14.1%), “male partner didn’t want to use birth control” (9.6%), and “male partner did not want you to use birth control” (7.3%) (Mosher & Jones, p.14). In an analysis of 2002 NSFG data, Wu et al. (2008) revealed increased odds of contraceptive nonuse among women who were over 40 years old (OR 6.3), black (OR 1.8), less than high school education (OR 2.4), uninsured (OR 1.6), Medicaid enrollees (OR 1.9), or had infrequent intercourse (OR 3.8). They found no significant association between contraceptive behavior and future pregnancy intention (Wu et al). Frost and colleagues (2007b) conducted telephone interviews of 1,978 women at risk for unintended pregnancy in 2004, revealing similar results regarding these groups, but also found greater odds of contraceptive nonuse among women who expressed ambivalence toward pregnancy (OR 2.42), not being in a current relationship (OR 2.38), dissatisfaction with her contraceptive method (OR 3.42 - 6.81),

and believing that contraceptive health care providers were not available to answer method-related questions (OR 3.07).

Drawing upon national PRAMS data from 2000-2002, Nettleman and colleagues (2007) revealed patterns for contraceptive nonuse similar to the previously described studies, particularly the perception by women that they could not become pregnant at the time of intercourse and/or the perception that they or their partner were sterile, despite the occurrence of pregnancy. Analysis of free-text “other” responses to reasons for unprotected intercourse included “lack of thought or preparation” (34%) and perceiving that she was at low risk for pregnancy (18%), with the highest portion of these including responses about breastfeeding (Nettleman et al). Additional quantitative and qualitative studies and reviews have revealed similar patterns associated with nonuse or discontinuance of contraception among at-risk women (Ayoola, Nettleman, & Brewer, 2007; Foster et al. 2004; Huber et al., 2006; Nettleman, Brewer, & Ayoola, 2007; Noone, 2004; Vaughan et al., 2008;)

Unintended pregnancy relating to contraceptive failure has been closely linked to inconsistent or incorrect use and has multidimensional characteristics that remain elusive to those interested in reducing unwanted pregnancies (Gold et al., 2009, Kaye, Suellentrop, & Sloup, 2009; Kost et al., 2008; Santelli et al., 2003; Trussell & Wynn, 2008). Several were introduced in the prior sections related to contraceptive nonuse and discontinuance. Using 2002 NSFG data, Kost and colleagues (2008) estimated that about one in every eight uses of a reversible method (12.4%) resulted in a contraceptive failure during the first year of use, about a 20% reduction from 14.9% in 1995. These failure rates reflect the discrepancy between perfect use of methods and the variance associated

with typical use (Kost et al.; Trussell, 2011). In their analysis, method-related probabilities of failure for fertility awareness methods were 25%, followed by withdrawal (18%), male condoms (17%), birth control pills (9%), and injection (7%) (Kost et al.). Compared to 1995 NSFG data, probability of contraceptive failure increased 1.3% for injectable users, 2.7% among fertility awareness users, and decreased 10% for those using withdrawal, while remaining essentially the same for the condom and pill (Kost et al.). While the likelihood of method failure increased with duration the method was in use, prior analysis of 1988 and 1995 NSFG data revealed that overall rates of method failure decreased from 13% to 8% from the first to the second year using the same method (Kost et al.; Ranjit et al., 2001).

Similar to the demographic characteristics for contraceptive use, discontinuance, and nonuse reported from initial tabulations of the 2006-2010 NSFG, Kost and colleagues (2008) found socioeconomic factors to be a significant influence in the differential risk for method failure (Daniels et al., 2013; Jones et al., 2012; Kost et al., 2008; Mosher & Jones, 2010). They found that women under 30 years, black women, women with a prior birth, women who desired more children, cohabitating women, and low-income women demonstrated higher risk for contraceptive failure (Kost et al.) Considering both method type and demographic variables, women below 200% of poverty who relied on partner-dependent methods (condom, withdrawal) had almost twice the likelihood of contraceptive failure, although low income pill users experienced contraceptive failure at rates similar to higher income women (Kost et al.). While black women were who relied on male condom use were more likely to experience method failure, race or ethnicity were not associated with failure rates for the pill or withdrawal

(Kost et al.). Married women demonstrated lowest risk of failure for the birth control pill, where cohabitating women had the highest risk, followed by unmarried, non-cohabitating women (Kost, et al). For failure of condom as a method, only cohabitating women demonstrated higher relative risk among union groups (Kost at al). Both cohabitators and other non-married women demonstrated significantly higher failure risks when withdrawal was used as their primary method when compared to married women (Kost et al). For these comparisons between different union status groups, Kost and colleagues suggest that method effectiveness may be dependent on the relationship between the woman and her sexual partners, their capacity to mutually negotiate contraception, and childbearing intentions as well as the frequency of intercourse. These findings are supported by subsequent research that describes the demographic shifts of increasing cohabitation, delayed marriage, related economic disparity, lack of accurate method awareness, and inconsistent practice of contraception (Hymowitz et al. 2013; Kaye et al., 2009).

In their 2004 telephone survey of 1,978 non-sterilized women at risk for unintended pregnancy, Frost and colleagues (2007a) studies patterns of contraceptive use, focusing on gaps and switches in method use. While 38% of women reported using the same method for an entire year and 24% of women switched methods without gap, 8% reported no contraceptive use, and 15% had gaps of 1 to 11 months while at risk (Frost et al.). The distribution of contraceptive methods, excluding sterilization, was similar to that described in the NSFG (Frost et al.). While 15% of the total sample experienced a gap in method use while not at risk (pregnant or not sexually active), 40% of those that experienced a gap while at risk reported method-related reasons, including problems or

side effect using the method (17%), not liking any method (5%), difficulty paying for the method (5%), and lack of time to obtain the method (5%). Additional reasons for reporting gaps included periods of infrequent sexual activity (19%), ambivalence toward pregnancy (18%) (Frost et al). More than half of women who experienced at-risk gaps in method use also reported concurrent life events, including beginning or ending a relationship, moving, ending or starting a new job, or experiencing a personal crisis (Frost et al.). Among women who had an at-risk gap in contraceptive method, only 12% switched to a more effective method, compared to 25% for those who had a gap while not at risk (Frost et al.).

Frost and colleagues (2007a, 2007b) identified several provider-related recommendations from their results, including assisting women to find acceptable and appropriate methods for their needs, implementing strategies to improve access for primary and backup methods, proactively implementing strategies to address side effects, questions and effective use, and identifying at-risk periods associated with life events. These recommendations are consistent with the findings and provider-focused and system-focused recommendations of other researchers and clinicians toward improving contraceptive access, effective usage, satisfaction, and reduction of unintended pregnancy (Bianchi-Demicheli et al. 2003; Boonstra et al. 2000; Eisenberg et al, 2012; Espey et al., 2007; Ferreira et al. 2009; Gold et al. 2009; Homco, Peipert, Secura, Lewis, & Allsworth, 2009; Kaye et al. 2009; Landry, Wei, & Frost, 2007; Leeman, 2007; Miller, Jordan, Levenson, & Silverman, 2010; Miller et al. 2011; Olsen, 2007; Noone, 2004; Noone, 2007; Noone & Young, 2009; Ott et al, 2010; Rasch, 2002; Rasch et al. 2007; Speizer, 2006).

Other researchers have examined additional contributors to contraceptive failure. Exploratory studies have investigated the efficacy of hormonal contraception among obese women, concerned that biologic effectiveness may be diminished in the presences of obesity, but findings remain inconclusive (Brunner & Hogue, 2005; Brunner-Huber & Hogue, 2005; Brunner-Huber & Toth, 2007; Kaneshiro, Edelman, Carlson, Nichols, & Jensen, 2008). Expanding the dimensions of relationship context surrounding contraceptive failure, researchers are beginning to reveal that intimate partner violence, pregnancy coercion, and birth control sabotage may be common and an under-recognized contributor to unprotected intercourse, contraceptive failure, and unwanted pregnancy (Fondenot & Fantasia, 2011; Gao, Patterson, Carter, & Lustini, 2008; Miller, et al. 2010; Miller et al. 2011; Nettleman et al. 2007; Rickert, Sanghvi, & Wieman, 2002; Williams, Brett, & Abma, 2009). Relatively recent research has explored the relationship between sexual arousal, risk-taking, and inconsistent use of contraception (Higgins, Hirsch, & Trussell, 2008; Higgins, Tanner, & Janssen, 2009). In their qualitative work, Higgins and colleagues (2008) revealed categories of pleasure associated with pregnancy ambivalence and nonuse or ineffective use of contraception, including active eroticization of pregnancy risk, passive romanticization of pregnancy, and escapist pleasure of what a pregnancy might bring. In a subsequent internet-based study of 5,609 men and women revealed that both men and women agreed use of condoms and other safe-sex practices led to loss of sexual arousal and that the romanticized risk of unintended pregnancy led to greater odds of engaging in unprotected sex for women than for men (Higgins et al., 2009).

Pregnancy Intention and Ambivalence

Previously introduced in review the of measurement as well as contraceptive use, decision making, and intention surrounding pregnancy and childbearing has become recognized as a complex and multidimensional phenomenon, challenging researchers, clinicians, and policy-makers interested in decreasing unwanted fertility (Bachrach & Newcomer, 1999; Brown & Eisenberg, 1995; Kaye et al., 2009; Luker, 1999; Sable, 1999; Santelli et al. 2003, 2009; Trussell et al., 1999; Zabin, 1999). In his sentinel work with lower-income white families and their childbearing patterns, Rainwater (1960) observed that the poor were particularly vulnerable to unplanned and unwanted pregnancy, but expecting to have more children than they wanted. This variance associated with socioeconomic status was seen by other social and fertility researchers of the decade and persists to the present time (Clark, 1965; Mosher et al., 2012; Rainwater, 1970; Ryder & Westoff, 1965; Westoff & Ryder; 1977; Westoff & Westoff, 1971). Rainwater (1960) contended that the concept of family planning posed a paradox, describing the inherently artificial nature of family planning and that it could be perceived as contradicting natural processes, with the planning orientation focused on “not being a parent” (p. 53). He drew upon the work of other social psychologists to describe the concept of family planning as a particularly complex executive ego function and that it required capacities and situational factors that challenged persons with lower socioeconomic status (Rainwater, 1960). In particular, he contended that lower-income individuals and families faced complex social situations, a host of often-conflicting normative values, and limited socialization to future planning, where the function of planning required a strong sense of personal stability, trust in the future as well as the

capacity to project oneself into the future to translate future outcomes into actions today (Rainwater, 1960). While the complexities of pregnancy decision making span all socioeconomic classes, the disparities seen by Rainwater and others among socioeconomic classes and racial minorities in the United States persist today (Mosher et al.).

Hoffman & Hoffman (1973) developed a theoretical model that identified nine values or satisfactions that children provide to parents, articulating motivations for parenthood and the functions or needs that children fulfill for the parent. The nine values described in their model include: *adult status and social identity, expansion of the self, moral values, primary group ties and affection, stimulation and fun, achievement and creativity, power and influence, social comparison, and economic utility* (Hoffman & Hoffman). Additionally, they developed these values along with a set of costs of having children as well as alternatives to fulfilling those satisfactions besides through children, particularly female employment, education, economic security, plus leisure time and fulfillment through other family forms (Hoffman & Hoffman). In this context, Hoffman & Hoffman also developed an *alternatives hypotheses*, suggesting that individuals or groups who have less access to these alternative forms of satisfaction, particularly those of lower socioeconomic status, will value children more highly as an avenue for satisfaction. Subsequent multinational investigations made their model among the most extensively studied frameworks for fertility motivations (Michaels, 1988).

Hoffman and Manis (1979) reported their investigation of this model in the United States with a cohort of 2025 interview participants, including men and women, married and single, plus parents and non-parents. They found mixed results regarding

their alternative hypothesis, revealing that groups with less access to economic resources – those with less education and black – were more likely to value the economic utility of children, plus participants with a rural background were more likely to value security and economic utility for old age and urban dwellers valued children more for meaning and purpose (Hoffman & Manis). They did not find significant differences related to higher education, higher employment, and egalitarian sex roles in valuing children in relation to these alternatives, but suggested that while these alternative attainments did not diminish the general values or satisfactions achieved through childbearing, they had a strong relation to desired family size (Hoffman and Manis). Additionally, they found a pattern in the *achievement competence and creativity* element of their model, where women without children who had higher status employment were most likely to cite this value when compared to employed mothers, leaving the researchers to hypothesize that the anticipated benefit associated with parenting was greater than the experienced reality (Hoffman & Manis). While not actively addressing the costs, or disadvantages of having children, their findings suggested that economic considerations were important in setting an upper limit to the number of desired children, but also “...if the needs children satisfy are important enough, and if there are no acceptable alternative ways of satisfying these needs, considerable costs will be endured in order to achieve the benefits” (Hoffman & Manis, p. 595).

Ambivalence

By the mid 1990s, researchers began recognizing that conventional measurement strategies for fertility interests were limited in their ability to meaningfully assess the concept of pregnancy intention and that ambivalence toward pregnancy and childbearing

may hold a significant role in the discrepancies noted between expressed intention, behavior, and pregnancy outcomes (Brown & Eisenberg, 1995; Trussell et al., 1999). Drawing upon 1995 NSFG data, Trussell and colleagues observed that a third of births attributed to contraceptive failures were intended pregnancies by conventional measures and that 41% of women with a contraceptive failure reported feeling neutral, happy, or very happy about their pregnancy. In concert with these findings, Luker (1999) contended that the design of research models at the time did not adequately capture the complexity of behavior, and was only beginning to recognize the demographic shifts in societal decision making from excess fertility to initial childbearing. Bacharach & Newcomer (1999) critiqued the validity of retrospective reporting in capturing a women's intention toward pregnancy, plus argued that measurement was influenced by social norms, that intendedness toward pregnancy exists more as a continuum than a dichotomous phenomena, that the idea of planning a pregnancy does not necessarily fit into the way some individuals see their lives, and that positive and negative feelings toward pregnancy can coexist, creating ambivalence. Both Sable (1999) and Zabin (1999) contended that pregnancy intention is a highly complex concept that involves a wide range of emotional and psychological factors, including that both attitudes toward pregnancy and attitudes toward birth control must align. Noting that the 1995 NSFG was the first fertility study to include measures of happiness, Trussell and colleagues argued that additional measurement strategies were warranted to capture greater nuance in pregnancy intention and related behavior, which were progressively incorporated in the 2002 and 2006-2010 waves of NSFG (Mosher et al., 2012).

In the past decade, multiple researchers have explored the role of ambivalence in pregnancy decisions, unintended pregnancy, use of contraception and in a variety of at-risk subgroups, affirming that pregnancy decision making is multidimensional, challenged by a range of conflicting norms, values, and situational variables, but findings remain elusive in offering distinctive guidance to policy and clinical practice (Bloom & Hall, 1999, Bruckner, Martin, & Bearman, 2004; Cawthon et al., 2009; Commendador, 2003; Ekstrand et al., 2009; Frost et al. 2007a, 2007b; Gerber, et al. 2002; Herrman, 2007; Higgins et al., 2008, 2009; Huang, 2005; Kavanaugh & Schwartz, 2010; Kendall et al., 2005; Kramer et al. 2007; Landry et al., 2008; Layte, McGee, Rundle, & Leigh, 2006; Naravage, et al. 2005; Nettleman, Brewer, et al., 2007; Nettleman, Chung, et al. 2007; Noone, 2004; Noone & Young, 2009; Santelli et al., 2003, 2006, 2009; Stevens-Simon, Sheeder, & Harter, 2005; Williams et al. 1999; Williams et al. 1997). While the convention, reliance on retrospective measurement in both demographic and other studies continues, as well as emphasis on quantitative approaches limit the capacity for capturing nuance in decision making (Kavanaugh et al, Santelli et al 2003, 2009). As described previously, increasing differentiation of intention groups is being achieved by examining timing errors in contract to unwanted pregnancies and abortions, although little change in rates of unintended pregnancy and unintended births have been seen in recent decades, particularly among less advantaged groups (Finer & Henshaw, 2006; Finer & Zolna, 2011; Mosher et al. 2012; Santelli et al. 2003, 2009). Additionally, all definitions associated with pregnancy intention assume that pregnancy is a conscious decision (Santelli et al., 2003).

In the last decade, researchers have attempted to discern the dimensions of pregnancy intention, main contributors to the phenomenon and further refine measurement (Mosher et al. 2012; Santelli, 2003, 2006, 2009). Previously described, Speizer and colleagues (2004) conducted factor analysis on results from a study of 1371 women in New Orleans, using a modified NSFG question set, discovering a single latent factor called *pregnancy desirability*, with three variables common to all models and across groups including happiness when finding out about pregnancy, the effort or degree they were trying to get pregnant, and whether they wanted to have a baby with their partner at the time. While recognizing the strength of the partner-related and happiness variables, they considered that the latent factor offered little more nuance than the question(s) used in conventional measurement, seemed to contradict common understanding as well as their qualitative findings, and that further work was needed to capture domains of decision making (Speizer et al.).

In their qualitative study linked to the New Orleans investigation, Kendall and colleagues (2004), reported interview of 77 inner-city, predominantly black (73) women age 14-38 attending public family planning or prenatal clinics, and articulated five domains associated with intendedness: (1) teen and premarital sex, (2) ideal verses alternative realities of childbearing and motherhood, (3) marriage and partner relationships, (4) contraception side effects, misperceptions, misinformation, limited access and reluctant partner discussions, and (5) prevailing opposition of abortion. In this population, they found that the notion of planning a pregnancy was generally irrelevant and the factors required for planning were generally not in the control of the participants (Kendall et al.). Additionally, the study team revealed evidence of suspicion,

misperceptions, and negative experiences with contraception, that early pregnancy seemed less relevant to this population, that partner support was absent or lacking, that marriage was a greater commitment than motherhood, that other opportunities are outside of their reach, that pregnancy may be valued in the community, and that pregnancy is a consequence of the attempt to fulfill developmental and emotional goals (Kendall et al.).

Additional quantitative analysis associated with the New Orleans study revealed that traditional pregnancy intention measures did not reliably predict a woman's choice to continue or abort a pregnancy and that their relations with male partners, the desire for a baby with the partner, and other life circumstances, such as education and employment, were critical decision dimensions (Santelli et al., 2006). Focused investigation about contraceptive use revealed that nonuse of contraception at first sex related to concern about parents discovering sexual activity, unexpected/unwanted sex, and lack of knowledge about contraception, where nonuse for a second or higher order unintended pregnancy related to problems accessing contraception or discontinuance of methods (Iuliano et al., 2006). Additional analysis of New Orleans data that focused on 13-19 year old women revealed that positive orientations toward early motherhood were associated with unintended pregnancy, with orientations including feelings that pregnancy allowed women an opportunity to assert responsibility, become closer to their families, and achieve greater intimacy with their boyfriends (Afable-Munsuz, Speizer, Magnus, & Kendall, 2006).

In a grounded theory study of previously-pregnant low-income women conducted in south King County, Washington, Gerber and colleagues (2002) derived a central theme of *if it happens, it happens*, observing that participants infrequently considered planning a

part of their pregnancy experience, were influenced by their relationships and pressure from partners, often viewed the term *intended* with negative connotations, and conveyed neutral views toward unplanned pregnancy. Other focus-group qualitative work with 32 Michigan women by Nettleman and colleagues (2007) revealed 146 reasons for unprotected intercourse, with four major categories including method-related, user-related, partner-related, and cost-access related. While the participants were unequivocal in their desire to not get pregnant, they also conveyed that they considered pregnancy a “natural” event in contrast to contraception, plus some women felt that unintended pregnancy would be less a concern in the presence of adequate emotional and economic support (Nettleman et al.).

Extending their previous factor development work from New Orleans, Santelli and colleagues (2009) used 2002 NSFG data to formulate a multidimensional measure of pregnancy intention analyzing data from 3,032 pregnancies. Exploratory factor analysis resulted in creation of two scales, one each for *desire* and *mistiming*, where the *desire* scale was the result of factor loadings from six NSFG questions: happiness, wanting, trying, wanting with partner, on time, and unwanted (Santelli et al.). Multiple regression and subsequent logistic modeling revealed that the dimensions of desire and mistiming were highly and independently predictive of the decision to continue pregnancy, but revealed that mistiming displayed characteristics of a post-hoc planning factor, with cognitive rationalization of the pregnancy after it occurs (Santelli, et al). Additionally, their analysis revealed that differences in perceived partner intention were only variable for teenagers and that pregnancy desire, but not mistiming, was predictive for black women (Santelli, et al). While offering additional nuance to the analysis reporting of

pregnancy intention, researchers conceded that the reliance on retrospective measurement limited its utility in predicting future contraceptive behaviors and recommended that longitudinal pre-pregnancy studies were needed (Santelli et al.).

While there have been no documented applications of the model to pregnancy planning and intention, the *Theory of Planned Behavior* and the *Theory of Reasoned Action* are among the most widely studied frameworks articulating the relationship between intentions and behaviors, and may offer opportunity for examination of pregnancy intentions and ambivalence (Ajzen, 1985; Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975; Fishbein & Ajzen, 2010). To date, applications in reproductive health have been limited to condom use for disease prevention and contraception (Ajzen, 2012; Fishbein & Ajzen, 2010; Reinecke, Schmidt & Ajzen, 1997). These models promulgate that behavioral intentions are formed from the interaction of attitudes and subjective norms, further mediated by the interaction of perceived behavioral control, with behavioral beliefs, normative beliefs, and control beliefs as precursors (Ajzen, 2012; Fishbein & Ajzen, 2010; Madden, Ellen & Ajzen, 1992). Additionally, these models contend that attitudinal ambivalence arises in the presence of conflicting precursors toward an attitudinal object, and increase as the number of conflicting beliefs increase as well as decrease when one or more perceptions exerts dominance (Ajzen, 2001). Given the increasing recognition that pregnancy intentions are multidimensional and that ambivalence is prevalent, these models may offer mechanisms for describing the complex relationships in pregnancy decision making.

Washington State TAKE CHARGE: Study of Recently Pregnant Women

Washington is among the 27 states that had received federal waivers by 2009 to expand their Medicaid programs and offer increased eligibility for family planning services, and is among the 21 states with more inclusive income-based waivers (Gold et al, 2009). Washington State launched its TAKE CHARGE program in July 2001 and experienced rapid program expansion, enrolling over 335,000 clients in the first five years of the demonstration (Cawthon et al. , 2006). Washington received a subsequent three-year waiver renewal for July 2006 through June 2009 and each waiver period integrated program evaluation research in partial fulfillment of the federal waiver's role as a family planning demonstration project (Cawthon et al. 2006, 2009). The TAKE CHARGE family planning demonstration included two groups of clients in its 2006 – 2009 waiver: (1) men and women with family incomes at or below 200% of Federal Poverty Level, seeking to prevent unintended pregnancy, also known as *Program G* participants and (2) recently pregnant women who would otherwise lose Medicaid coverage after their maternity coverage ended, also known as *Program S* participants (Cawthon et al. 2009). The latter group is automatically eligible for ten months of family planning coverage after the end of their full-scope maternity care, plus many remain eligible for continued enrollment in the income-based family planning program after that (Cawthon et al. 2009, p. vii).

Program S women were the focus of the program evaluation research for the 2006-2009 waiver, as this group comprised 44.4% of all Medicaid funded deliveries in Washington State in 2007, had an estimated 59% rate of unintended pregnancy and a 48% unintended birth rate, plus have been characterized by both high rates of repeat

pregnancy and low enrollment/utilization of family planning programs (Cawthon et al. 2009). The objective of their research was to identify the reasons for low family planning utilization and low-reenrollment, hypothesizing that ambivalence about becoming pregnant again was common and a contributor to low family planning program utilization, as well as that users and non-users of family planning services differed in characteristics, attitudes, and beliefs (Cawthon et al.).

Preceded by a pilot survey in 2006, Cawthon and colleagues (2009) conducted a predominantly forced choice survey of 1252 women who had a Medicaid-funded birth in March or April of 2005, with the survey being administered by mail (73.3%), phone (19.6%), and internet (7.1%) between February and June 2007, around the second birthday of the participant's 2005 child (Cawthon et al.). Many questions were similar to those used in PRAMS and NSFG surveys, included one open-ended response option, plus analysis integrated survey responses with data from birth certificates and Medicaid family planning utilization (Cawthon et al.). Findings from the survey generally supported the investigators hypotheses, revealing shifts in employment status from full-time to homemaker, reduction in the portion uninsured from pre-pregnancy, but a increased portion covered by Medicaid, that most participants were aware of family planning services but less than half recognized it by name, general agreement with use of birth control for family planning, that 59% conveyed an ambivalent response for pregnancy intention for 2005, and that 57% reported that they were not doing anything to keep from getting pregnant (Cawthon et al.) Additionally, when compared to prior a prior survey of Program G participants, a greater proportion wanted to get pregnant in the upcoming twelve months, that married women expressed this more frequently than single

women, and that within 33 months of their target 2005 birth, almost 24% experienced a subsequent birth or were pregnant, including almost 20% who reported abstinence as their birth control method (Cawthon et al.). Within a year after delivery of their 2005 child, 54% of women had received a Medicaid family planning service and those utilizing services tended to be younger, had fewer years of education, fewer prior births, and were more often employed full time (Cawthon, et al.). Women who experienced a subsequent birth in the 33 months after the birth of their 2005 child were most likely to have reported no contraceptive use, report excellent health status, report homemaker status, and be under 30 years old (Cawthon, et al).

A remarkable feature of this study was a plethora of volunteered responses to the survey, despite the predominantly forced choice structure and limited space on the mailed version. Among the 1292 participants, 256 volunteered responses to the single open-ended opportunity to share “additional comments or questions” while there were 1,150 comments volunteered as “other” responses to questions and 997 unsolicited comments (L. Cawthon, personal communication September 1, 2009). Initial review of the transcribed volunteered responses to the pilot survey by this investigator revealed a wide range in depth and breadth of comments, but many that were robust and revealed passion of participants to describe their situation, attitudes, and beliefs. These volunteered comments, in the context of other survey responses appeared to offer research opportunity to learn more about the factors and intentions influencing the participant’s pregnancy and contraceptive decision making, including the possibility to understand the study findings in greater depth and uncover additional dimensions contributing to unintended pregnancy and ambivalence.

Summary

This chapter has introduced relevant context, history, research, and literature associated with family planning, measurement, contraception, pregnancy intention, unintended pregnancy, and decision making. While this review includes a broad base of literature, fertility and reproductive health are among the most extensively studied topics, and the literature included in this review is far from complete for any specific subtopic.

Family planning and the driving forces behind this complex and controversial topic were introduced, including international issues and specific history in the United States. This offers a background for the evolution of family planning and fertility policy, programs, and research, including a context for viewing the disparity in both populations and values on this topic, which may influence both individual and group behavior.

Unintended pregnancy was introduced as a concept associated with excess and unwanted fertility, including the history and challenges associated with measuring this phenomenon. This included disparities in rates of unintended pregnancy among groups in the United States. The costs and consequences of unintended pregnancy were explored, including public and individual economic costs, health and psychological outcomes, and the controversial topic of abortion as an outcome of unwanted pregnancy. Contraception was introduced as a strategy for the control of excess and unwanted fertility, including history and transitions associated with the introduction of hormonal contraception in the 1960s, also described as the *contraceptive revolution* (Benagiano et al. 2006). Research associated with the use and efficacy of contraceptive methods was introduced, including the concept of contraceptive failure, its measurement and its prevalence in populations. While embedded in several prior sections, the concept and challenges associated with

pregnancy decision making was overviewed, including the growing recognition of ambivalence toward pregnancy and contraception as a key factor in unwanted pregnancy. Finally, the 2007 Washington State TAKE CHARGE Study of Recently Pregnant Women was introduced and described, which serves as the data foundation for this research.

While extensively researched, unintended pregnancy in the United States remains prevalent, with rates essentially unchanged in recent decades, and demonstrates higher rates of unintended pregnancy than most developed countries. Despite research, programs, and policy interventions, the phenomenon remains elusive, with consequences for individuals, groups, and society. More recent research has increasingly recognized pregnancy intentions as a complex and multidimensional phenomenon that challenges measurement and research. While recent work has enhanced nuance of measurement, demographic, and clinical studies have been challenged by retrospective approaches to pregnancy intention. The comparatively small number of qualitative studies has uncovered additional nuance and dimensions of decision making as well as contributors to pregnancy intention. It is the aim of this study to further expand knowledge and understanding of the factors and forces that influence sexually active women in their pregnancy decision making and contribute to the body of knowledge informing programs, policies, and future research in prevention of unintended pregnancy.

CHAPTER 3

Research Design and Methods

Study Design and Method Overview

A descriptive design was selected for this study to match the nature of the research question and specific aims, as well as the nature and limitations of the data informing this research. Naturalistic inquiry, as described by Lincoln and Guba (1985), served as the paradigmatic viewing position for this study, and analysis represents a concurrent, nested, mixed-methods design with qualitative priority (Creswell, Plano-Clark, Gutman, & Hanson, 2003) Qualitative description is the primary method employed in this study, with quantitative descriptive strategies used to articulate the general characteristics of the samples, describe the subsamples in relation to the broader group of survey participants, and support theme development through focused operations.

This study analyzed existing data collected in 2007 as part of program assessment research conducted by the Washington State Department of Social and Health Services (DSHS), Research and Data Analysis Division (RDA). The original study, *TAKE CHARGE Final Evaluation: A Study of Recently Pregnant Women*, was a program evaluation component for the 2006 through 2009 renewal period of Washington State's TAKE CHARGE Medicaid family planning demonstration waiver, and included women who had a Medicaid-funded birth two years prior to data collection. While the study centered on a 54-item predominantly forced-choice questionnaire, the RDA research team received a plethora of qualitative responses from the 1,292 participants, both in areas where the survey afforded an opportunity for respondents to add comments as well as where no such opportunity was offered (L. Cawthon, personal communication, May 2,

2007). Beyond recoding some written responses into a forced choice category of a related question, and limited use of comments as exemplars, no systematic analysis of the qualitative comments was conducted by the original research team (Cawthon, et al., 2009; L. Cawthon, personal communication, May 2, 2007).

Qualitative description was selected as the priority method for this study and is particularly well suited to the nature of the data, which was limited in depth but offered substantial breadth, not seen in typical qualitative studies. Sandelowski (2000b) characterized qualitative description as particularly adaptable to a wide variety of data collection techniques and is most useful in maximum variation sampling, where the “expected outcome is a straight, descriptive summary of the informational contents, organized in a way that best fits the data” (pp. 338-39). Qualitative description focuses on the contextualized facts of a phenomenon or its “who, what and where” (p. 339), and relies on low-inference interpretation likely to achieve interpretative consensus among those viewing the data (Sandelowski). While a qualitative descriptive approach may display some “hues, tones and textures” (p337) reminiscent of other qualitative methods such as grounded theory, phenomenology, narrative and ethnography, it is the least theoretical among methods and is least conducive to abstraction. This yields relatively straightforward and unadorned answers to questions particularly amenable to the interests of policy makers and clinicians (Sandelowski). While quantitative descriptive designs rely almost exclusively on the application of preexisting codes to data, qualitative content analysis is predominantly data-derived, although directed analysis approaches may reside in a theoretical framework (Hsieh & Shannon, 2005; Sandelowski). In quantitative content analysis, numeric operations may be actively employed in analyzing responses,

but the focus of these strategies is to achieve a description of patterns and generate meaning verses a quasi-statistical analysis (Sandelowski, 2000b, 2001). Most relevant to this study, Sandelowski (2010, 2011), challenged the notion of distinct boundaries between the various qualitative methods, what distinguishes qualitative verses quantitative design, as well as what might be considered data, arguing that boundaries are permeable and that the researcher's attitude toward the data defines its interpretive flexibility.

As data collection for this study had previously occurred, design characteristics resided primarily in the analysis phase. Previously introduced, this study represents a *concurrent, nested, mixed methods design*, with integration in the analysis phase and priority afforded to the qualitative approach. This design offers a study the advantages of both quantitative and qualitative data, and the opportunity to gain perspectives from different types of data or from different levels within a study (Creswell et al., 2003). However, this design poses several challenges: data that must be transformed in some way to allow analytic integration, resource intensity, few examples in the literature to guide a researcher through the process, and little guidance how researchers can resolve the discrepancies and paradigmatic conflicts that arise when drawing upon two types of data (Creswell et al., 2003; Doyle, Brady, & Byrne, 2009; Plano-Clark, Creswell, Green, & Shope, 2008; Sandelowski, Voils, & Knafl, 2009).

A concurrent, nested design may or may not have a guiding theoretical perspective, and unlike a concurrent triangulation design, has a predominant method that guides the project (Creswell et al., 2003). The less dominant method is nested, or embedded, within the primary method and may be used to address a separate question or

seek information from separate levels or groups (Creswell et al.) Concurrent, nested designs are characterized by concurrent collection both quantitative and qualitative data, with integration occurring in the analysis phase (Creswell et al). While data was already collected for this study, collection of both qualitative and quantitative data did occur simultaneously, albeit by a more opportunistic than intentional process.

The RDA research team utilized SAS Version 9.1 for Windows to analyze data, including general descriptive statistics, t-tests for analysis of differences in continuous variables and nonparametric statistics (Wald chi-square, Fisher exact) for categorical variables. Additionally, the original research team created logistic regression models to explore associations between demographic variables and other selected response variables (Cawthon et al, 2009). Quantitative methods were integrated into this study as well, residing as the nested or embedded analysis strategy.

As in the original RDA research, this study employed descriptive statistics to articulate demographic characteristics for subsamples of participants who offered qualitative responses and compared these subsets to all participants and each other. The RDA research team compared total survey respondents to the population of women with 2005 Medicaid births to assess similarities and differences. Additionally, focused descriptive statistics were utilized to compare groupings of participants on selected characteristics that contributed to the development of themes. During analysis of future pregnancy intention, qualitative patterns were reduced and integrated with survey and birth history data for quantitative comparisons. Regardless, the emphasis of this research remained on participants' qualitative responses in the context of other forced-choice responses and birth history data. Except as described above, it was not the intention of

this study to repeat previously performed statistical analysis on the entire sample of survey participants.

Research Purpose

The purpose of this research is to expand knowledge and understanding of factors and forces that influence sexually active women in their pregnancy decision-making, including the initiation and use of contraception if they wish to avoid or delay pregnancy. The results of this research should contribute to the body of knowledge toward informing programs, policies and future research in unintended pregnancy prevention.

Specific Aims

The specific aims of this study were to:

1. Describe the characteristics of women with a recent Medicaid-funded birth, including any patterns associated with their pregnancy interests;
2. Describe the contraceptive strategies employed by recently pregnant women and perceived factors that contributed to their pregnancy; and
3. Describe the expressed attitudes of recently pregnant women toward pregnancy, childbearing, and contraception.

Source Study

TAKE CHARGE Final Evaluation: A Study of Recently Pregnant Women

Geographic setting. All survey participants were women who resided in Washington State when they gave birth between March 1, 2005 and April 30, 2005. Participants were distributed throughout the state and were classified as residing in one of three general regions: King County (most populous county in Washington), other Western Washington counties and Eastern Washington counties (Cawthon et al., 2009).

More specific location information was not reported. Data on the geographic distribution of participants was not available for this study.

Population of interest. Women who participated in the *Study of Recently Pregnant Women* were enrolled in the Washington State Health and Recovery Services Administration (HRSA) *Pregnancy Medical* program, also referred to as *Program S*. To qualify for Program S, women must have resided in the State of Washington, been pregnant, and had family income below 185% of Federal Poverty Level (FPL), including the unborn child (HCA, 2012). Women who qualified for Program S became eligible for full-scope medical care for the duration of their pregnancy and two months postpartum, plus extended family planning coverage for one year postpartum (Cawthon et al., 2009). Compared to other DSHS programs, Program S eligibility is bound to pregnancy and Medicaid coverage is lost after the maternity period ends (Cawthon et al.). In contrast to Program S, individuals and families who meet strict income and resource criteria may qualify for *Temporary Assistance for Needy Families (TANF)* which provides full-scope medical care, plus time-limited cash assistance (Cawthon, et al.; HCA). Women and men who seek to prevent pregnancy may be eligible for *Program G*, also known as TAKE CHARGE, Washington's income-based family planning expansion waiver program (Cawthon et al.; HCA). The scope of TAKE CHARGE is limited to family planning services and participants must meet income eligibility at 200% FPL (Cawthon et al.; HCA). As previously introduced, the *Study of Recently Pregnant Women* was an extension of program evaluation research supporting the TAKE CHARGE family planning demonstration project. Data collected on Program G participants during an

earlier assessment study was used by the RDA research team in analyzing survey results (Cawthon et al.). Selected results from this study were described in Chapter Two.

Survey administration. The final survey sample of 2504 women originated from 2682 women between the ages of 18 and 44 who were enrolled in the Washington State Medicaid *Pregnancy Medical Program (Program S)* and gave birth between March 1, 2005 and April 30, 2005. The RDA research team reduced the original sample by excluding women who were known deceased or whose infant was deceased, whose primary language was not English or Spanish, and who had previously been contacted to participate in the *Pregnancy Risk Assessment Monitoring Survey (PRAMS)* (Cawthon et al., 2009).

DSHS RDA contracted with the Washington State University Social & Economic Sciences Research Center (SESRC) to administer the survey, which allowed for mail, phone and web responses (Cawthon, et al. 2009). The final survey instrument (Appendix A) had been piloted and modified as a result of a preliminary survey of 400 women during Fall 2006 who had given birth in November or December 2004 (Cawthon et al). The preliminary survey results alerted the RDA research team to the potential for volunteered qualitative responses (L. Cawthon, personal communication, May 2, 2007).

Participation and characteristics. From the final sample of 2504 women, 1292 completed surveys, for a total response rate of 52.9% following adjustment for ineligible participants. Of the total sample 555 (22.2%) were not able to be located and 339 (13.5%) did not respond (Cawthon et al., 2009). Of the 1570 eligible women who were able to be contacted, 278 declined to participate, with the remaining 1292 women who completed surveys yielding an 82.3% response rate among contacts (Cawthon et al). The majority

of women (n = 945 or 73.3%) responded via the mail-in survey, while 253 (19.6%) completed the phone survey and 92 (7.1%) completed the online version (Cawthon et al).

Cawthon and colleagues (2009) compared characteristics of survey respondents with known characteristics of non-respondents as well as those of all *Program S* women age 18-44 who gave birth in 2005. These comparisons are summarized in Appendix B. When compared to non-respondents, women who responded to the survey were significantly more likely to be older (26.1 years vs. 25.6 years), more white in race, have some college education, and have greater portions from eastern Washington (Cawthon et al.). With the exception of average age, survey respondents were significantly different on these same variables when compared to all *Program S* women who gave birth in 2005 (Appendix B) (Cawthon et al).

Volunteered qualitative responses. In addition to their responses on the forced-choice items, respondents to the survey volunteered a substantial number of written (or verbal in the phone survey) responses. Some questions in the final survey instrument (Appendix A) offered the opportunity for an “Other (Please tell us)” response and space for “additional comments or questions” (Question 54 or Q54) at the end of the survey. In addition, participants added unsolicited comments to the survey where no such opportunity was offered (L. Cawthon, Personal communication, September 1, 2009). Among these volunteered comments, 997 were unsolicited additions, 1150 were responses to “other” and 256 were comments in the open-ended Q54 response area (L. Cawthon, Personal communication, September 1, 2009).

Sample for Qualitative Study

The sample selected for this research was limited to subsets of participants who volunteered one or more supplemental comments. For this study, the sample for qualitative analysis could be only reduced from the set of survey respondents, not expanded. Access to the survey participants for additional questioning or interviews was not possible (L. Cawthon, Personal communication, May 2, 2007). The sample reduction process is described in a subsequent section.

Strengths and Limitations of Data for Qualitative Study

The sample and available data for this research offered both strengths and limitations. The primary limitation of the data for qualitative analysis was the depth of response, restricted by the structure and response space afforded in the survey tool, although one participant appeared to attach a supplemental letter, and others who responded to the internet data collection option may have had fewer space constraints. Additionally, no opportunity existed to collect additional in-depth data from selected participants, which limited some design options, including interview-dependent qualitative methods or a sequential-explanatory mixed methods approach (Creswell et al., 2003). While situated in the context of the survey instrument, participants could volunteer any type comment in the Q54 open-ended response, regardless of its relevance to the aims of this study.

Risk existed that the volunteered responses would not offer sufficient depth or relevance to add understanding of the phenomena or support study aims. In their discussion of the strengths and weaknesses of secondary data analysis, Johnson and Turner (2003) articulated risks of incomplete data and potential for low interpretative

validity. While this depth-related limitation was significant, the favorable tradeoff was the breadth and variation of the sample and respondents. Except as noted previously, those originally sampled for this survey represented all Washington State citizen women who experienced a Medicaid-funded birth in March or April of 2005 (Cawthon et al., 2009). Over half (53%) of those women were contacted and responded to the survey, and a large number of participants volunteered additional qualitative responses. This offered opportunity for maximum variation sampling, where a larger sample and the tradeoff of breadth over depth could afford greater understanding of diversity and variability of a phenomenon (Patton, 2002; Polit & Beck, 2004; Sandelowski, 2000b). Because pregnancy intention is increasingly considered a multidimensional and contextual phenomenon, an opportunity to capture variation was particularly relevant for this research (Santelli et al. 2003, 2009). Additionally, the structure of the original survey allowed for differentiation of groups analogous to a purposive sampling strategy employed in most qualitative designs.

The physical and process restrictions of the survey limited the length of response possible for most participants. Responses aggregated in the pilot survey offered some advance insight, with responses to the Q54 open-ended section ranging from 4 to 158 words, with most from 40 to 80 words in length. In the final survey, the typical responses ranged from 40 to 100 words, with several at approximately 200 words. One participant volunteered a 532 word comment, possibly as an attachment. Almost all responses volunteered within the body of the survey were under 20 words. While this was a clear limitation in depth and richness within a conventional framework for qualitative studies, it also appeared to offer favorable tradeoffs. Because of the space restriction, participants

who felt compelled to offer additional information were required to self-edit their comments to convey the message most important to them in the context of the survey or specific question(s). This process of self-editing appeared to afford greater clarity in participant comments and generation of interpretive codes and themes that were more straight-forward, less abstract and clear to various readers, as well as less vulnerable to analytic bias. These features enhanced the analytic rigor and congruence with the strengths of qualitative description (Sandelowski, 2000b, 2010). Additionally, communication trends have evolved over the past two decades, including the emergence of instant messaging and text messaging. These trends suggested where was capacity to communicate meaningful and complex messages in abbreviated forms, particularly among participants who were in their late teens and 20s at the time of the survey.

The question structure in the survey posed another limitation to this research and the data potential. Beyond the emphasis on forced choice responses, the survey did not investigate some areas that could be explored in an interview focused on decision factors and contraception, such as the type of contraceptive method used by women who wanted to avoid the pregnancy that led to the birth of their 2005 child. Additionally, the survey emphasized some areas that would not have received similar emphasis in an interview plan, such as employment status, breastfeeding, or public program familiarity. However, the range of questions in the survey offered a diverse set of prompts that may have contributed to the large number of volunteered responses, or stimulated participants to offer responses that they may not have otherwise considered. When volunteered comments were reviewed for sample selection, the majority focused on insurance, finances, childbearing interests, and contraception.

In addition to the survey responses by participants, birth history data was available for this study, and included births recorded in Washington State from July, 1988 through December, 2008. Birth history, including previous and subsequent births, would have been key question probes in any qualitative interview regarding pregnancy or contraceptive decision-making. The availability of this data offered robust opportunity during analysis, including the participants' prior number of children, birth intervals, current/recent pregnancy, age at first birth, and subsequent births in relation to expressed pregnancy interests.

Beyond the variety of topical cues in the survey, the perceived anonymity of the written survey instrument may have allowed for candor that could not have been achieved through individual or focus-group interviews. Self-administered written (or internet based) surveys allow participants control of response pacing, lack an interviewer who may be perceived as judgmental and afford higher perceived anonymity, which can lead participants to be more willing to report undesirable or socially sensitive behaviors (Conrad & Schobber, 2008; Johnson & Turner, 2003). For example, one question-based comment volunteered by a participant in the final survey was "I had 2 abortions. This is my secret, my husband and family should not know, not now, not ever".

A possible limitation was the age of the data. Collected in spring 2007, the data was six years old in 2013 and the survey asked participants to reflect on personal status and decisions in 2005. Political, social and economic conditions have changed since that time. However, as evidenced in the review of literature, fertility decision-making and unintended pregnancy has been a persistent and elusive phenomenon that has interested

population researchers for decades. Data obtained in this study should offer both forward and backward durability.

Data for Study and Sample Reduction

Structure of Data

This study emphasized qualitative analysis of existing data from the *TAKE CHARGE Final Evaluation: A Survey of Recently Pregnant Women*, combined with birth history data from the *First Steps Database* (FSDB). Survey data was obtained on compact disk in pre-transcribed and pre-coded form as Microsoft Excel 1997-2003 files. Both structured survey responses and volunteered qualitative comments were linked to individual participants, identified only by a unique, second-generation participant number that created an anonymous set of data. Qualitative comments and birth history were received in files separate from the survey data. The coding schema for participant responses, frequency data to the structured survey questions, and copies of data collection documents were included in a related Microsoft Word 1997-2003 document. Qualitative comments volunteered by participants were associated with specific survey questions as well as participant's anonymous identification number.

Purposive Sample Selection

Sampling strategy reflects a distinguishing feature between most quantitative and qualitative study designs, with quantitative approaches emphasizing probability sampling and qualitative approaches emphasizing purposive sampling (Kemper, Stringfield & Teddlie, 2003; Patton 2002; Sandelowski 2000a). The objective of purposive sampling is to seek what would be considered a weakness in a probability sampling approach; information-rich cases that demonstrate the phenomenon of interest, and those that may

yield additional insight or in-depth understanding (Kemper et al, 2003; Patton 2002). Additionally, criterion-based and stratified purposeful sampling strategies allow for the selection and differentiation of cases that represent important aspects of a phenomenon and reveal characteristics that are similar and different across subgroups (Kemper, et al.; Patton 2002; Sandelowski). Criterion-based sampling is particularly relevant in mixed methods designs where the quantitative design precedes and has priority over the qualitative design, which was the case for the initial analysis conducted by the RDA team (Creswell et al., 2003; Patton; Sandelowski). In this study, purposive sampling strategies included maximum variation and criterion-based approaches. In the prior discussion of tradeoffs between depth and breadth of data, maximum variation was forwarded as a potential strength that this sample offered.

Where a purposive, criterion-based sampling strategy typically directs the researcher to seek a limited number of information-rich cases believed to reflect the phenomenon and criterion of interest, the nature of the participants and data available in the *Study of Recently Pregnant Women* limited application of this strategy. Instead, a wide range of limited-depth cases were available with the common characteristic of having a Medicaid-funded birth approximately two years prior to being surveyed for the study. However, respondents to the open-ended Q54 opportunity was always inclusive of participants who volunteered the most extensive comments, whether limited to Q54 or distributed in other sections of the survey. Therefore, participants who responded to Q54 became a key inclusion criterion and became the participants who received the most in-depth attention during analysis.

Sample Reduction

The sample for this study began with 1292 participants who responded to the *Take Charge Evaluation: A Survey of Recently Pregnant Women* survey instrument by mail, phone or internet data collection. The 1292 participants in the survey represented 7.9% of all births during the 2005 calendar year in the Medicaid Pregnancy Medical Program and 1.56% of all 2005 births in Washington State (Cawthon, et al. 2008, 2009).

Table 3.1

Sample Reduction and Disposition

| Group | n | (%) | Status |
|--|------|--------|---|
| All Survey Respondents | 1292 | (100) | 354 excluded for no added comments |
| Any Qualitative Comments | 938 | (72.6) | 345 filtered and retained for reference |
| Substantive Qualitative Comments (Qual593) | 593 | (45.9) | Question specific coding |
| All Pattern-Coded Respondents (PCQual258) | 258 | (20.0) | Pattern and question-specific coding |
| Q54 (open-ended) Respondents | 199 | (15.4) | Pattern and question-specific coding |

Note: Each group is a subset of all groups listed above it

Because this study focused on participants who volunteered additional qualitative comments, the sample was further reduced (see Table 3.1 and Figure 3.1). Of the 1292 participants, 354 did not include any additional comments and were excluded from the study. Next, participants who offered only isolated, non-substantive qualitative comments were filtered from the sample, but these participants were identified, categorized and retained in reserve. This was done to allow for subsequent retrieval in the event their

comments supported a pattern or category emerging from the data. Typically, these comments were limited to a few words in total, and may have shared a clarification about employment, duration uninsured, race, or type of insurance. One response to the open-ended Q54 that may have led to a participant being filtered out at this stage was “Thanks for the 5 bucks”. A detailed *data/sample reduction memo* was maintained through this process and included a log of decisions and other observations about the data.

When completed, this screening and filtering process reduced the sample by an additional 345 participants, leaving 593 women (45.9% of 1292) in the total qualitative subsample, hereafter referred to as the *Qual593* sample. In general, participants were included in the *Qual593* sample if they (1) volunteered qualitative responses anywhere in the survey, and (2) those responses were deemed substantive toward supporting the purpose of this research. Participant comments were deemed “substantive” if they addressed any of the following: values or beliefs surrounding pregnancy, decision-making, childbearing or family; personal or family goals; social, economic or partner influences toward pregnancy, childbearing, family, or pregnancy prevention; awareness or knowledge of resources for pregnancy or contraception; perceived ability, ease or barriers to access resources; knowledge or attitudes regarding pregnancy risk,; knowledge or attitudes regarding contraception, pregnancy prevention, pregnancy timing, or contraceptive methods; expressed changes in attitudes, understanding or self-awareness.

As data aggregation and analysis proceeded, two subsets of the *Qual593* sample were created. Previously introduced, 199 participants who volunteered responses to the open-ended Q54 option represented a group that consistently provided comments with the greatest depth, response frequency, and relevance to aims. This group created the

smallest subsample, hereafter referred to as *Q54 respondents*. Additionally, 59 participants who did not offer responses to Q54, but were included in the pattern-coding development process, were combined with the Q54 respondents to create a sample of 258 participants selected for more focused, pattern-coding analysis, hereafter referred to as the *PCQual258* sample.

Data Analysis and Interpretation

Software Resources

Microsoft Excel 2007 version 12.0.6 was the primary organizing software used for the sample reduction process, data aggregation, and initial question-specific coding. Excel was used for conducting initial calculations and preparing both qualitative and quantitative data for import to other programs. Most qualitative analysis was conducted using ATLAS.ti version 6.2, including the aggregation of transformed survey responses and volunteered comments for the PCQual258 pattern-coding process as well as question-specific management for the total Qual593 sample. Descriptive statistics were performed using IBM SPSS Statistics version 19.0. This included demographic comparisons of sample groups and the original ($n = 1292$) sample as well as focused descriptive analysis for selected variables.

Emergent Design

Emergent design is a characteristic that differentiates naturalistic inquiry and almost all qualitative study designs from experimental methods and other quantitative approaches (Lincoln & Guba, 1985; Leininger, 1985; Patton, 2002; Polit & Beck, 2004; Strauss & Corbin, 1998). Patton (2002) describes emergent design as “Openness to adapting inquiry as understanding deepens and/or situations change; the researcher avoids

getting locked into rigid designs that eliminate responsiveness and pursues new paths of discovery as they emerge” (p. 40). Emergent design embraces inductive, open-ended, reflexive and responsive processes based on new understanding, realities and viewpoints that come forward through interaction with participants and/or data, therefore requiring ongoing decisions about sampling and analysis strategies as the study unfolds (Lincoln & Guba; Patton; Polit & Beck). While many features of an emergent design cannot be foretold, this does not condone a undisciplined or haphazard approach to inquiry, but requires that the investigator outline and attend to a broad strategy that can serve as a guide and benchmark for subsequent developments and changes (Lincoln & Guba).

At the outset of this study, it was not known where qualitative data would arise from the survey, the proximate context in which it was offered, nor where data in the *additional comments* section of the survey would point. Therefore, analysis process for this study depended upon what was, or was not, revealed by the data, then emerged and evolved as directed by the data. In contrast to applying an a-priori analytic schema, the analysis process for this study was driven by the nature, characteristics, and context of the data, with focus on the discovery of concepts and relationships that allowed for organization into explanatory patterns and themes (Patton, 2002; Sandelowski, 2000b; Straus & Corbin, 1998).

Qualitative Description

Qualitative descriptive studies are characterized by employment of qualitative content and thematic analysis, primarily approached from a factist perspective (Sandelowski, 2010). While remaining closer to the data as presented and less abstract than other qualitative analytic approaches, qualitative description remains nuanced and

interpretative in the generation of codes, patterns and themes (Sandelowski, 2000b, 2010). In mixed methods research, the primary paradigmatic differentiation between qualitative and quantitative approaches is the researcher's viewing position toward data and its treatment in the analytic process (Sandelowski, 2000a). Regardless of research approach, the first stages of analysis are data reduction and data display (Onwuegbuzie & Teddlie, 2003). Data reduction began with the initial sample reduction, data aggregation and criterion-based selection processes previously described.

Qualitative Content Analysis

Content analysis has an extensive history in research, is widely used, and represents a variety of analytic approaches to text data, both quantitative and qualitative (Hsieh & Shannon, 2005; Lincoln & Guba, 1985; Patton, 2002). Qualitative content analysis is a common approach to data analysis for qualitative descriptive studies (Sandelowski, 2010). Patton described qualitative content analysis as particularly well suited to text data originating from transcripts, diaries and documents, verses observation-based studies, and that it refers to “any qualitative data reduction and sense-making effort that takes a volume of qualitative material and attempts to identify core consistencies and meanings” (p. 453). The product of qualitative content analysis is a subjectively-derived set of interpretive patterns and themes that represent these core meanings (Hsieh & Shannon; Patton; Sandelowski).

Analysis proceeded consistent with conventional qualitative content analysis as described by Hsieh & Shannon (2005), with a goal of achieving a “richer understanding of the phenomenon” (p. 1286). Directed and summative approaches are less suitable since theory-extending a-priori categories are not readily discernible, and a focus on

word-usage followed by latent analysis would not yield the contextual depth needed to expand understanding (Hsieh & Shannon).

Descriptive Statistics

In the primary analysis of the survey data, Cawthon and colleagues (2009) compared the demographic characteristics survey respondents to non-respondents and the 2005 population of *Program S* women. Additionally, they described respondents' expressed pregnancy intention for the target 2005 birth, future 12-month pregnancy intention and subsequent pregnancy/births as part of their comprehensive analysis of all survey variables (Cawthon et al.).

Descriptive statistics were used in this study to describe and compare the previously-reduced qualitative samples to the sample total respondents and each other on similar demographic variables, but adding reported income, age at first birth, and subsequent births to the group comparisons. In most circumstances, the same categorical groupings (eg: age ranges, race/ethnicity) of variables described by Cawthon and colleagues (2009) were employed in this study. Additionally, focused statistical operations were embedded in the theme generation process, comparing group combinations and variables conceptually relevant to the theme being developed. Most variables assessed were categorical. Statistics were limited to descriptive operations, including frequencies, measures of central tendency, t-tests for continuous variables, crosstabs and chi-square for categorical variables, as well as two-by-two odds ratios.

Data Management and Analysis: Order of Operations

Data management and analysis progressed in several distinct stages, each providing a unique view and framework for assessing the nature and characteristics of

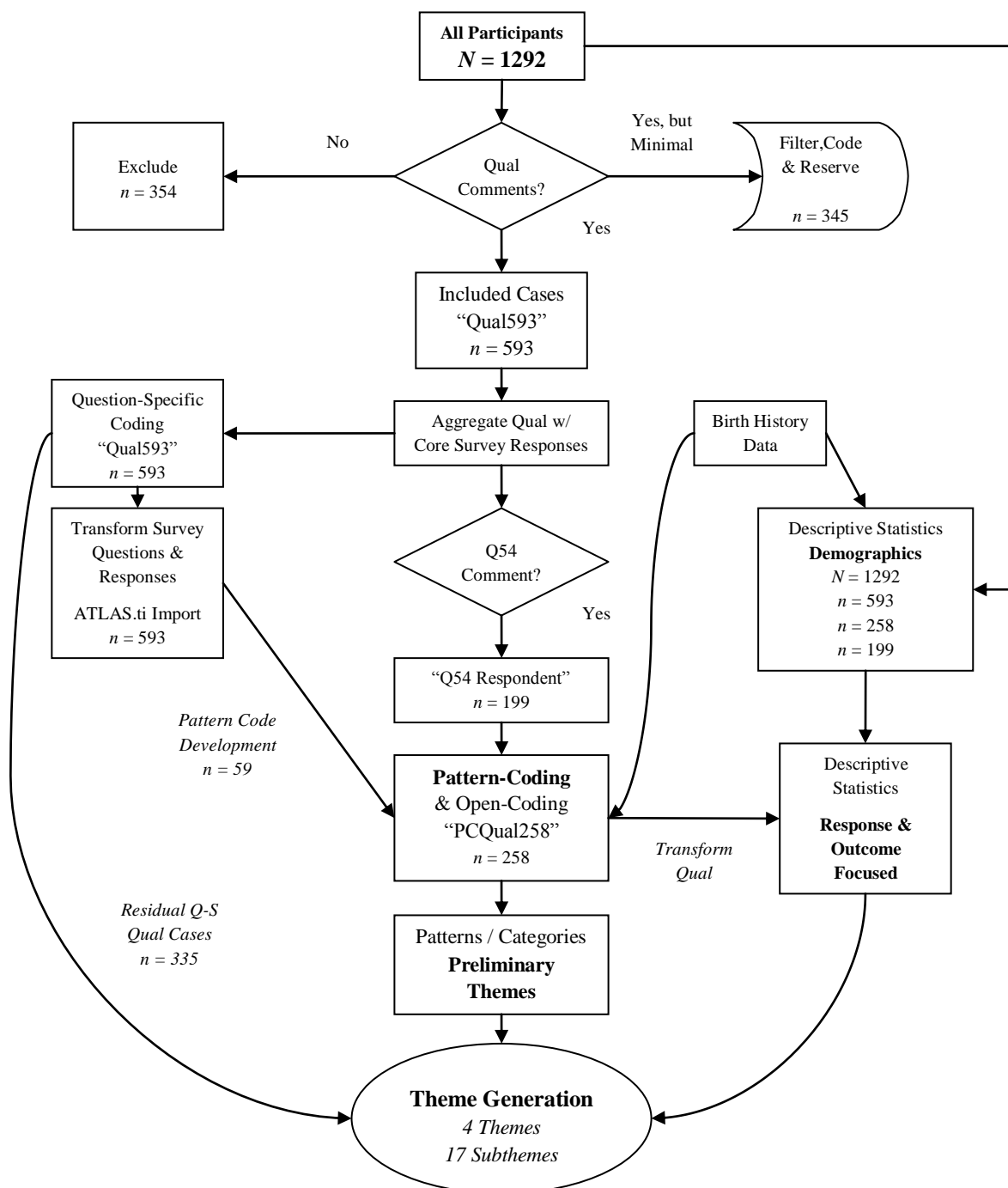
participant responses, including volunteered comments, forced-choice survey responses, and birth history. Together, these offered immersion and a broad sense of the data. This section describes the management and analysis process in chronological order of occurrence. Additionally, Figure 3.1 offers a schematic overview of these stages and steps. As these processes unfolded, a series of reflective memos were created to document both procedural steps and observations that arose from the data.

Previously introduced, analysis began with the sample reduction process, where qualitative comments were assessed with the purpose of including or excluding participants for the qualitative sample (Qual593). Volunteered comments, both open-ended and question-specific, were viewed as isolated lists, absent any relation to any other comments shared by the participant or the context of their response to any associated survey question. Columns were added into a master copy of the core survey responses spreadsheet (coded forced-choice responses) to generate a tracking mechanism for linking qualitative comments with survey responses and participant ID. Qualitative comments were classified as significant, non-significant or multiple answer responses for question-specific comments, plus Q54 open-ended responses were tracked distinctly. This tracking process allowed for the exclusion of participants with no volunteered comments and filtering participants whose comments were deemed non-substantive. While the Qual593 sample was originally reduced to 587 participants, six were re-added to the sample because their comments related to insurance coverage, which appeared to be an emerging pattern. This process afforded initial opportunity to identify participants who offered potentially information-rich responses, based on number of comments and nature of comments observed. Additionally, it created an opportunity to identify initial

characteristics and patterns of comments, some of which advanced through analysis to the final set of themes.

The second phase of data management was *qualitative aggregation*, where multiple columns were added to the master spreadsheet for each of the survey questions that had associated qualitative responses, followed by manually cutting and pasting qualitative comments into the spreadsheet cells for each participant. This process afforded a second immersion into the data, as well as a different viewpoint. While still isolated from the participant's forced choice response to a survey question, all volunteered comments from a participant could be observed in relation to each other, as well as to which survey question they related. Additionally, this afforded opportunity to observe the density that individual survey questions were populated with comments. Specifically, comments appeared to reside in relation to insurance related question (Q13 and Q30), as well as several questions related to current/future childbearing interests and contraception, plus the open-ended Q54.

Figure 3.1 – Data Management and Analysis



Another observation during *qualitative aggregation* was that relatively few comments related to pregnancy intention related to the birth of the woman's 2005 child, and that the majority of comments were orientated to the present time (2007) and future. While not the focus of this phase, observations of participant comments resulted in identification of eight potential patterns emerging from the data and 23 preliminary codes. In their description of the display phase of data management, Onwuegbuzie & Teddlie (2003) proposed that this stage can sometimes be so compelling that interpretation can begin without additional progression of analytic stages. While not the case in this study, their reflection supports the initial interpretive glimpse of data. Beyond the future coding possibilities, several participants were identified as potential sources for exemplar comments.

The third phase was first-pass question-specific qualitative coding, working within the previously expanded master spreadsheet, and focused on clusters of volunteered comments to survey questions. Previously recognized during the qualitative aggregation process, the identified clusters of responses were *insurance-related* and *intention-related* groupings, plus the open-ended Q54. Initial coding focused on the cluster of insurance-related responses, plus responses to Q54 focused only on insurance or finance issues. A second-pass round consisted of open-coding all responses to Q54. As a more integrated depiction of the data was warranted, phase four data management was initiated prior to coding the intention-based cluster of questions. However, this phase resulted in the generation of a preliminary code list of 86 codes in 14 categories, plus three data tracking codes.

The fourth phase of data management included data transformation and import to ATLAS.ti for integrative qualitative coding. Data transformation incorporated *qualitizing*, where quantitative questions and participant responses were converted to qualitative data (Onwuegbuzie & Teddlie, 2003; Sandelowski, 2000b, Sandelowski et al., 2009). Some researchers have argued that all data collected in human subjects research is qualitative in origin, even if depicted as numbers in instrument scores (Sandelowski; Sandelowski et al). In this study, the transformation process possessed similarities to the leading questions and follow-up probes in a qualitative interview. Data transformation was conducted in the Excel master spreadsheet that contained forced choice survey responses, aggregated qualitative comments and the preliminary coding performed in phase three. Qualitative comments were previously arranged in question clusters related to *insurance/finances* and *intention/contraception*, plus Q54. Spreadsheet columns for the associated forced-choice question from the core survey response section were then copied and situated adjacent to the column containing the related participant comment. Additional forced-choice questions were included if they were part of a question set or provided a conceptually relevant anchor, regardless whether they were directly associated were volunteered comments. Thereafter, the survey questions and the numerically-coded forced-choice response for each migrated question were transformed to a textual response employing the *find* and *replace* functions in Excel.

Following data transformation, the spreadsheet section containing transformed responses, volunteered comments, participant ID, and initial coding information was separated from the master spreadsheet and imported into ATLAS.ti using the *survey import* function. Multiple trial import variations were tested prior to the final data import

to ATLAS.ti, and a working platform for coding was created. During the data transformation process, labels were added to clearly differentiate transformed forced-choice responses from volunteered comments. In ATLAS.ti, each spreadsheet row, or participant case, was imported as a unique primary document narrative. Following data import and the establishment of a functional coding palette, the preliminary code list created in phase three was imported.

The fifth phase focused on qualitative coding and analysis, characterized by a process hereafter referred to as *pattern-coding*. Initial coding of participant cases trialed a conventional “code everything” approach, including comments and transformed data, but this resulted in an impractical coding schema with myriad codes, and was abandoned after two participant cases. Open coding proceeded, focused on volunteered responses, with application of both existing and newly generated codes. In the process of coding the first 20 participant cases, patterns of responses began to emerge from the sequential reading of transformed and volunteered responses, including the relationships between these responses. This formed the basis for establishing a unique set of pattern-focused codes, which were retrospectively applied to the initial cases. Thereafter, coding and code development proceeded sequentially for the first 90 participant cases, employing a combination of pattern-coding and open coding volunteered responses. Analytic memos were created for the majority of these 90 participant cases (15%), reflecting data observations, code evolution, and code refinement. As pattern codes were added or modified, they were retroactively applied to prior cases. This process generated 13 code combinations of *ambivalence*, *congruence*, and *incongruence* reflecting patterns of pregnancy desire and contraceptive use, as well as interfacing sets of five

insurance/finance patterns, four *mediator* patterns, and eight *planning* pattern codes. The core pattern codes of *desire*, *ambivalence* and *avoidance* provided a conceptual linkage to the conventional measures of retrospective and prospective pregnancy intention, where *mediator*, *planning* and *insurance/finance* pattern codes created the foundation for several qualitative categories and themes. See Appendix C for a complete list of pattern and open codes.

Upon completion of the code-development process associated with the initial 90 participants, subsequent coding was limited to the remaining participants in the *Q54 respondents* subsample (n = 199), as these participants consistently offered the greatest quantity and depth of responses in the Qual593 sample. As the first 90 participant cases reviewed included 31 *Q54 respondents* and 59 women who did not respond to Q54, the total number of participants subject to pattern-coding increased to 258, hereafter referred to as the *PCQual258* sample. Most subsequent analysis focused on *PCQual258* participants.

The sixth phase of data management focused on reduction and integration of birth history data. The pattern-coding process revealed the value of birth history data, particularly if the participant was currently or recently postpartum at the time of the survey. Calculations and tabulations of birth history from July 1988 through December 2008 were performed in Excel. Date-of-birth data was imported from the core survey responses spreadsheet to calculate approximate age at the time of the participant's 2005 birth as well as the participant's approximate age at first birth. Additional calculations were performed to tabulate birth intervals, prior births, subsequent births, subsequent

births from 2005, and subsequent births that occurred from approximately 8 to 21 months following survey administration.

Once prepared, birth history data for all participants was imported to a copy of the *core survey responses* spreadsheet for subsequent descriptive statistics. Additionally, individual birth history data for each PCQual258 participant was pasted into ATLAS.ti. This data was used to generate new open codes for participants, as well as to revise prior pattern code assignments for participants, based on the revised awareness of their current or recent pregnancy status at the time of the survey.

The seventh phase focused on integrative analysis. At the conclusion of phase six, multiple readings and prior views of the data, codes, categories and patterns had occurred. In their overview of conventional qualitative content analysis, Hsieh and Shannon (2005) recommended that codes be reduced to 10 to 15 clusters or categories for manageable analysis and reporting. The process of pattern-coding and identification of open code groupings in this study remained generally consistent with this recommendation. At the outset of phase seven, a preliminary set of four themes and 18 subthemes had emerged.

This final phase integrated descriptive statistics with findings from qualitative analysis to refine, modify, extend and solidify the subthemes. Given the tradeoffs of depth and breadth associated with this data and number of participants, quantitative strategies afforded opportunity for group comparisons on multiple variables. Previously introduced, the first statistical operations compared sample groups on selected demographic characteristics. As themes and subthemes were refined and reported descriptive statistics were to focused variables and groups relevant to that theme.

Additionally, qualitative pattern codes were reduced and *quantitized* for comparison with other survey responses, related measures of intention, birth history data, and subsequent pregnancy outcomes. Analogous to *qualitizing*, *quantitizing* is the conversion of qualitative data into numerical codes for statistical analysis (Onwuegbuzie & Teddlie, 2003; Sandelowski, 2000b, Sandelowski et al., 2009). The focused statistical operations for variable and group combinations are detailed in Chapter Four, but these included: comparisons of contraceptive method use by pregnancy interest; pregnancy intention/interest and subsequent birth; subsequent birth and birth intervals by opinion toward birth control; prior and future pregnancy intention by group; pregnancy intention by birth order; insurance and finance influence and subsequent birth, insurance coverage and reason uninsured by group; and estimated poverty level by group. While patterns, themes and subthemes were predominantly generated from the PCQual258 sample, previously coded question-specific comments from other participants in the Qual593 sample were reviewed for subtheme development. At close, the integrative analysis process resulted in additional refinement of subthemes, yielding four major themes (unchanged) and 17 subthemes.

Methodological Rigor & Trustworthiness

Lincoln & Guba (1985) described trustworthiness as a basic issue for any researcher, conventional or naturalistic, stating “The basic issue in relation to trustworthiness is simple: How can an inquirer persuade his or her audience (including self) that the findings of an inquiry are worth paying attention to, worth taking account of?” (p. 290). Further, they promulgated trustworthiness as the primary objective of naturalistic researchers and the analog to measures of rigor embraced in conventional

positivist-leaning research (Lincoln & Guba; Patton, 2002). Lincoln & Guba proposed four criteria to support trustworthiness of findings in naturalistic inquiry that have remained durable for almost three decades: credibility, transferability, dependability, and confirmability (Lincoln & Guba; Onwuegbuzie & Teddlie, 2003; Patton). For this study, processes to ensure the credibility and confirmability of the analysis process were emphasized.

Credibility

Achieving credibility is a central and multifaceted concept toward enhancing the trustworthiness of qualitative inquiry (Lincoln & Guba, 1985; Patton, 2002). While multiple strategies may be deployed to promote credibility, Rubin (2000) emphasized that some strategies may not be feasible for a study, and that “the idea is to apply as many as possible and appropriate” (p.175). In this research, strategies included prolonged engagement, persistent observation, and member checking were not possible, where triangulation, peer and mentor debriefing, plus negative case analysis approaches were integrated.

Alternative conclusions and negative case analysis. It is the duty of the investigator to be cognizant of biases and preconceptions during the analysis process, to make them explicit and to seek alternative explanations, with the objective of finding the best fit between the data and findings (Patton, 2002). Articulation of assumptions and preconceptions began in Chapter 2 of this proposal. Throughout the data management and analysis process, the investigator generated process-focused and theoretical memos to articulate impressions, decisions and operational details, as well as conceptual understandings that emerged from the data. These afforded the opportunity to reflect on

preconceptions, biases, orientations, and rival explanations warranting exploration. In addition to credibility, this process supports confirmability of the analysis process. Additionally, the phases of analysis and methodological underpinnings were reported in this chapter.

While the search for negative or disconfirming cases can be integrated with both sampling and analysis processes, application was limited to the analysis process for this study. Expanding the sample in this study was not possible. Throughout analysis, specific attention was afforded to data and expressed thoughts that did not fit with emerging patterns and themes. The breadth of participants available for this study afforded a range of perspectives. In the reporting of themes and subthemes in Chapter Four, as well as discussion in Chapter Five, alternative perspectives are presented to qualify the integrity and limitations of findings, as well as suggest alternatives for additional study.

Triangulation. Patton (2002) summarized four approaches to triangulation that can contribute to the credibility of qualitative findings: methods, sources, analyst, and theory/perspective. Since source triangulation requires the exploration of different temporal or point-of-view perspectives within the same study and method, this is not a feasible alternative in this research (Patton, 2002).

As the *Survey of Recently Pregnant Women* was designed and reported using a quantitative approach, methods triangulation was well suited for this research. Concurrent nested mixed methods share many similarities with concurrent triangulation designs, where the emphasis is the interposition of qualitative and quantities findings in the interpretation phase (Creswell et al., 2003). As patterns and themes developed,

consistencies and inconsistencies with the previously generated qualitative patterns were examined, occasionally leading to the assignment of different pattern codes and the evolution of subthemes. Patton (2002) contended that conflicts should be expected between qualitative and quantitative findings as each approach offers different strengths and weaknesses in exploring a phenomenon, particularly when investigating different questions. Sandelowski (2000a, 2011) contended that the paradigmatic viewing positions of different researchers toward the data will yield different findings. As it did in this study, the comparison of qualitative and quantitative findings can offer the opportunity for divergent viewpoints to arise and be “fruitfully combined to elucidate complementary aspects of the same phenomenon” (Patton, p. 558).

While a process of concurrent review of the all data by multiple investigators was not feasible in this study, triangulation with other analysts was employed. Primarily, this occurred via ongoing engagement and consultation with the researcher’s dissertation chairperson and mentor. The dissertation chair was granted DSHS volunteer status, which allowed her access to individual-level data. Other committee members were engaged for their method and/or topical expertise. Throughout the data analysis process, analytic decisions were reviewed with the chairperson and selected committee members for assessment of process integrity and general concurrence on findings. As a method, qualitative description seeks to achieve findings that are closer to the data and less abstract than other approaches, resulting in greater likelihood of agreement among those viewing the data (Sandelowski, 2000a).

Participants in the OHSU qualitative dissertation seminar were invited to review partial data segments, analytic processes, codes, patterns, and other findings which

occurred at least six times during the analysis phase. This represented one variant of analyst triangulation and an adaptation of Lincoln's & Guba's (1985) technique for peer debriefing. Peer debriefing enhances credibility by exposing data and processes to otherwise disinterested peers, with the intention of opening the analysis process to other perspectives, revealing implicit assumptions, and consideration of alternative approaches (Lincoln & Guba).

Although triangulation of findings with theoretical frameworks was not explicitly anticipated for this research, findings were compared with social-psychological models forwarded by Hoffman and Hoffman (1973) and Fishbein and Ajzen (1975, 2010) in the discussion of results. Patton (2002) described this process as a concrete approach to theory triangulation where various stakeholder perspectives exist regarding a phenomenon. Given the interrelationship between public policy, public funding, and pregnancy-related programs, as well as evidence of pregnancy intention as a multidimensional phenomenon, this was warranted.

Confirmability

Confirmability refers to the relative objectivity of the data and potential for other researchers to achieve concurrence on research findings (Lincoln & Guba, 1985).

Development of an audit trail and assessment of its adequacy are the principle strategies toward achieving confirmability (Lincoln & Guba; Patton, 2002; Polit & Beck, 2004).

Several features supporting an audit trail have already been introduced, including decision logs, reflective journaling, and creation of theoretical memos. Additionally, analyst triangulation with the dissertation chair and peer debriefing on focused analytic processes supported this process and resulted in the evolution of analysis. The

dissertation chairperson provided direct audit oversight for this research and reporting of results.

Documents associated with decision and analysis processes for this research were maintained in audit files. Additionally, the embedded memo and decision-tracking features integrated in ATLAS.ti software were actively employed during the pattern coding process. Audit documentation and decision process review was incorporated in agendas for meetings with the dissertation chairperson, as well as for peer debriefing in qualitative seminar.

Protection of Human Participants

Secondary Analysis and De-identification of Data

This research focused on analysis of existing data, with no new data collected in this study. Data provided to the researcher was pre-transcribed and de-identified. Each participant was linked to a second-generation identification number that could be traced by the researcher to other identifying data or the original participant. The RDA research team pre-screened qualitative comments and removed any identifying data offered by participants prior to release for this study.

Institutional Review Board Approval

Proposals for study were submitted to institutional review boards for Oregon Health and Science University (OHSU), as well as Washington State. OHSU Institutional Review Board returned a determination on July 6, 2011 that this study was not human subjects research (Appendix D). Washington State Institutional Review Board granted exempt status on July 15, 2011 with the condition for RDA to substitute a

second-generation anonymous participant identification number, which was performed prior to data release (Appendix E).

Data Security

Data received for the conduct of this research was protected from loss, theft, or misuse. The researcher stored and protected electronic data in compliance with the Washington State *DSHS-DOH IT Security Exhibit* dated March 25, 2008. Protection of the data included password protection on the researcher's personal workstation(s), portable devices and/or portable media; workstation security processes; secure storage of paper records or portable media in locked files; segregation of research data from other files; plus destruction or return of original data upon completion of the study and any follow-up processes.

CHAPTER 4

Results

This chapter summarizes the results of the study and is organized into four major sections: (1) a description of the total sample and subsamples selected for qualitative analysis, (2) an overview and hierarchal depiction of themes, (3) description of the four major themes and eighteen subthemes, and (4) a summary of how the findings presented in this analysis populate the specific aims of this study.

The purpose of this descriptive, qualitative study is to expand knowledge and understanding of factors and forces that influence sexually active women in their pregnancy decision making, including the initiation and use of contraception if they wish to avoid or delay pregnancy. The results of this research are intended to contribute to the body of knowledge toward informing programs, policies, and future research concerned with unintended pregnancy prevention. Three specific aims provide a framework for approaching analysis. The primary aim of this study is to describe the similarities and differences among women with a recent Medicaid-funded birth, including factors associated with their past and future pregnancy intentions. The second aim is to describe the contraceptive strategies employed by recently pregnant women and any perceived factors that contributed to them becoming pregnant. The third aim is to describe the expressed attitudes of recently pregnant women toward pregnancy, childbearing, and contraception.

Naturalistic inquiry and qualitative description shaped the primary interpretive attitude toward organizing, approaching and analyzing the data in this study. With this interpretive attitude at the forefront, both qualitative and quantitative strategies were

engaged to elicit meaning from the data offered by participants, which included responses to structured survey questions and volunteered comments. Sandelowski (2011) contended that analysis and interpretation is framed as much by the context in which data are viewed than by a specific named method or analysis strategy.

Participant Characteristics: Demographic and Economic Status

With some exceptions, the qualitative subsample groups demonstrated demographic and economic characteristics similar to the total 1292 survey respondents (Table 4.1). Statistically significant variances between subgroups and the broader sample were revealed for maternal age at first birth, marital status, and education attainment. Small discrepancies between the demographic data reported for the total survey respondents in this study and the *TAKE CHARGE Final Evaluation* report can be attributed to different data sources, with this study relying primarily on participant responses to survey questions and the DSHS/RDA team drawing from *First Steps Database* birth certificate data for their comparisons with survey non-respondents and all women who participated in the Medicaid *Pregnancy Medical* program, also referred to as *Program S* or *S Women* (Cawthon et al., 2009).

Participant age in 2005 and at first birth. As depicted in Table 4.1, the average age of survey participants at the time of their 2005 birth was similar to that of all survey participants, although there was an increase in average age for the smaller qualitative subgroups. The average age of the 199 Q54 respondents was 27.13 years versus 26.49 for all survey participants. This finding continued the trend of age increases as sample size decreased. Cawthon and colleagues (2009) reported the average age of survey respondents was 0.5 years older than non-respondents ($p < .05$) and that the average age

of all Medicaid Program S women ages 18 – 44 years who gave birth in Washington State during 2005 was 25.9 years. With the inclusion of women under age 18 years who gave birth in 2005, the average age of all Program S women decreased to 25.7 years (Cawthon et al.). Women aged 20 to 24 years constituted the largest category of respondents across sample groups in this study, followed by those 25 to 29 years old.

At 24.45 years, the average age at first birth for Q54 respondents was a year older than the remaining survey respondents (23.39 yrs, $p < .05$, ES .150), although no significant difference was demonstrated in the categorical model of age distribution. See Table 4.1. Across the study sample groups, between 38% and 43% had their first birth in the 20 to 24-year-old age category. Among the 199 Q54 respondents, 7.0% ($n = 14$) had their first birth at age 35 years or older, including four women who had their first birth above age 40 years. Fourteen (7.0%) women who responded to Q54 had their first birth under age 18 years and 16.1% ($n = 32$) women had their first birth age 18 to 19 years. In comparison, among Washington State women having their first live birth during the four-year period 2002 through 2005, 6.0% of women were under 18 years of age, 11.0% of women were aged 18 to 19 years, and 30.0% were aged 20-24 years (Center for Health Statistics, 2013). In 2006, the average age of mothers experiencing their first birth was 22.7 years for all Medicaid Program S women and the average age for non-Medicaid mothers was 6 years older at 28.6 years (Cawthon, Woodcox & Lyons, 2008). The sampling strategy limiting survey participants to those aged 18 to 44 years may partially account for the higher average age at first birth among survey respondents.

Prior and subsequent births. As seen in Table 4.1, Comparison of prior and subsequent live births revealed very similar patterns between the sample groups, with no

significant differences in means or categorical models. Between 43.7% and 47.0% of women experienced their first live birth in 2005, with 32.4% to 37.2% of participant in sample groups having had one prior birth. Among all survey participants, nine women had between six and eight births by 2005, two of whom were included in the pattern-coded subsample. During the approximately 44-month period between the birth of their child in 2005 and December 2008, about 33% ($n = 424$) of the 1292 respondents experienced one or two subsequent births.

Marital status (2007). Q54 respondents and those included in the PCQual258 subsample were significantly more likely to have reported being married vs. unmarried ($p < .05$) when compared to all survey respondents. Of all survey respondents, 57.4% reported being married or widowed in 2007, whereas 64.8% of those responding to Q54 reported being married or widowed. Cawthon and colleagues (2009) observed that survey respondents reported being married during the 2007 survey at a slightly higher rate than the 56% for this same group derived from 2005 birth certificate data and that this exceeded the 55% reported for all Program S women in 2005. Additionally, 20.8% of all respondents and 19.3% of Q54 respondents reported being unmarried but living with a partner in 2007, suggesting that approximately 78% of all respondents and 84% of Q54 respondents resided in households with 2 adult partners.

Table 4.1

Demographic Characteristics: Comparison of Total Sample and Qualitative Subsamples

| Characteristic | All Respondents | | All Qualitative (Qual593) | | Pattern Coded (PCQual258) | | Q54 Respondents | |
|-----------------------|-----------------|---------|------------------------------|---------|------------------------------|---------|-----------------|---------|
| | <i>n</i> = 1292 | | <i>n</i> = 593 | | <i>n</i> = 258 | | <i>n</i> = 199 | |
| | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) |
| Age in 2005: mean/±SD | 26.49 | SD 5.38 | 26.5 | SD 5.52 | 26.81 | SD 5.57 | 27.13 | SD 5.88 |
| 18-19 | 110 | (8.5) | 52 | (8.8) | 20 | (7.8) | 18 | (9.0) |
| 20-24 | 476 | (36.8) | 217 | (36.6) | 91 | (35.3) | 63 | (31.7) |
| 25-29 | 358 | (27.7) | 158 | (26.6) | 70 | (27.1) | 53 | (26.6) |
| 30-34 | 198 | (15.3) | 90 | (15.2) | 40 | (15.5) | 33 | (16.6) |
| 35-39 | 93 | (7.2) | 47 | (7.9) | 21 | (8.1) | 18 | (9.0) |
| 40-44 | 18 | (1.4) | 9 | (1.5) | 6 | (2.30) | 6 | (3.0) |
| Missing/unknown | 39 | (3.0) | 20 | (3.4) | 10 | (3.9) | 8 | (4.0) |

Table 4.1 *continued*

| Characteristic | All Respondents | | All Qualitative (Qual593) | | Pattern Coded (PCQual258) | | Q54 Respondents | |
|---|-----------------|--------|------------------------------|---------|------------------------------|---------|-----------------|------------|
| | <i>n</i> = 1292 | | <i>n</i> = 593 | | <i>n</i> = 258 | | <i>n</i> = 199 | |
| | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) |
| Age 1 st birth: mean/ \pm SD | 23.56 | SD 5.0 | 23.52 | SD 5.19 | 24.14 | SD 5.58 | 24.45 | SD 5.79 *‡ |
| Under 18 | 80 | (6.2) | 42 | (7.1) | 19 | (7.4) | 14 | (7.0) |
| 18-19 | 230 | (17.8) | 101 | (17.0) | 41 | (15.9) | 32 | (16.1) |
| 20-24 | 556 | (43.0) | 258 | (43.5) | 106 | (41.1) | 76 | (38.2) |
| 25-29 | 248 | (19.2) | 106 | (17.9) | 49 | (19.0) | 40 | (20.1) |
| 30-34 | 88 | (6.8) | 37 | (6.2) | 16 | (6.2) | 15 | (7.5) |
| 35 and older | 50 | (3.9) | 29 | (4.9) | 17 | (6.6) | 14 | (7.0) |
| Missing/unknown | 40 | (3.1) | 20 | (3.4) | 10 | (3.9) | 8 | (4.0) |

Table 4.1 *continued*

| Characteristic | All Respondents | | All Qualitative (Qual593) | | Pattern Coded (PCQual258) | | Q54 Respondents | |
|------------------------------|-----------------|---------|------------------------------|---------|------------------------------|---------|-----------------|---------|
| | <i>n</i> = 1292 | | <i>n</i> = 593 | | <i>n</i> = 258 | | <i>n</i> = 199 | |
| | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) |
| Prior live births (inc 2005) | | | | | | | | |
| Mean/±SD | 1.83 | SD 1.02 | 1.87 | SD 1.06 | 1.84 | SD 1.05 | 1.86 | SD 1.01 |
| 1 | 607 | (47.0) | 273 | (46.0) | 118 | (45.7) | 87 | (43.7) |
| 2 | 419 | (32.4) | 195 | (32.9) | 91 | (35.3) | 74 | (37.2) |
| 3 | 178 | (13.8) | 79 | (13.3) | 32 | (12.4) | 23 | (11.6) |
| 4-5 | 79 | (6.1) | 41 | (6.9) | 15 | (5.8) | 14 | (7.0) |
| 6-8 | 9 | (0.7) | 5 | (0.8) | 2 | (0.8) | 1 | (0.5) |
| Missing/unknown | 0 | | 0 | | 0 | | 0 | |

Table 4.1 *continued*

| Characteristic | All Respondents | | All Qualitative (Qual593) | | Pattern Coded (PCQual258) | | Q54 Respondents | |
|----------------------------|-----------------|--------|------------------------------|--------|------------------------------|---------|-----------------|---------|
| | <i>n</i> = 1292 | | <i>n</i> = 593 | | <i>n</i> = 258 | | <i>n</i> = 199 | |
| | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) |
| Subsequent births to 12/08 | | | | | | | | |
| 0 | 868 | (67.2) | 391 | (65.9) | 171 | (66.3) | 132 | (66.3) |
| 1 | 398 | (30.8) | 190 | (32.0) | 82 | (31.8) | 62 | (31.2) |
| 2 | 26 | (2.0) | 12 | (2.0) | 5 | (1.9) | 5 | (2.5) |
| Marital status | | | | | | Model * | | Model * |
| Married/widowed | 742 | (57.4) | 344 | (58.0) | 166 | (64.3) | 129 | (64.8) |
| Unmarried | 533 | (41.3) | 243 | (41.0) | 90 | (34.9) | 68 | (34.2) |
| Missing/unknown | 17 | (1.3) | 6 | (1.0) | 2 | (0.8) | 2 | (1.0) |

Table 4.1 *continued*

| Characteristic | All Respondents | | All Qualitative (Qual593) | | Pattern Coded (PCQual258) | | Q54 Respondents | |
|-------------------------|-----------------|---------|------------------------------|---------|------------------------------|---------|-----------------|---------|
| | <i>n</i> = 1292 | | <i>n</i> = 593 | | <i>n</i> = 258 | | <i>n</i> = 199 | |
| | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) |
| # Children in household | | | | | | | | |
| Mean/±SD | 2.19 | SD 1.23 | 2.17 | SD 1.24 | 2.18 | SD 1.22 | 2.20 | SD 1.14 |
| 1 | 436 | (33.7) | 199 | (33.6) | 82 | (31.8) | 58 | (29.1) |
| 2 | 431 | (33.4) | 207 | (34.9) | 96 | (37.2) | 78 | (39.2) |
| 3 | 249 | (19.3) | 106 | (17.9) | 38 | (14.7) | 28 | (14.1) |
| 4 | 99 | (7.7) | 44 | (7.4) | 25 | (9.7) | 19 | (9.5) |
| 5 | 41 | (3.2) | 20 | (3.4) | 9 | (3.5) | 9 | (4.5) |
| 6-10 | 21 | (1.6) | 9 | (1.5) | 2 | (0.8) | 1 | (0.5) |
| Missing/unknown | 15 | (1.2) | 8 | (1.3) | 6 | (2.3) | 6 | (3.0) |

Table 4.1 *continued*

| Characteristic | All Respondents | | All Qualitative (Qual593) | | Pattern Coded (PCQual258) | | Q54 Respondents | |
|--------------------------|-----------------|--------|------------------------------|--------|------------------------------|--------|-----------------|--------|
| | <i>n</i> = 1292 | | <i>n</i> = 593 | | <i>n</i> = 258 | | <i>n</i> = 199 | |
| | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) |
| Household income / month | | | | | | | | |
| \$500 or less | 51 | (3.9) | 24 | (4.0) | 13 | (5.0) | 9 | (4.5) |
| \$501-999 | 95 | (7.4) | 42 | (7.1) | 12 | (4.7) | 9 | (4.5) |
| \$1,000-1,499 | 187 | (14.5) | 93 | (15.7) | 38 | (14.7) | 28 | (14.1) |
| \$1,500-1,999 | 204 | (15.8) | 98 | (16.5) | 33 | (12.8) | 28 | (14.1) |
| \$2,000-2,499 | 248 | (19.2) | 111 | (18.7) | 50 | (19.4) | 35 | (17.6) |
| \$2,500-2,999 | 167 | (12.9) | 76 | (12.8) | 39 | (15.1) | 26 | (13.1) |
| \$3,000-3,499 | 129 | (10.0) | 59 | (9.9) | 24 | (9.3) | 23 | (11.6) |
| \$3,500 or more | 146 | (11.3) | 58 | (9.8) | 34 | (13.2) | 30 | (15.1) |
| Missing/unknown | 65 | (5.0) | 32 | (5.4) | 15 | (5.8) | 11 | (5.5) |

Table 4.1 *continued*

| Characteristic | All Respondents | | All Qualitative (Qual593) | | Pattern Coded (PCQual258) | | Q54 Respondents | |
|------------------------|-----------------|--------|------------------------------|--------|------------------------------|--------|-----------------|--------|
| | <i>n</i> = 1292 | | <i>n</i> = 593 | | <i>n</i> = 258 | | <i>n</i> = 199 | |
| | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) |
| Race/ethnicity | | | | | | | | |
| White | 897 | (69.4) | 421 | (71.0) | 190 | (73.6) | 146 | (73.4) |
| Hispanic | 210 | (16.3) | 92 | (15.5) | 40 | (15.5) | 32 | (16.1) |
| African American | 31 | (2.4) | 10 | (1.7) | 2 | (0.8) | 1 | (0.5) |
| Asian/Pacific Islander | 48 | (3.7) | 19 | (3.2) | 7 | (2.7) | 6 | (3.0) |
| Native American | 14 | (1.1) | 7 | (1.2) | 1 | (0.4) | 1 | (0.5) |
| More than one race | 47 | (3.6) | 19 | (3.2) | 7 | (2.7) | 5 | (2.5) |
| Other /unknown | 45 | (3.5) | 25 | (4.2) | 11 | (4.3) | 8 | (4.0) |

Table 4.1 *continued*

| Characteristic | All Respondents | | All Qualitative (Qual593) | | Pattern Coded (PCQual258) | | Q54 Respondents | |
|------------------------|-----------------|--------|------------------------------|--------|------------------------------|----------|-----------------|----------|
| | <i>n</i> = 1292 | | <i>n</i> = 593 | | <i>n</i> = 258 | | <i>n</i> = 199 | |
| | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) |
| Education | | | | | | Model ** | | Model ** |
| No high school diploma | 161 | (12.5) | 76 | (12.8) | 28 | (10.9) | 20 | (10.1) |
| HS diploma/GED | 375 | (29.0) | 167 | (28.2) | 54 | (20.9) | 41 | (20.6) |
| Some College or AA/AS | 576 | (44.6) | 268 | (45.2) | 135 | (52.3) | 107 | (53.8) |
| BA/BS Degree or more | 153 | (11.8) | 69 | (11.6) | 43 | (13.2) | 26 | (13.1) |
| Missing/unknown | 27 | (2.1) | 13 | (2.2) | 7 | (2.7) | 5 | (2.5) |

Note: Each qualitative subgroup is a subset of participants in all groups to the left. Independent samples t-tests performed for scale variables *Age 2005*, *Age 1st birth*, *Prior live births*, and *#Children in Household*. Pearson chi-square conducted for categorical variable models between qualitative subgroups and the residual number of all respondents.

* $p < .05$, ** $p < .01$, † ES = .150

Children in Household (2007). Survey respondents reported either one or two children residing in the household in 2007 at almost 34% each. This finding is generally congruent with 47% of all participants who experienced their first birth in 2005 and the 32.8% who had subsequent births. While not significantly different from all survey respondents in the scale or categorical models, participants in the smaller qualitative subsamples reported a higher portion of households with two children verses one. With similar distribution across all the samples, approximately 5% of women reported 5 or more children in their household. See Table 4.1.

Given that 78 to 84% of participants reported being married or in a domestic partner relationship and that 66 to 70% of participants reported two or more children in the household, it can be estimated that approximately 55% of households had four or more members. This offers a point of reference when examining reported household income and is subsequently developed in the subtheme *Chronic Financial Stress*.

Household Income. Participants were asked to estimate their monthly household income among the categories listed in Table 4.1, which may leave the information in this section more vulnerable to reporting variability than other areas. No significant difference was revealed between the total sample and qualitative subgroups in the categorical modeling. The household income category of \$2000 - \$2,499 per month represented the median and mode reported by participants across all sample groups, with \$1,500 - \$1,999 per month and \$1,000 - \$1,499 per month the next most commonly reported income categories among all respondents. The PCQual258 and Q54 qualitative subsamples approximated this pattern but also demonstrated more variability between categories and somewhat greater distribution into the upper income categories. Among

the women who responded to Q54, 15.1% reported monthly household income at \$3,500 or more. Across sample groups, 60.8% of respondents reported household income below \$2,500 per month as did 56.6% of the PCQual258 subsample and 54.8% of Q54 respondents. For 2007, the US Department of Health and Human Services reported the poverty threshold for a family of four as an income of \$20,650 per year or \$1,721 per month.

Race and Ethnicity. There was no significant difference in the distribution of race and ethnicity across sample groups, although a slightly higher percentage of white participants were represented in the qualitative PCQual258 and Q54 respondent subsamples. Following the pattern in the *TAKE CHARGE Final Evaluation* report, Hispanic ethnicity was not reported separately, but combined with race reporting and afforded reporting priority over other race categories, substituting for other races reported by participants. While the survey followed the convention for collecting Hispanic ethnicity and race data separately, this process appeared to create confusion among many participants. Some variation of “Hispanic” or “Mexican” was added as *other* responses to the race question by 104 participants, and these participants constituted a large number of the volunteered comments filtered during the sample reduction process in this study. Also, the survey question inquiring about race yielded some commentary volunteered from participants including “Why should it matter?,” “I do not feel this question is important,” “No one is really white,” and “Human”.

Congruent with statewide data, participants reporting that they were white constituted the largest portion of the samples, at 69.4% to 73.6%. Hispanic ethnicity and white race was the largest combination, reducing the overall portion of each sample

categorized as white. During the aggregation of raw data, it was noteworthy to observe the shift in counts among those reporting to be Native American. Among all survey participants, the end count of Native Americans was 14 (1.1%). This subgroup began at 58 (about 4%), but progressively was subsumed in the multi-racial and Hispanic categories. In their analysis, Cawthon and colleagues (2009) observed a significant difference in race distribution between survey respondents, non-respondents, and the 2005 population of all Program S women, with survey respondents containing a higher portion of those being white, and lower portions of Asian/Pacific Islander and African American races.

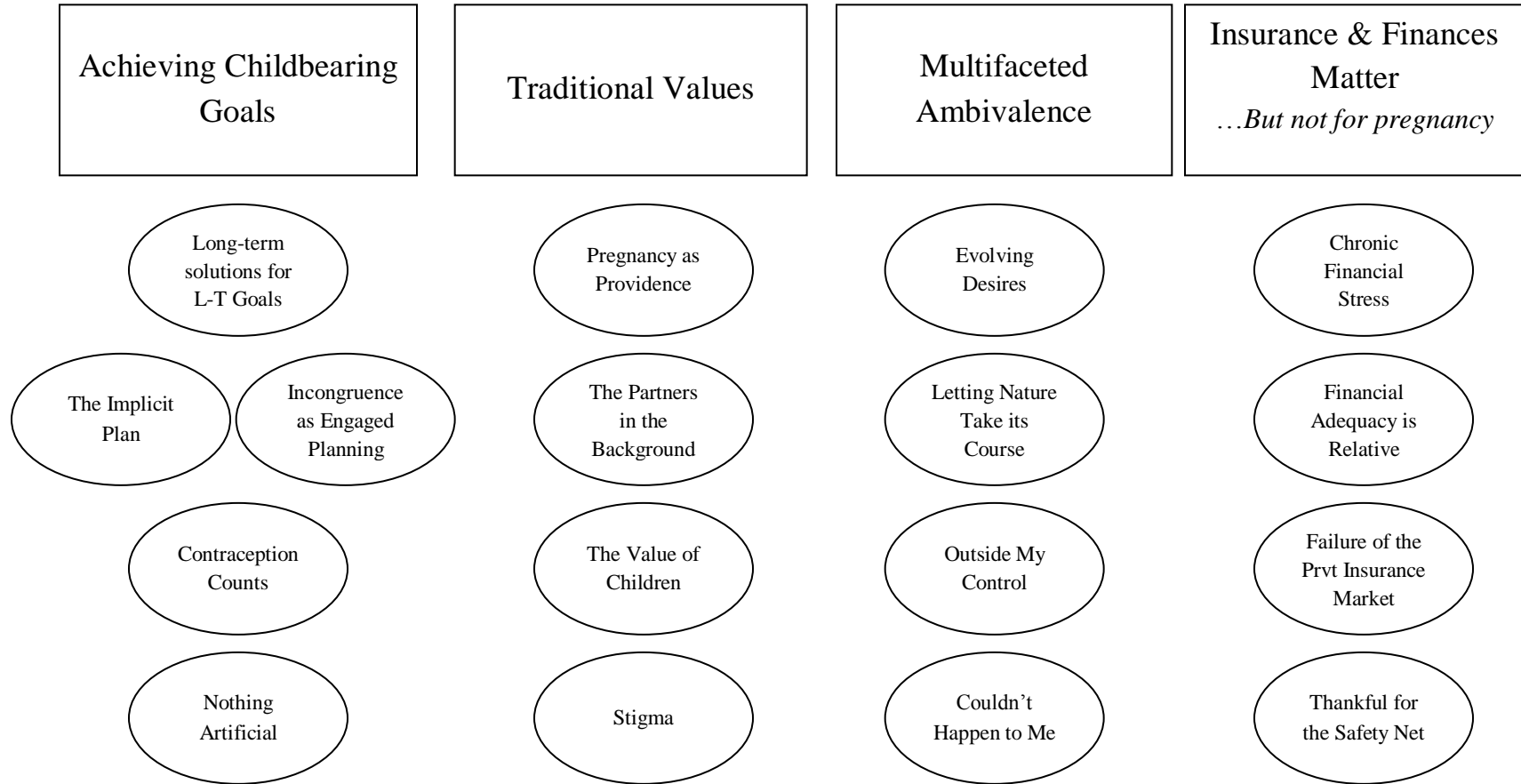
Education Attainment. A statistically significant difference in education attainment was observed between all survey respondents and those in the PCQual258 and Q54 qualitative subsamples, with the latter reporting greater education attainment. As seen in Table 4.1, when compared to all survey respondents, a smaller portion of those in the qualitative subsamples reported their education attainment ending with a high school diploma or GED and a larger portion reported continuing their education to complete some college, possibly including an associate's degree. About 13% of those in the qualitative subsamples reported attaining a bachelors or higher degree, slightly above that of the remaining survey respondents, and only 10% had not completed high school. When compared to all 2005 Program S women and non-respondents, survey participants demonstrated higher education attainment (Cawthon et al., 2009).

Region. While raw data on geographic distribution of participants was not available for this study, the DSHS/RDA study team differentiated all participants into three general regions of Washington State: King County (most populous), all other

Western Washington counties, and Eastern Washington (Cawthon et al., 2009). See Appendix B. Accordingly, 18.3% of all survey respondents (N = 1292) resided in King County, with 47.7% in the rest of Western Washington and 34% of respondents from Eastern Washington (Cawthon et al.). Compared to all 2005 Program S women and non-respondents, there was a higher portion of respondents representing Eastern Washington and a lower percentage from King County (Cawthon et al.).

Figure 4.1. *Qualitative Themes*

Themes & Subthemes



Qualitative Themes: Introduction and Overview

This section introduces and provides an overview of the patterns and themes that emerged from this study's naturalistic viewing position. As introduced in Chapter 3, qualitative description and conventional qualitative content analysis provided the methodological framework for approaching the data in this study. In contrast to the preceding sample description section, this section places emphasis on analysis of the volunteered comments by survey participants. However, this analysis process merges volunteered comments with transformed (qualitized) survey responses as well as focused descriptive statistics in the generation and support of themes.

Among the sample groups previously described, this portion of the analysis focused on those in the PCQual258 subsample ($n = 258$), which included all Q54 respondents ($n = 199$). As the PCQual258 sample included participants who offered more depth in their responses and/or had their responses coupled with transformed data, analysis emphasis was purposefully placed on this group. The additional participants ($n = 335$) who constituted the remainder of the Qual593 subsample received question-specific coding and analysis, limited to the context of the question with which their comment was associated. Most commonly, responses from these participants augmented themes which emerged from the PCQual258 participants but, in some cases, provided key support for a unique subtheme.

Analysis yielded four major themes and seventeen subthemes, which are displayed in Figure 4.1. The major themes include (1) Achieving childbearing goals, (2) Traditional values, (3) Multifaceted ambivalence, and (4) Insurance and finances matter...but not for pregnancy. Subthemes that extended the major themes include: (1.1)

Long-term solutions for long-term goals, (1.2) The implicit plan, (1.3) Incongruence as engaged planning, (1.4) Contraception counts, and (1.5) Nothing artificial; (2.1) Pregnancy as providence, (2.2) The partners in the background, (2.3) The value of children, and (2.4) Stigma; (3.1) Evolving desires, (3.2) Letting nature take its course, (3.3) Outside my control, and (3.4) Couldn't happen to me; and (4.1) Chronic financial stress, (4.2) Financial adequacy is relative, (4.3) Failure of the private insurance market, and (4.4) Thankful for the safety net...but with gaps. These themes and subthemes are developed sequentially in the subsequent sections. Please note that all participant quotes in this chapter are reproduced as written by the respondent, without editing of their spelling or grammar.

Theme 1: Achieving Childbearing Goals

Across the four major themes of this study, *Achieving childbearing goals* was among the most pronounced. As previously described, qualitative codes were formulated that reflected patterns across a participant's transformed survey responses and the additional comments that they volunteered, as well as birth history information. Of the 258 respondents in the sample selected for pattern-coding, 41.5% (107) responded that they had the number of children in their household that they hoped to have and 31.8% (82) of these women revealed through their pattern of responses that they had met their goals for the number of children desired. Typically, the *met childbearing goals* code corresponded to women who indicated that the number of children they had was equal to the number that they desired, that they would be pleased or would not care if they did not have any more children, and expressed that they did not want to become pregnant in the next year. While this will be expanded in a sub-theme, these participants commonly

reported the use of a higher efficacy birth control method (Table 4.2) or surgical sterilization of herself or her partner. One participant, who was almost 34 years of age at the time of the survey commented on her active process for achieving pregnancy as well as her childbearing coming to closure:

I was infertile for the first 8 years of my marriage. I had fertility treatments and surgeries to get pregnant. Each pregnancy was planned and wanted. Due to health issues I had a hysterectomy after my 4th child born (date).

While most participants who reported surgical sterilization suggested that their process was elective, some - like the woman above - commented about medical reasons that may have prematurely ended their childbearing potential. Between her most recent births, this participant had inter-birth intervals of under 18 months.

Thirty-seven women (14.3%) were assigned the *meeting childbearing goals* code, which always included women who reported being pregnant at the time of the survey or had given birth within two months preceding the survey period. These women offered a wide variety of responses to questions inquiring about their future pregnancy intention, contraception use, and number of children desired, as their current pregnancy likely created a confounder to those questions. A 26-year-old participant, pregnant with her second child, described this situation as follows:

Just letting you know I am currently pregnant so that sways some of my answers.

Like given birth how many times, its only once so far but is going to be twice.

And the questions about happy or not of having more children, its confusing if you are pregnant while taking the quiz.

Another participant who was 31 years old and pregnant with her second child was more specific in her comment “am currently pregnant already and don't want to be pregnant twice in the year!”

While 14 of the 258 women, including three of those with a current/recent pregnancy, offered comments suggesting that their pregnancy was unintended, none made overt comments indicating that it was unwanted or that they were unhappy about their pregnancy. To the contrary, currently pregnant women were more likely to volunteer favorable comments such as this 25-year-old woman pregnant with her third child: “I am and not upset”. Another currently pregnant participant, a 27 year old woman pregnant with her third child offered insight into her plans to bring childbearing to a close: “I am pregnant and will get tubes tied after this baby.”

Participants who were assigned the pattern codes of *met childbearing goals* and *meeting childbearing goals* were compared to those not assigned these codes for any births that occurred after the survey. The selected time frame was between 32 months following the woman's 2005 birth and the end of the data collection period, approximately November/December 2007 through December 2008. Month 32 was selected to capture participants who may have been in early (unconfirmed) pregnancy at the time of the survey as well as those who may have had preterm births. Of the 258 women, there was only one subsequent birth among the 82 women assigned the *met childbearing goals* pattern code in contrast to 25 births among the 176 women not assigned that code ($X^2, 1 = 10.41, p < .01, OR = .075$). As anticipated, there was no significant difference in subsequent births between women assigned the *meeting childbearing goals* code and the remainder of the sample, where 5 of 37 (13.5%) women

assigned the code experienced a subsequent birth compared to 21 births (9.5%) among the 221 women in the sample not assigned that code.

At the time of the survey, 50% ($n = 129$) of the 258 women indicated that they had fewer children in the household than they hoped to have some day. Many of the currently-pregnant women were included in this set as well as 36 women who expressed desire for additional children and reported either using no birth control or a less-effective method (Table 4.2). A 34 year old woman, who reported the approaching birth of her fifth child at the time of the survey and expressed a desire for six children, offered the following comment:

My husband and I have been married for 14 years. We're both happy to be having our 5th child this spring. We choose the spacing of our children based on the need level of the children already in our family and somewhat on finances. Our children are 3.5, 2.5, 4, and now 2 years apart respectively. Some of us just LIKE children and want large families.

Twenty six participants who expressed a desire for additional children presented incongruent response patterns, combining expressions of desire for more children with reported use of more effective birth control methods or being sterile. These situations will be explored further in the subthemes of *incongruence as engaged planning* and *outside control*. The other women whose responses coded as desiring additional children were among the 51 participants who populated one of the four ambivalence patterns. These will be developed within the theme *multifaceted ambivalence*.

Table 4.2

Birth Control Methods by Type and Relative Effectiveness: All Pattern-Coded Participants and by Future Pregnancy Intention

| Birth Control Method | Pattern Coded | | Desire | | Avoid | | Ambivalent | | Other/Pregnant | |
|-------------------------------|----------------|--------|---------------|-------|----------------|--------|---------------|-------|----------------|-------|
| | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) |
| | <i>n</i> = 258 | | <i>n</i> = 59 | | <i>n</i> = 158 | | <i>n</i> = 27 | | <i>n</i> = 14 | |
| <i>More effective methods</i> | | | | | | | | | | |
| Male sterilization | 19 | (7.4) | 1 | (0.4) | 18 | (7.0) | 0 | (0.0) | 0 | (0.0) |
| Female sterilization | 31 | (12.0) | 3 | (1.2) | 26 | (10.1) | 2 | (0.8) | 0 | (0.0) |
| Hormone implant | 0 | (0.0) | 0 | (0.0) | 0 | (0.0) | 0 | (0.0) | 0 | (0.0) |
| Intrauterine device (IUD) | 38 | (14.7) | 8 | (3.1) | 28 | (10.9) | 2 | (0.8) | 0 | (0.0) |
| Hormone injection | 9 | (3.5) | 3 | (1.2) | 6 | (2.3) | 0 | (0.0) | 0 | (0.0) |
| Vaginal ring | 8 | (3.1) | 3 | (1.2) | 4 | (1.6) | 1 | (0.4) | 0 | (0.0) |
| Transdermal Patch | 3 | (1.2) | 2 | (0.8) | 1 | (0.4) | 0 | (0.0) | 0 | (0.0) |
| Birth control pills | 31 | (12.0) | 7 | (2.7) | 20 | (7.8) | 2 | (0.8) | 2 | (0.8) |

Table 4.2 *continued*

| | Pattern Coded | | Desire | | Avoid | | Ambivalent | | Other/Pregnant | |
|----------------------------|----------------|--------|---------------|-------|----------------|--------|---------------|-------|----------------|-------|
| Birth Control Method | <i>n</i> = 258 | | <i>n</i> = 59 | | <i>n</i> = 158 | | <i>n</i> = 27 | | <i>n</i> = 14 | |
| | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) |
| Less effective methods | | | | | | | | | | |
| Condom, male | 46 | (17.8) | 9 | (3.5) | | (11.6) | 5 | (1.9) | 2 | (0.8) |
| Condom, female | 3 | (1.2) | 1 | (0.4) | 2 | (0.8) | 0 | (0.0) | 0 | (0.0) |
| Diaphragm, Cervical cap | 0 | (0.0) | 0 | (0.0) | 0 | (0.0) | 0 | (0.0) | 0 | (0.0) |
| Emergency Contraception | 3 | (1.2) | 1 | (0.4) | 2 | (0.8) | 0 | (0.0) | 0 | (0.0) |
| Natural Family Planning | 17 | (6.6) | 9 | (3.5) | 6 | (2.3) | 2 | (0.8) | 0 | (0.0) |
| Withdrawal | 37 | (14.3) | 13 | (5.0) | 18 | (7.0) | 6 | (2.3) | 0 | (0.0) |
| Spermicidal foam/gel/cream | 2 | (0.8) | 0 | (0.0) | 1 | (0.4) | 1 | (0.4) | 0 | (0.0) |
| No Sex, abstinence | 24 | (9.3) | 3 | (1.2) | 20 | (7.8) | 1 | (0.4) | 0 | (0.0) |
| None | 34 | (13.2) | 12 | (4.7) | 10 | (3.9) | 8 | (3.1) | 4 | (1.6) |

Table 4.2 *continued*

| | Pattern Coded | | Desire | | Avoid | | Ambivalent | | |
|-----------------------------------|----------------|--------|----------------------|--------|----------------------|--------|----------------------|-------|-----------|
| Method Class by Intention Pattern | <i>n</i> = 231 | | <i>n</i> = 54 (23.4) | | <i>n</i> = 151(65.4) | | <i>n</i> = 26 (11.3) | | |
| | <i>n</i> | % | <i>n</i> | % | <i>n</i> | % | <i>n</i> | % | |
| More effective | 134 | (58.0) | 24 | (10.4) | 103 | (44.6) | 7 | (3.0) | Model *** |
| Less effective | 52 | (22.5) | 17 | (7.4) | 24 | (10.4) | 11 | (4.8) | |
| No sex | 15 | (6.5) | 1 | (0.4) | 14 | (6.1) | 0 | (0.0) | |
| None | 30 | (13.0) | 12 | (5.2) | 10 | (4.3) | 8 | (3.5) | |

Note: Counts and percentages of individual birth control methods will exceed 258 and 100% as participants could select more than one method. For the categorical model, individuals were assigned to only one method class based on the most clinically effective method selected and to only one intention pattern, with *other* for each classification excluded from the model. In the final categorical model, *no sex* was combined with *less effective*, but separate distributions are displayed in the table. More and less effective birth control methods are listed in order of efficacy from most effective to less effective. In typical use, couples using more effective methods have less than 10% rate of unintended pregnancy in one year (Trussell, 2011). Less effective methods have one-year pregnancy rates between 15% and 29% (Trussell). Emergency contraceptive pills can reduce the risk of pregnancy by 75% when taken within 72 hours of unprotected intercourse (Trussell, 2007).

*** $X^2_{4} = 26.043$, $p < .001$

Subtheme 1.1: Long-Term Solutions for Long-Term Goals

Women who indicated that they had met their childbearing goals were not only more likely to report using a more effective method of birth control, but commonly reported use of long-term, high-efficacy contraception, such as sterilization and intrauterine device (Table 4.2). Among the 158 women whose response patterns suggested that they wished to avoid pregnancy in the upcoming year or long-term, 38% ($n = 60$) reported use of a more effective contraceptive method and 33% ($n = 52$) reported male or female sterilization. The remaining 46 women (29%, $n = 46$) who wanted to avoid pregnancy in the next year or beyond populated one of the three *incongruent* patterns, with 13% ($n = 6$) reporting no birth control method, over half (52%, $n = 24$) using a less effective method and 35% ($n = 16$) being assigned the *avoid but vulnerable* pattern code. Women in this latter pattern were often nearing the end of a subsequent pregnancy or were in their early post-partum period, did not report an established history of birth control use and/or indicated “no sex” as their contraceptive method. Some others who reported “no sex” indicated that they wanted more children and did not have a current domestic partner, but wanted to avoid pregnancy in the next year. While the 14 of the 15 participants who indicated “no sex” as their birth control method wanted to avoid pregnancy in the next year, three (20%) had a subsequent birth recorded in the 8 to 20 month period following the survey. This rate approximated the 20.6% rate of subsequent birth for women who selected “none” for birth control. These incongruent patterns will be explored in later sections.

Most participants indicated their birth control method without further elaboration, but a small number of participants did volunteer comments. One participant who was 32

years old at the time of the survey, had three births and reported the four children in her household were what she desired; she offered one example of using an extended-duration, high-efficacy method to prevent pregnancy:

My children are ages (ages) all boys. My finance came into our relationship with 3 grown sons and 1 stepson who still calls him dad. So all together 8 sons. We were hoping our son born in 2005 would've been a girl... We believe we were not meant to have a daughter. We are hoping the IUD will keep us from conceiving. 2 years, so far it's working! Thanks.

Another woman, who was 27 years of age at the time of the survey and also using a IUD for contraception, reported having two children, being married, and having desire for four children. She elaborated that she would be a “little upset” if she became pregnant in the next year and appeared to be balancing her childbearing with other life goals:

Take Charge & DSHS Medicaid helped me go through college & law school with insurance for myself (when pregnant) & my two girls, now, I am a practicing attorney and am more than happy to pay taxes to support social programs.

Additionally, this participant had no subsequent pregnancies recorded through the December 2008 data collection period.

Another participant, a 24-year-old woman with one child, unmarried but living with a partner and who expressed desire to have a second child, but not in the next year, suggested the reason behind her currently using a IUD: “When I got pregnant with my daughter I was on the pill. (Ortho Novum) I took it every day at the same time.”

While women using reversible methods of birth control infrequently elaborated on their choice of method or reason, those who elected surgical sterilization more commonly offered remarks linking this decision to their childbearing goals. Several were short, clarifying comments referring to their method of sterilization or their pregnancy intention similar to “Tubes tied at childbirth!” and “We’re done”. Others offered brief comments about their male partner’s sterilization including “partner is fixed” or, as a 37 year old respondent volunteered “I don't have to worry about getting pregnant my husband got fixed. Thanks.” While offered the opportunity to select male or female sterilization as a response, some participants who indicated sterilization elsewhere in the survey offered comments suggesting that they did not perceive sterilization as a birth control method: “No - N/A,” “don’t need,” and “None, we did not use any method”. Additionally, these responses contributed the mismatch between numerical counts of sterilization in Table 4.2 and participants assigned a *sterile* qualitative pattern code.

Several participants volunteered comments describing explicit connections between achieving their childbearing goals and pursuing elective sterilization. A 26-year-old woman who had her second child twelve months following her 2005 birth described the connection in this way: “wanted to get pregnant and now have a 2nd child and my tubes are tied now.” Another 37-year-old woman with four children spaced 24 or more months apart shared a similar comment:

We were aware of the family planning assistance, and we did receive assistance for my husband's vasectomy. We appreciated this option since being done giving birth. So we tended to use the over the counter method. I felt that my doctor and

the DSHS services were very clear about the availability of birth control options and services to help with the cost.

A 27 year old participant, who reported being married and having two children, was less explicit about her goals, but reflected briefly on motherhood:

I thank you for this and the \$5 you sent. I will spend it on a pair of pants for my boys. However I will be having no more kids. I have had my tubes tied. I enjoy being a mother, even with its trying times. Thank you.

Some participants who indicated that they had achieved the number of children that they wanted also revealed other factors, such as health, that may have influenced their decision- making. The sub-theme *outside control* will explore situations where participants revealed that they may have needed to end their childbearing earlier than desired. However, a 43-year-old woman who had her first birth at age 35 years, shared:

I am very happy with my two daughters. I have two daughters and with them I am very happy because first of all I was already operated on because I suffer from high blood pressure and it is better this way so as to not put my baby or my life in danger. I am very happy this way, thank God.

While almost all participants indicated in some way that their pregnancies and children were wanted, some offered comments about their pregnancies being unplanned or that they were making other efforts to prevent pregnancy prior to seeking sterilization. A 32-year-old with five children volunteered “I had appointment to get my tubes tied but found out I was pregnant.” Another 29-year-old with two children suggested a different timing mismatch:

I am preg now, due May __. I did not plan preg. I'm getting married June __ -- I have Molina Healthy Options as a secondary (Don't use it) I just need it once I go on STD since I won't have benefits available. My fiance has did a vasectomy Sept. __. (I was already preg. but not aware).

Other participants revealed situations that would be classified as birth control method failures prior to seeking sterilization...some remarkable. A 28-year-old participant with four, children, including a birth after her 2005 child, volunteered:

My husband had a vasectomy after our baby was born in 2005. After the doctor said it worked we became pregnant again and later learned the vasectomy didn't work. He got the vasectomy through the Take Charge program.

Her survey responses indicated that they had added condoms and withdrawal to augment her husband's sterilization. Another 24 year old woman with three children, including a subsequent birth, responded to the 2005 intention question as "I was trying to keep from getting pregnant, but not trying very hard", yet she offered a comment suggesting failure of a highly effective contraceptive method:

I was on birth control the last two time that I was pregnant. My daughter born in 05, she was Depo Provera and my son in 06 was the same. Now I have my tubes tied or as they say clamped so hopefully this method will for sure work. Thank you for giving me the opportunity to share my thoughts.

Among the PCQual258 participants, male sterilization constituted 38% ($n = 19$) of the 50 women reporting sterilization as their birth control method. However, a few women expressed concern over perceived disparity and barriers to access this method, such as this 30 year old woman with 3 children described:

We were disappointed that Take Charge did not cover male sterilization which is so much easier and less costly than female. Perhaps you assume that because I am lower income that my marriage will not last and I'll become pregnant from another source. Sad. I birthed three babies and do not deserve a fourth trauma when my husband can do such a simple outpatient procedure. What happened to equality?

Subtheme 1.2: The Implicit Plan

Almost all conventional definitions and measures of pregnancy intention assume that this is a conscious decision process, but researchers have recognized many hurdles in capturing the plethora of emotional, psychological, and cognitive processes relating to the desirability of a specific pregnancy (Santelli, Rochat, Hatfield-Timajchy, Gilbert, Curtis, et al., 2003). This study is similarly challenged.

The core survey questions asked participants to retrospectively reflect upon their intention when they became pregnant for their child born in 2005 as well as asked several questions exploring actions, desires, and feelings toward future childbearing, with specific focus on the next year. Many participants had already experienced a subsequent birth by the time of the survey and others were pregnant at the time of the survey. Of the 1292 survey participants, 11.7% ($n = 152$) had a subsequent birth recorded within two years of their 2005 child, plus 10.7% ($n = 138$) reported being pregnant at the time of the survey. As previously introduced, being currently pregnant appeared to present a confounder to participants' responses regarding future pregnancy.

Beyond their prompted responses to the survey questions, comparatively few participants volunteered explicit comments regarding their pregnancy and childbearing

planning processes. Instead, they tended to share more general comments about their desire to have or avoid more children. Some notable exceptions to this will be developed under the next subtheme, *incongruence as engaged planning*. A few participants did offer specific comments regarding their planning process and revealed congruence between their expressed desires and actions, including this 28-year-old woman who was married and had one child at the time of the survey:

I received family planning counseling and birth control with my "family planning only - Medicaid" for the 1st year after my son was born. When that expired I applied for Take Charge and have been receiving birth control from the _____ (for the past 22 months). ... The Nuva Ring has been great, I have had minimal side effects and have had no problem remembering to use it correctly. ... My husband and I do want to have a second baby, however, we want to plan this time and wait until we have good health insurance and a steady income. Having access to this birth control is making it possible for us to wait until we are ready. Thank you.

This participant had no subsequent births recorded as of December 2008 and her comment supported one of the planning pattern codes of *balancing priorities* as well as expressing thankfulness for access to safety net services for contraception. Another woman who was almost 24 years old at the time of the survey, did not reveal much about her planning and intentions toward childbearing. Nonetheless she did suggest that contraception played a part in her goals:

I think the take charge program is very good program I've been on the program for a long time. This is my 2nd time getting on it.

Her only child was born in 2005 and she had no subsequent births recorded as of December 2008. She reported using birth control pills as her method, “strongly agreed” with the use of birth control for pregnancy planning, was not living with a domestic partner or ever married, and reported only desiring one child.

While it was infrequent for participants to volunteer explicit descriptions about their planning processes, those who expressed desire toward childbearing in the near future were more likely to achieve that result (Table 4.3). Participants who responded to the survey question (Q36) asking about what they hoped to have happen regarding pregnancy in the subsequent twelve months were reduced to three categories; “wanting to get pregnant”, “don’t care” and “don’t want to get pregnant.” These categories were examined in relation to subsequent births that occurred approximately 32 to 45 months after the birth of their 2005 child, or approximately 8 to 21 months after they completed the survey. Despite the relatively short data window, those who responded that they wanted or “kind of” wanted to get pregnant in the twelve months following the survey were significantly more likely to experience a subsequent birth than those who reported that they “did not” or “really did not” wish to become pregnant. Similarly, participants who populated the combined qualitative pattern codes of *desire* and *ambivalent* demonstrated a greater likelihood for experiencing subsequent birth when compared to those assigned the *avoid* code ($X^2, 1 = 11.58, p < .01, OR = 4.08$).

Table 4.3

Future Pregnancy Intention and Subsequent Birth

| Future Pregnancy Intention | All Respondents | | All Qualitative (Qual593) | | Pattern Coded (PCQual258) | |
|-----------------------------|------------------|--------|------------------------------|--------|------------------------------|--------|
| | <i>n</i> = 1119 | | <i>n</i> = 498 | | <i>n</i> = 219 | |
| | Subsequent Birth | | | | | |
| | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) |
| Next 12 months (Q36) | Model *** | | Model *** | | Model ** † | |
| Want to get pregnant | 74 / 194 | (38.1) | 24 / 83 | (28.9) | 10 / 46 | (21.7) |
| Don't care | 17 / 82 | (20.7) | 7 / 36 | (19.4) | 4 / 17 | (23.5) |
| Do not want to get pregnant | 57 / 843 | (6.8) | 28 / 379 | (7.4) | 9 / 156 | (5.8) |
| Pattern Code Categories | | | | | <i>n</i> = 244 | |
| | | | | | Model ** | |
| Desire | - | - | - | - | 13 / 59 | (22.0) |
| Ambivalent | - | - | - | - | 4 / 27 | (14.8) |
| Avoid | - | - | - | - | 9 / 158 | (5.7) |

Table 4.3 *continued*

Note: Samples exclude non-respondents as well as participants who reported that they were pregnant at the time of the survey. Subsequent births are limited to those recorded between approximately 8 months and 21 months following survey completion. Counts and percentages represent the total number of participants with subsequent births among all participants in that intention category.

** $p < .01$, *** $p < .001$, † Two cells (33.3%) in this model had expected cell counts less than five.

Like the participant introduced previously in this section, some women did offer comments revealing that they were balancing their childbearing interests with other priorities or were taking into consideration the timing or spacing of their childbearing. Nine participants were assigned the planning code of *balancing priorities* and twelve were assigned the code of *timing-spacing*, including one participant who was assigned both. One participant, a 28 years old and married with one child but desiring two, indicated that she did not want to get pregnant in the next year and added the single word comment “financial” followed later by an insurance-related comment “Mini Med -- not good/ haven't used” . Most participants who appeared to be balancing priorities volunteered only brief comments, However, they frequently displayed a pattern where they desired more children, but not in the next twelve months. Additionally, they reported using a more effective birth control method, and indicated that insurance and finances mattered “a lot” in decision making. Another participant, 27 years old and married with three children but desiring four, was more explicit about balancing financial and other priorities:

We have chosen to enroll our children in a private Christian school. We did this for many reasons but largely to avoid all the crap in the public schools around us. The expense of this prevents adding a family on my husbands work ins. The work ins is almost as much as our mortgage so the kids are all insured through Medicare but I am not. Upon pregnancy we will have to revise this situation. My husband has coverage at work and is also diabetic so that another expense along the lines of medical stuff we frequently.

This participant reported using condoms for birth control and had no subsequent births recorded after 2005.

Some women suggested timing and spacing as planning considerations for childbearing. For example, this 28-year-old woman, who was married, reported having three children and desiring a fourth, reflected both timing considerations along with balancing financial challenges:

We haven't always had a lot, but we are working hard for the future that we want.

We are having our children at the ages we want them even though it is sometimes a struggle. We have been very fortunate that we have received medical assistance when we needed it. Medical insurance for the self employed is expensive for a young family with a small business. I hope all of this is helpful.

She reported natural family planning as her birth control method. She had a birth 54 months prior to her 2005 child and a subsequent birth 38 months later. Another woman, 30 years old and married with five children at the time of the survey, indicated health related reasons for spacing births:

I had another child, since the one in this survey, in December 2006. This is why getting pregnant in the next year doesn't appeal to me. I prefer to have healthy gaps between children to allow both the family, and my body, time to adjust.

Additionally, this participant reported “none” for birth control method, had a second subsequent birth 20 months after her 2006 child, and indicated a desire for ten total children. This timing was consistent with her prior birth history, where intervals between births were 21 to 25 months.

Subtheme 1.3: Incongruence as Engaged Planning

Among the notable survey findings by the DSHA-RDA team, Cawthon and colleagues (2009) observed inconsistency between the future pregnancy intention expressed by participants and their reported method of contraception. For women who expressed that they “wanted” or “kind of wanted” to become pregnant in the next 12 months, over 35% reported using a more effective birth control method, and for women who did not want to get pregnant, over 34% reported use of either a less effective method, no method or that they were not having sex (Cawthon et al.). This incongruence between pregnancy interest and use of contraception persisted in this current study, where 44% ($n = 24$) of women in the qualitative pattern-coded sample who expressed a desire for future pregnancy ($n = 54$) also reported use of a more effective birth control method, and 31.8% ($n = 48$) of women who wished to avoid pregnancy ($n = 151$) reported use of a less effective method, no birth control or that they were not having sex (Table 4.2).

The pattern-code categories of *congruence* and *incongruence* were constructed to capture these variances and connect reported desires and behaviors with typical-use birth control effectiveness measures. Incongruent pattern codes were assigned to 72 (28%) women in the PCQual258 sample, with five participants assigned *desire plus sterile*, 21 participants assigned *desire plus more effective bcm*, 16 participants assigned *avoid plus vulnerable* (typically including reports of “no sex” for birth control), 24 participants assigned *avoid plus less effective bcm*, and six participants assigned *avoid plus no bcm*. Some of these incongruent patterns will be explored in subsequent subthemes of *the partners in the background*, *evolving desires* and *outside my control*.

Of these 72 women with an incongruent pattern, 75% (54) were co-assigned to *ambivalent, low-engagement* or *evolving patterns*. The remaining women volunteered responses suggesting that highly-engaged planning processes were behind their incongruent responses. Twenty participants in the PCQual258 sample were assigned the planning code *high engagement* and eight of these participants also received an incongruent pattern code assignment. One woman, who was almost 21 years of age at the time of the survey, had two children but desired four, and displayed an incongruent pattern because she desired pregnancy but was using an IUD. She highlights one scenario of engaged planning:

I would like to know how the survey goes. Could you please send me the results. I have had very good experience with Healthy Options, never had a problem. I love it. My IUD has worked 100% for about 2 years. I never did anything else to keep from getting pregnant, such as condoms, pulling out, avoiding having sex at certain times of the month. Nothing at all, only the IUD. I am getting it taken out in March. I plan to get pregnant in the next 6 months. Thank you.

This participant had a third birth recorded almost 35 months after her 2005 child, or about 11 months after she completed the survey.

Another participant, who was 24 years old and married, and had three children at the time of the survey, explained the incongruence of her having an IUD:

Because of religious beliefs we do not take any precautions (birth control) unless medically needed. Birth control was used recently for medical reasons and only medical reasons.

This participant strongly disagreed with the use of birth control for family planning, indicated that she would be very pleased if she was pregnant in the next year and very upset if she did not have any more children, and she did not respond to the question asking about the number of children she desired. She had a subsequent birth - her third child - 11.5 months after her 2005 child and a second subsequent birth 22 months later.

Some participants volunteered responses suggesting that they may have been very diligent users of birth control methods considered less effective. While she did not have an incongruent pattern at the time of the survey, this 35-year-old woman who was married with two children, suggested a pattern that may have been considered incongruent, yet quite engaged, prior to the pregnancy for her 2005 child:

I didn't need any family planning after my 2005 baby. After he was born C-section my tubes were tied before the surgery was over. Also, we never used formula. Both my children were breast fed exclusively until age 2. During the three months before getting pregnant we used contraceptives. It only took one month to get pregnant.

A 35-year-old participant, who was married with two children and who reported that her husband had a vasectomy after their 2005 child, reflected on her prior contraception:

“Before we used condoms and foam. Worked great!”. Another participant, 37 years old and married with three children at the time of the survey, expressed strong faith beliefs and reported balancing health concerns, but conveyed robust self-awareness in the use of a less effective method:

I believe that God is in control of all life. We have no right to stop what God has planned. If we choose to have sex we have to know that a baby could come from

our union. If we are not open to life, then we should not be having sex. Natural Family Planning has helped me to know my body, and abstain during those times when pregnancy would not be the best choice for our family. Right now I am fighting cancer, so we know that this is not a good time to conceive a child.

Other participants' patterns of responses suggested situations where the response to the single survey question about future intention may not have been adequate to reflect their situation. A 27-year-old who was married with two children and had her last birth in 2005, portrayed an incongruent pair of responses by indicating "none" for birth control method and a "really do not want to get pregnant during the next 12 months" response about future pregnancy intention. However, she volunteered response to a different question revealing that she had undergone sterilization, clarifying her perceived "none" response to birth control use. This participant volunteered another response indicating timing/spacing desires for her 2005 birth and engagement in planning: "wanted to try and have a baby. Didn't want kids to be too far apart in age."

Subtheme 1.4: Contraception Counts

Consistent with the findings by Cawthon and colleagues (2009), 81% of all respondents indicated that they agreed or strongly agreed with the statement that it was "best to plan ahead for pregnancy by using birth control methods", regardless of their pregnancy status or whether they reported using a method at the time of the survey. This level of agreement remained consistent in the qualitative subgroups as well (Table 4.4). Only 3.9% of all participants disagreed or strongly disagreed with the use of birth control for pregnancy planning, as did 3.8% of all qualitative respondents and 2.8% of those in

the PCQual258 subgroup. Another 15.1% of all respondents selected a neutral opinion option, slightly lower than the 17% in the qualitative groups, who were neutral.

Women in the PCQual258 subsample reported use of contraception that generally aligned with the opinions they shared. Among the 79.7% ($n = 185$) of women who expressed agreement with the use of birth control for pregnancy planning purposes, nearly two thirds (62.7%, $n = 116$) reported use of a more effective method of contraception, whereas 20% ($n = 37$) reported use of less effective methods. Eleven (5.9%) reported “no sex” as their method and 11.4% ($n = 21$) reported no method being used. Among the 20.3% ($n = 47$) of women who expressed a neutral opinion or disagreed with the use of birth control, nearly half (42.6%, $n = 20$) reported use of a more effective method, one third (31.9%, $n = 15$) reported use of less effective methods, three (6.4%) reported “no sex” as their method, and 19.1% ($n = 9$) reported that they did not use any method. While no statistically significant differences were revealed in the categorical chi-square models, standardized residuals suggested that women with neutral opinions were less likely to use more effective methods and more commonly used less effective methods, with women who disagreed with birth control for pregnancy planning more commonly reporting no method use.

Participants who expressed differing opinions on the use of birth control revealed significant associations in relation to subsequent pregnancy and birth interval history (Table 4.4). Women who either disagreed or expressed a neutral opinion toward the use of birth control for pregnancy planning were significantly more likely to experience a subsequent birth in the 8 to 21 month period following survey completion. This association existed for the total survey sample as well as both qualitative sub groups.

Additionally, these same women were more likely to have experienced birth intervals of less than 21 months one or more times in their childbearing history (Table 4.4). A 32-year-old-woman with a history of three births and the most recent with a birth interval of less than 15 months, volunteered a comment suggesting a situation where short interpregnancy interval may have compromised maternal health: “After 2 full term pregnancies in a row, the last pregnancy did a number on my body, plus I usually dropped the weight after a pregnancy, not this time, and my weight is climbing.”

Beside their structured survey responses, several participants volunteered comments about how access to contraception and reproductive health care served an important role in helping them attain their goals, whether implicit or explicit. This 24-year-old woman, who was married and pregnant with her third child at the time of the survey, articulated the connection between goals and family planning services:

I feel that the Take Charge program is an excellent one and has been especially helpful to me and my family, particularly while we were struggling between jobs and insurance coverage. It made it easy and convenient to keep our goals of when and how many children to have. Thank you!

Additionally, she expressed a desire for a fourth child in the future and had spacing of 24 to 26 months between her three children.

Table 4.4

Opinion toward Birth Control, Subsequent Birth and Short Inter-Birth Intervals

| | All Respondents | | All Qualitative | | Pattern Coded | |
|---|-----------------|--------|-----------------|--------|----------------|--------|
| | <i>n</i> = 1257 | | <i>n</i> = 580 | | <i>n</i> = 251 | |
| | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) |
| Opinion: Planning using BC (Q42) | | | | | | |
| Agree | 1018 | (81.0) | 459 | (79.1) | 199 | (79.3) |
| Neither | 190 | (15.1) | 99 | (17.1) | 45 | (17.9) |
| Disagree | 49 | (3.9) | 22 | (3.8) | 7 | (2.8) |
| Subsequent Birth | | | | | | |
| | Model ***‡ | | Model ***‡ | | Model ***‡ | |
| Agree | 111/1018 | (10.9) | 39 / 459 | (8.5) | 12 / 199 | (6.0) |
| Neither | 33 / 190 | (17.4) | 19 / 99 | (19.2) | 10 / 45 | (22.2) |
| Disagree | 17 / 49 | (34.7) | 6 / 22 | (27.3) | 3 / 7 | (42.9) |

Table 4.4 *continued*

| | All Respondents | | All Qualitative | | Pattern Coded | |
|--|-----------------|--------|-----------------|--------|----------------|--------|
| | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) |
| Inter-Birth Interval Frequency | | | | | | |
| Interval between Births | <i>n</i> = 1292 | | <i>n</i> = 593 | | <i>n</i> = 258 | |
| < 21 months | 277 | (21.4) | 132 | (22.3) | 58 | (22.5) |
| < 18 months | 185 | (14.3) | 92 | (15.5) | 41 | (15.9) |
| < 15 months | 89 | (6.9) | 46 | (7.8) | 21 | (8.1) |
| More than 1 IBI < 21 months | 50 | (3.9) | 25 | (4.2) | 15 | (5.8) |
| Any Inter-Birth Interval < 21 Months by Opinion on Birth Control | | | | | | |
| | <i>n</i> = 1257 | | <i>n</i> = 580 | | <i>n</i> = 251 | |
| Opinion: Planning using BC (Q42) | Model ***† | | Model ***†† | | Model ††† | |
| Agree | 193 | (19.0) | 89 | (19.4) | 38 | (19.1) |
| Neutral or Disagree | 75 | (31.4) | 37 | (30.6) | 16 | (30.8) |

Table 4.4 *continued*

Note: Samples exclude non-respondents as well as participants who reported that they were pregnant at the time of the survey. Subsequent births are limited to those recorded between approximately 8 months and 21 months following survey completion. Shorter inter-birth interval categories are subsets of the longer interval categories.

** $p < .01$, *** $p < .001$, † OR = 2.16, # OR = 2.80, ## OR = 5.19, † OR = 1.96, †† OR = 1.83, ††† OR = 1.88

Another participant, who was 23 years old with two children and not married but living with a partner at the time of the survey, was among the many women who expressed thankfulness for access to contraception via safety-net services:

I am on Take Charge. I appreciate what they do for low income people who can not afford B/C. If it wasn't for Planned Parenthood I don't know where I would be.

This respondent reported Depo Provera injection as her contraceptive method and had no subsequent births recorded as of December 2008, despite her expressed desire for additional children when she completed the survey.

Other participants articulated the close connection between the cost of contraception and ability to access services, such as this 38 year old woman, separated from her spouse with two children, but desiring a third:

Thank you for all the family planning help & for providing birth control pills.

With no health insurance I'm not sure how I would go about affording doctor's visits or the monthly prescriptions.

This participant had no subsequent births recorded between 2005 and December 2008.

Extending beyond their individual situation, some participants offered program recommendations or reflected on the broader implications of contraceptive access.

Another participant was 30 years old at the time of the survey and reported being never married nor living with a partner. She was using an IUD for contraception and her 2005 child was her only recorded birth, yet she expressed desire for a second child someday:

I was on the Take Charge plan in 2000 while I attended school. I think this form of government provided care specifically in the family planning dept. is a

tremendous leap in the right direction. If this type of assistance were available when I was 15 (1991), I believe that all of my girlfriends who became mothers at 16, 15, 14, even 11, could have been prevented. Thank you!

Subtheme 1.5: Nothing Artificial

Approximately half of participants across the sample groups reported use of more effective methods, most commonly sterilization (15.0% to 19.4%), IUD (14.7% to 16.7%), and birth control pills (11.6% to 14.2%). See table 4.2. Participants in the PCQual258 qualitative subsample reported the highest rates of sterilization and lowest rates for IUD and birth control pills. Other more effective hormonal methods each constituted 3.5% or less of all contraceptive strategies reported across groups. In the total sample, 16.6% reported that they used no birth control and 7.5% reported “no sex”. Across sample groups approximately 20% reported use of a less effective method, most commonly male condoms (17.8% to 19.8%), withdrawal (9.2% to 14.3%) and natural family planning (3.3% to 6.6%). Reported use of other non-hormonal methods were less than 1% each. Participants could select more than one method in the survey. Women in the PCQual258 subsample reported the highest frequencies for use of withdrawal and natural family planning.

Several participants volunteered comments revealing concerns about or desire to avoid hormonal or other more effective contraceptive methods. In qualitative coding, two participants indicated opinions that hormonal contraceptives were harmful and 14 mentioned concern about side effects or unpleasant feelings with hormonal contraception. Eleven women volunteered comments indicating that birth control, particularly

“artificial” birth control, was contradictory to the beliefs of them or their partner and 21 indicated natural family planning as their preferred method.

Most comments volunteered by participants were relatively brief, particularly those reflecting upon their past experiences with hormonal birth control. Negative comments included: “the side effects,” “hormones in birth control effect me negatively,” “birth control effects my cycle,” “most rx birth control makes me very sick,” “I was on the take charge program, when I got pregnant in 2005, I did not like the way the birth control made me feel,” and “I had side effects from all hormonal birth control and a bad experience with non--hormonal IUD.” One participant who was 32 years old and married with 5 children described her past experience and opinion more explicitly:

I think all women should have a test for Factor 5 clotting disorder done before given any medication for birth control. I almost had a heart attack in 2001 due to dep.provera. At the time I didn't know I had Factor 5. This would have been easy to prevent if I would have had the test done before I was given Depo Provera.

This participant reported having a hysterectomy after the birth of her 2005 child and did not reveal any other contraceptive methods that she previously used. She did have one birth interval less than 21 months in the history of her five births, but the other birth intervals ranged from 23 to 32 months apart.

A few participants revealed their perceptions of potential adverse effects associated with hormonal birth control, including this 23-year-old woman who reported being married, having 2 children but desired a third, and who reported no birth control use: “When you use birth control, you could cause birth defects for the baby.” She did have a subsequent birth approximately 10 months after the survey and offers one example

where the next steps in pregnancy planning for women and their partners were unclear after having achieved the number of children desired.

Other participants volunteered comments expressing concern about the adverse impact of hormonal birth control on their goals of breast feeding. This 37-year-old woman, who reported being married with 2 children and desiring no more, used natural family planning:

I did not want to go on hormone birth control and I would consider getting my tubes tied after I'm done nursing, but health insurance won't cover it - and I do not want to have it done while I'm still nursing I do child led weaning, so within a year after her birth would not have worked.

Another participant, who also seemed to express interest in avoiding hormonal contraception while breast feeding, revealed that she may have overestimated the contraceptive benefit of that strategy:

I had just given birth to our twins and was breastfeeding so I wanted to avoid hormones and we thought we would not be able to conceive at that time. Whoops.

Other respondents offered general comments suggesting that contraception was contradictory to their beliefs, although not necessarily connected to faith beliefs, e.g., “Using ARTIFICIAL b.c. is against mine and my partner's personal beliefs.” An additional participant who was 42 years of age, living with her partner, and who reported having two children, including a subsequent birth, conveyed not only her opinions toward birth control and sterilization, but also her perceived self-efficacy in using non-hormonal methods:

The two recent pregnancies were planned (___ 2005, ___ 2007) (I had a baby when I was 16, in 1987). When we tried to get pregnant in 2004, it first resulted in a miscarriage. I was almost forty at the time and the clock was ticking. I had health coverage but was laid off and collecting unemployment and attending school full-time (worker retraining). I am fully capable of preventing a pregnancy using condoms -- I did so for twenty five years. I don't believe in taking poison to alter my reproductive system or letting someone surgically do so.

Theme 2: Traditional Values

Strongly represented in the participants' volunteered comments were perspectives, opinions, beliefs, and characteristics that appeared to embody values congruent with what might be considered traditional American or, perhaps, "family" values: marriage, education, employment, self-reliance, faith, nuclear families, larger families, homemaking, as well as the role of children in family and society. Additionally, several participants conveyed discomfort or perceived stigma in dealing with health care providers and agencies. Typically this centered around perceived biases and stereotypes associated with being lower income, seeking public services, and desiring large families.

As previously presented, the number of women in the total sample who reported being married in 2007 was 57.4%, a slight increase from 56% derived from 2005 birth certificate data and higher than the 55% rate for all 2005 *Program S* women (Cawthon et al., 2009). The portion of married participants in the qualitative subsamples was larger, with 64.3% of women in the PCQual258 sample being married. While this was markedly above the 2006 average of 42.7% marriage for all Washington State Medicaid women who gave birth that year, it did not approach the 90.8% marriage rate for non-Medicaid

women (Cawthon, Woodcox & Lyons, 2008). However, it approximated the 66.9% average marriage rate for all Washington women who gave birth in 2007 (Center for Health Statistics, 2013). When combined with women who reported living with a domestic partner, the number of households with two adult partners rose to 83% for those in the PCQual258 subsample.

While few women offered comments regarding education, the percentage of survey respondents who completed high school and attended some college significantly exceeded that of non-respondents and all 2005 *Program S* women (Cawthon et al., 2009). Compared to the total sample, participants in the PCQual258 subsample were significantly more likely to have attended college and/or achieved a college degree ($X^2, 3 = 12.82, p < .01$). One participant reflected on her future education plans as well as her values about self-reliance and societal contribution:

I'm almost 35 yrs. old/ we both work hard for the money we do make from our honest living. I plan to go back to school when my youngest goes to public elementary school, etc., to better our income! One day we want to give back what we have used to be able to have our family! etc.

Cawthon and colleagues (2009) observed a shift in employment status among survey participants between 2005 and 2007, with 12.2% fewer women reporting full time employment and 10.2% more reporting their primary occupation as homemaker. This shift was even more pronounced in the qualitative subsamples. Whereas 28.2% of women in the total sample reported full time employment and 38.9% reported status as homemaker, full time employment reported in the PCQual258 subsample was only 22.9%, and half of the sample (49.6%) reported homemaker status. When asked about

partner employment, three fourths (74.4%) of women in the total sample reported partners with full-time or part-time employment as did 78.3% of women in the PCQual258 subsample. For partners, part time work constituted less than 10% of overall employment reported across the samples. Where partner unemployment was reported for 10.5% of the total sample, it was 7.1% for those in the PCQual258 subsample.

Several participants reflected upon their employment status in relation to income and insurance, such as this 24-year-old woman, who was married with one child and desired more, but had no subsequent births recorded:

My husband and I work full time, however it is a self-employed retail business in its 2nd year. That's why our income is so low -> we're still trying to make this business work & pull out of debt. Thanks for the info about the Take Charge program.

Another 28 year old participant connected a change in income and employment with their relocation:

Well, I thought you should know that I no longer live in Washington. My husband and I now live in Arizona. We aren't considered a low income family any more with his new job. However, I answered your questions. Our new address is _____. And I've had a baby since 2005. I had a baby in Nov. of 2006.

Thanks.

Another woman, also 28 years of age who was married with 2 children and using an IUD for contraception articulated the connection between employment, insurance, and transition to not needing governmental assistance:

My husband was recently hired by a company that has medical insurance. We found ourselves in an unfortunate situation during our last pregnancy and we are eternally grateful for the services we were granted. However, we are excited to get our feet back on the ground. If anyone could ever "use the system" correctly I would like to think we did. By the end of this month we will be completely independent from any state aid.

Embedded in many participants' comments were reflections about attempting to achieve and maintain financial security, self reliance, and extracting themselves from needing assistance. This 31-year-old woman, married with four children and using an IUD for contraception, reflects a family that remains in transition and, like many, appreciative of the assistance they were receiving:

I've tried to answer each question as correctly as I remember. Some of the questions were very personal and felt uncomfortable, and so I did not answer them. I'm sorry. I would like to take the time now to thank D.S.H.S. and every one involved with this survey for providing \$5.00 just to answer these questions. I've only asked for medical assistance this time mainly for my children & me and since I'm not working, am trying to live on only my husband's income and trying to not be a burden for Uncle Sam by asking for food or cash assistance which I've never asked for. Thank you.

Other participants revealed, and appeared to celebrate, that they were further along in the path toward self reliance. This 29-year-old woman with two children and who shared that her husband had a vasectomy scheduled, reflected upon their stabilizing employment and insurance status:

Since the birth of my son, I have found a wonderful employer. Good pay and great benefits. My husband has also found a great employer. Our whole family has insurance (health). Thanks to Medicaid taking the financial burden of healthcare costs in our time of need. We were able to focus on providing a better future for our family. Our family being complete. We are now working towards home ownership. Thank you.

Although limited in number, some participants volunteered comments that could be considered as reflecting conservative social values, not necessarily connected with faith beliefs. This participant, 25 years old and married with 2 children but desiring more and using condoms for contraception, reflected her opinions about family planning services and pre-marital sex:

I believe that the options provided by the Take Charge program should be available to married women. I do not believe it to be wise to make these things available to unmarried women as that encourages pre-marital sex which is wrong. If people decide to have premarital sex they can decide to purchase what they want on their own.

Another woman, who was 28 years of age, married, reported having 4 children and desired 6, but had also experienced a hysterectomy, shared her opinions about the social influence of state services and expressed feelings of disparate treatment:

More time and money should be spent on preparing young girls and women to not get pregnant in the first place. In the state of WA, I feel like girls are told it is okay to get pregnant because there is the state to pay for it. In my circumstances

when I did plan to get pregnant and then needed financial help, I was ostracized because I was white.

Another participant wrote an extensive and passionate letter in response to the survey, conveying her values about children and childbearing, ending her letter as follows:

...I hope that this gives you a little insight to one woman in your survey (me) who doesn't believe in preventing pregnancy but believes in Jesus, abstinence before marriage and marriage between a man and a woman. Now, you can throw this in the pile! Thank you for the \$5!

Subtheme 2.1: Pregnancy as Providence

Comments were also volunteered by women who expressed their faith beliefs or religiosity in relation to childbearing. Given their depth, these comments were among the most frequently noticed during the sample reduction process. While resonant and engaging, in the context of all participants in the PCQual258 qualitative sample, the pattern mediator code *faith beliefs* was assigned to only eleven (4.3%) of the 258 participants in the sample and the open code *faith beliefs* was assigned a total of fourteen times. Therefore, *Pregnancy as Providence* warranted inclusion as a supportive subtheme verses a main theme in these results. When women were asked about the reasons they were not using a birth control method in 2005 or did not seek a method after the birth of their 2005 child, 39 (3.0%) of all respondents indicated that use of birth control was contrary to the beliefs of the woman or her partner and 36 (2.8%) cited that reason for not seeking birth control after the birth of their 2005 child. Among participants in the PCQual258 subsample, 11 (4.3%) and 9 (3.5%) responded similarly.

While limited in number, comments were rich in context and clearly articulated decision making for these women and their partners. Most of the comments volunteered by participants focused on pregnancy and childbearing as God's will, verses that of the woman or her partner. The 37 year old woman who was introduced in the previous section, began her letter as follows:

Dear Take Charge Evaluators: I've been composing my letter to you for over a week and finally have the time to put my thoughts on paper. I was, like many women, encouraged to go on the Pill shortly after I first married. This was to ensure an "untimely" pregnancy since as young newlyweds, we were supposed to enjoy our time together without the "interruption" of children. Oh, how wrong I was! To think of the other children we may have intentionally prevented out of our stupidity and selfishness! I am first and foremost a believer of Jesus Christ, my savior and redeemer who granted me grace along with three amazing children. Before you throw this in the "Religious Nut Job" pile, please listen to me as I have taken the time to fill out your survey... All throughout the Bible it says that children are a blessing, the Lord will provide and that we as women are saved from ourselves through childbirth. The blinders were removed from my eyes and I have been forgiven.

This participant reported desire for more children, a miscarriage in 2006, and had a fourth birth recorded approximately 7 months following completion of the survey. Others respondents extended this belief of pregnancy decision making as being beyond them, such as this 22 year old, married participant who had her third child about the time of the survey and desires more:

I am currently pregnant and due (date). My husband and I believe that we will have children when God means us to. Our children are spaced two years apart, and that's without using birth control.

Other women framed pregnancy and childbearing as a divine gift, including this 32-year-old married woman who just had her fifth child prior to the survey and wanted to become pregnant again in the next year:

I just had my 5th baby on (date), 2006. I love being a mom - I have 5 that are 7 yrs & under. Children are a gift from God & I always get the feeling that I am approached with info. on birth control or "family planning" that people think I'm crazy or stupid - like I didn't know having sex could get me pregnant.

This participant had three birth intervals less than 21 months apart, with one of those less than 18 months. Another participant, a 25-year-old married woman, was pregnant with her second child and desired more. She expressed her discomfort in provider interactions about contraception:

I am bothered by how many times my health care providers ask me about birth control. I feel it is a very personal issue. I think it all boils down to what an individual feels is the meaning of life.

A 25-year-old woman with one child, who was unmarried and not living with a partner, drew the connections between her faith beliefs, children as divine gifts, marriage and premarital sex:

I have taken a 2nd virginity vow. I took this vow when I was 3 months pregnant. I've been chaste for a little over 2 1/2 years...(then responding to the number of

children she hoped to have someday)...If I don't get married just the one I have now. If I get married, however many God gives us.

Two other participants shared that they disagreed with the use of birth control for influencing procreation, but it may be acceptable for other purposes. One participant, introduced in a previous theme, shared that she used birth control (IUD) for “medical reasons and only medical reasons”. Another woman, 22 years old and married with three children, offered additional considerations:

I believe birth control is a sin unless used for medical reasons (due to health problems or because of financial or mental health issues). There are many cases where birth control is necessary but the bible says we should replenish the earth

Subtheme 2.2: The Partners in the Background

As with most demographic reproductive health research, the *Survey of Recently Pregnant Women* targeted women who had previously given birth. Any information about the role or perspective of male partners was obtained in a secondary manner through the lens of the participant. Survey questions that referred to the woman’s partner were largely limited to employment or insurance status.

One yes/no question asked participants whether her husband or partner was supportive of her goals for having or not having children. In the total sample, 80.8% ($n = 1025$) of the women indicated partner support, where 5.3% ($n = 67$) responded “no” and 13.9% ($n = 177$) indicated that they had no husband or partner. In contrast, 85% ($n = 216$) in the PCQual258 subsample responded favorably, 5.1% ($n = 13$) indicated “no” and a smaller portion (9.8% / 25) responded that they had no husband or partner. While married women constituted 52.2% of the total sample and 38.5% of the PCQual258

subsample who felt that their husband or partner did not support their childbearing goals, the greater portions of perceived disagreement were among those who were unmarried (living together or not) and those who reported they were separated from their spouse. In the total sample, married women reported significantly less goal disagreement than those who were unmarried ($X^2, 1 = 7.34, p < .01$), as did those who were married or living together compared to those women who were separated or not living with a partner ($X^2, 1 = 27.64, p < .001$). Women in the PCQual258 subsample displayed similar associations between marital/living status and goal disagreement, but low cell counts in the categorical models limited statistical significance to the broader married verses unmarried comparison ($X^2, 1 = 7.38, p < .01$). Among the participants in the PCQual258 sample, 58 participants (22.5%) were assigned the *partner* mediator code, indicating that the pattern of responses shared by the participant suggested that the role of their partner had distinct influence on future pregnancy or the woman's decision making. This code was assigned because of the partner's role in contraception, including male sterilization, condom use or withdrawal, a partner's desire for more children, or a woman's desire for more children where no partner was present or comments suggested her relationship was unstable.

In their volunteered comments, a few participants offered brief comments drawing a connection between marriage and childbearing, such as the woman who responded "no husband" when asked about her birth control methods. Another 24-year-old participant with one child responded "I am now married and my daughter is two years old" when asked her reasons for having not seen a provider for birth control. She indicated a desire to get pregnant in the next twelve months and did have another birth

about 20 months after the survey. One participant was more explicit in describing the joint planning of pregnancy with her partner, including subsequent mention of her husband's vasectomy: "We both planned both of our 2 kids".

This relationship between living/marital status and future pregnancy desire was extended in the exploration of survey responses and qualitative pattern coding. Among all participants, there was a significant association between being married and wanting to become pregnant in the next 12 months as well as not wanting to become pregnant and being unmarried ($X^2, 2 = 24.95, p < .001$). Similarly, women who reported being married or living with a partner were more likely to express desire for pregnancy when compared to women were not living with a partner ($X^2, 2 = 29.57, p < .001$). Additionally, this later relationship between habitation status and pregnancy desire was demonstrated among the 258 women assigned the qualitative pattern codes of Avoid, Desire or Ambivalence ($X^2, 1 = 5.76, p < .05$).

A few participants volunteered comments suggesting a mismatch between the woman and her partner over childbearing interests. Two women, both of whom indicated that they would be "very pleased" to not have any more children beyond their current two, added comments to their response about whether their partner supported childbearing goals, including "He would like a son" and "he wants more". Other participants who desired more children offered comments suggesting that their husbands or partners might not share those interests, such as this 21 year old married woman with one child, who wanted to be pregnant in the next year and shared "We barely have sex" and had no subsequent births recorded as of December 2008. Less directly, this 28 year

old participant, who desired an additional child (number 4), listed abstinence and natural family planning as birth control methods, along with this comment:

I would like to see abstinence listed as a method of birth control in future surveys, because it is truly different from no sex due to a lack of partner, partner's refusal, or NFP methods.

Through their survey responses and volunteered comments, respondents conveyed that partners fulfilled a substantive role in contraception. Among more effective methods, sterilization was the most frequently reported method among all participants and the qualitative subsamples, representing 15.9% of the total sample and 19.4% of those in the PCQual258 subsample. Male sterilizations accounted for 31.1% of all sterilizations in the total sample and 38% of the PCQual258 group. Among the less effective methods, partner-dependent contraceptive strategies were reported more frequently than any other. Male condom use was reported by 19.8% of the all respondents and 17.8% of the PCQual258 subsample, followed by withdrawal, with reported usage at 9.2% and 14.3%. Less effective methods were often reported in tandem with other strategies. Among all participants, male condom use most was most frequently co-reported with withdrawal, birth control pills and IUD. In the PCQual258 subsample, the order of co-occurrence was with withdrawal, birth control pills and natural family planning. Across groups, withdrawal was most frequently reported in tandem with male condoms, natural family planning and birth control pills.

When the various partner-dependent birth control methods were examined in relation to the perception of partners supporting the women's childbearing goals, no significant associations were found, with one exception. There was a significant

association found in the total sample between women reporting “no sex” for birth control and the perception of her goals not being supported by her partner ($X^2, 1 = 11.55, p < .01, F < .01$). However, there was also a significant association between women reporting “no sex” as birth control and reporting their living situation as divorced, separated or unmarried and not living with a partner ($X^2, 1 = 232.36, p < .001$).

Several participants volunteered comments about their partner’s role in contraception, most commonly male sterilization. Most comments were simple statements such as that offered by a woman who reported having 4 children: “my husband got a vasectomy 6 mos. after baby born.” Another 37-year-old woman with three children elaborated further:

Since my child was born in 2005, I have had one more this year. My husband was sterilized in ___ 2006 after we found out I was pregnant again. Birth control is not an issue for us any longer, but information should be given to everyone before they leave a hospital after having a baby.

Another woman, 30 years old with three children who reported male sterilization as their birth control method, also expressed concerns about barriers to access: “Take Charge did not appear to cover vasectomy which annoys me since tubal is a harder operation.”

Another woman who was using natural family planning, but awaiting a scheduled vasectomy for her husband, shared a related perception of contraceptive inequity:

I think more emphasis should be made in promoting birth control for males.

Vasectomies should be equally offered as options. I feel like family planning is hugely on the woman's shoulders. More education & outreach to men would be nice.

Few women volunteered other comments about their partner's participation in contraception. An exception was this 29-year-old woman with two children and relying on natural family planning and withdrawal for birth control:

Going in for eligibility for Take Charge next week. I think it is a great idea and should last longer than one year. Not sure if it is relevant, but usually I wouldn't be able to get my partner to wear a condom, since we already have a child. Keep up the good work.

Of all comments volunteered about partners, the majority made references to unstable or dissolved relationships. One woman, in her late thirties with two children and using condoms for birth control, commented about her marriage and satisfaction with motherhood:

I am in a unhappy marriage so I have NO (undl) intentions of getting pregnant with the current situation, although I have been very (undl) blessed with my two children when they are so (undl) wonderful it is difficult not to want more.

Another woman shared a more general concern about her relationship and suggested the need for counseling services connected with family planning:

One thing I think a lot of women who are situations like mine need is more availability of counseling. At one doctor's office I saw a flier asking "Is there something wrong with your relationship?" something like that type of thing. I think Take Charge does a very good job of letting us know that it's available. But I think another aspect of it should maybe be a counseling program to really talk to women about how they're doing emotionally, and to bring more reality to them

and their situations with using or not using birth control when they're sexually active.

An additional woman, in her mid twenties with one child, commented on her separation:

I do not live in WA any longer. My daughter and I had to move to a different state due to my husbands mental and alcohol problems. He has been sober for 3 months and doing much better, but we are still separated until he has finished / maintained his recovery.

Subtheme 2.3: The Value of Children

Participants frequently volunteered comments about motherhood, their children and parenting, almost exclusively positive in nature. In the PCQual258 sample, half of the participants (50%, $n = 129$) indicated that they desired more children than they had and 41.5% ($n = 107$) indicated that the number of children they had equaled what they desired. The remaining 22 participants in the PCQual258 subsample did not respond to the question asking about the number of children desired. Nine participants offered comments describing children as a “gift from God,” 34 volunteered comments indicating desirability of children, and 16 expressed happiness toward children. Five participants offered comments suggesting a favorable role of children in family and/or society. While 14 participants volunteered comments about their pregnancies being unplanned, most referred to a contraceptive method failure and none shared unfavorable comments toward childbearing.

The most common comments volunteered by participants were expressions of happiness and satisfaction toward children and parenting. This 30-year-old woman who reported being married and having two children as well as male sterilization for

contraception, conveyed both satisfaction toward parenting as well as the unburdening afforded by Medicaid services:

DSHS was a true blessing for the birth of two of my sweet girls. It took the whole stress of being pregnant off my shoulders and allowed us to both enjoy that special time in our lives. Since then we are doing substantially better financially and are finding ways to give back to the community for our times of assistance.

Thank You.

Another participant was 25 years old and married with three children, but had her first child as a teen. She reflected both on the challenges and satisfactions of motherhood and parenting:

Thank you for the \$5 and I also would like to thank you all for every thing you do. For Moms and Baby I was a single mom for a while so I know how hard it can get. It's still not easy but I'm doing great and hope all the other women and children realize how blessed they are when their together. Kids are the best.

Thanks and God bless.

This participant added a comment that she had her “tubes tied” after the birth of her 2005 child. Another 27-year-old participant extended these reflections about the desirability of children. She reported being married and about to give birth to her second child, identifying her role as homemaker and acknowledging the financial tradeoffs: “Children are a blessing! I choose to stay at home & raise my kids, therefore we have one income.”

Some participants reflected on the role of children for family and society. A participant who was married, had five children at the time of the survey, and responded to the question about the number of children she desired with “I don't know. As many as

God will allow me to”, was typical. Continuing, she described the anticipated contribution of her children: “Don't worry, my children will grow up and repay the country. They will pay taxes and serve the public, because I teach them so.” Another respondent, also with five children and married, shared similar feelings about family and developing her children:

What's wrong with having big, beautiful healthy families? I know there's nothing wrong with it - in fact it's great training for kids to be responsible, unselfish citizens who contribute to the community to make it stronger & better.

One woman expressed intense faith beliefs and offered an extended comment reflecting on her values surrounding family, parenting, children, and priorities:

After our first two children were born, I told my husband I was DONE having children. We had the family of four that could win that trip to Disneyland, sit in a booth for four and still drive a sedan without moving on to the dreaded minivan. Oh how wrong I was! My husband desired more children and I kept avoiding the subject but thankfully I never went back on the Pill. Somehow, I had the frame of mind not to go that route again...

...As a result, God blessed us with a third child and has shown us His provision in amazing ways. Are we rich? Not by most people's standards. We own our home, both cars are paid for, I don't have a dishwasher, I don't work outside the home, my husband makes roughly \$2400/month but we have food on the table at every meal. Which, by the way, we all eat sitting down together morning and evening. We could have more, but why sacrifice precious time with our kids by me working to pay for an expensive car (unnecessary), or throw the kids in daycare to

an underpaid teenager, or give our kids so many extracurricular activities that it robs them of time spent together as a family?

...(One line of R's typing is cut out, then it resumes as follows) made me realize just how precious my other three children are and what a gift they are to me from the Lord. I hope to never take that for granted. We would welcome any more children the Lord blesses us with.

Subtheme 2.4: Stigma

In their volunteered comments, several participants revealed perceptions of discomfort or differential treatment in their interactions with social service and health care providers. Occasionally participants revealed that this discomfort arose from within their own sense of self or from stereotypical views. At other times, feelings arose from direct experiences with others. In coding comments, eleven participants were assigned the emotion code *stigma*, eight the emotion code *discomfort*, five the emotion code *pressured* and three the emotion code of *embarrassed*. Three participants were co-assigned *discomfort* and *pressured*, one participant was co-assigned *stigma* and *pressured* and all three participants assigned *embarrassed* co-occurred with *stigma*.

One concern expressed by participants was being treated differentially as a low income recipient of government assistance, or the perception that this might happen, particularly in the context of pregnancy and childbearing. A 36-year-old woman who was married with two children, expressed what seemed to be a commonly held perception:

I think that the Department of Social and Health Service is great service when you need it. I feel that there is a stigma associated with using any medical assistance

from the state. Not that I was personally mistreated. But I would hear people talk about those people on medical assistance. I think that the abuse of the system has really given people that use state assistance a bad name. My husband was embarrassed that I would accept any help. Which is one of the reason that I did not sign up for any other programs for my children or myself.

Another woman, 43 years old with three children and married, expressed her discomfort in using state services, as well as appreciation for what she received. She conveyed values of self-reliance and her perception of differential access to resources:

When I used the state's support during my pregnancy, I was embarrassed. I didn't want to take. I wanted to be able to support my family. I recently went through a medical procedure that will probably break our family finances. I don't understand why those with nothing, get everything. I am a hard-working middle class (soon mid-lower class) white person struggling to make ends meet. My pregnancies were miracle births due to the loss of 4 pregnancies prior to my daughter in 2003. I appreciate the support from the state and pray for a health care system that will reach out to all it's citizens. I have been told that since we make \$40 over the limit we are unable for funds. Oh well, since the hysterectomy I will not be needing family planning help. Thank You.

One 28 year old respondent, who was married, had two children, and was pregnant with her third, appeared to reflect some unfavorable experience with her health care providers:

I think that a lot more women would use your program if you weren't made to feel like its for low income people who shouldn't be having children. Our family is

low income but we have the means to provide for our family and we don't over extend ourselves. I hate the fact that Dr.'s offices look down upon everyone who is on DSHS or state assisted programs, WIC etc... We are not all women who have sex randomly and end up pregnant with 7 kids that we can't take care of. I know there are many that abuse the system but there are also many of us that are thankful for the resources that are available to us!

The other typical feeling expressed by women was discomfort arising from a mismatch of values and priorities between the participants and their health care providers and/or social services agencies. While she appeared to have a positive experience, this 37-year-old woman, whose responses suggested she had an unintended pregnancy, also seemed to observe differential treatment:

Perhaps because I was 35 yrs. old when my first child was born, I saw no negativity towards my unwed pregnancy as I have seen toward many women who were much younger during their pregnancies. The local WIC ladies are most helpful and encouraging, especially since I did not totally wean my child until she was over 15 months old.

By contrast, a 23-year-old woman with two children and pregnant at the time of the survey was blunt in her assessment of mismatched perspectives:

I think it sucks how DSHS, Take Charge, Planned Parenthood all make you feel terrible for being pregnant & happy about it. They treat everyone like they should never get pregnant even if they are married.

Other participants perceived pressure and vulnerability in interactions with health providers when their goals and values seemed misaligned. A married 25-year-old, who

was pregnant with her second child but desired five, expressed both faith beliefs and the discomfort she experienced during health care encounters:

I accept children as gifts from God, and His will, so I am happy to be pregnant and have kids...I don't like when doctors talk about these matters. Every time it was humiliating to my feelings... Doctors should ask if patient wants to talk about these matters, and start talking only after positive answer... I do not feel very comfortable to fill out this survey, nor I feel comfortable when doctors talk about using birth control. It feels like somebody is pushing you not to have children. I would not apply for those benefits if I had a job.

Theme 3: Multifaceted Ambivalence

Consistent with the body of literature on unintended pregnancy, Cawthon and colleagues (2009) observed that ambivalence toward pregnancy was prevalent among survey participants, particularly in their responses to questions asking them to reflect upon the pregnancy that led to the birth of their 2005 child. Additionally, they observed that a higher percentage of women who were married or living with a partner expressed ambivalence toward future pregnancy than did women who were single or divorced (Cawthon et al). This study revealed similar patterns.

The results described in this theme revealed that ambivalence may arise from a multitude of factors verses being a unidimensional phenomenon. The process of pattern-coding uncovered different distributions of ambivalence when compared to the distributions from singular intention measures. Additionally, birth order and first birth influenced how ambivalence was distributed over the time periods depicted in this study. Beyond the introductory data and overview, four subthemes emerged from participant

comments that describe several variations and facets of ambivalence. These subthemes are *evolving desires*, *letting nature take its course*, *outside control* and *couldn't happen to me*.

Table 4.5 depicts the distribution of participant responses to questions asking about the extent they were trying to get pregnant in the months before the pregnancy that led to the birth of their 2005 child, as well the extent to which they wanted to get pregnant in the twelve months following the 2007 survey. Additionally depicted is the distribution of participants from the qualitative pattern-coded sample reduced to the broad pattern classifications of *desire*, *ambivalence*, and *avoid*. Distributions are displayed for all participants and those in the PCQual258 subsample. The three intention categories for each time period were achieved by combining the two central responses from survey question number 7 (Intention for 2005 birth) to create the *ambivalent* category, as well as combining the four distal responses to survey question 36 (Future pregnancy intention in 2007) to create the *wanting* and *don't want* categories.

Table 4.5

Intention Toward Pregnancy: 2005 Birth and 2007 Future 12 Months

| Intention toward pregnancy | Intention 2005 (Q7) | | Future Intention 2007 (Q36) | | Future Intention Pattern 2007 | |
|--|---------------------|--------|-----------------------------|--------|-------------------------------|--------|
| | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) |
| Pattern coded participants, <i>n</i> = 258 | <i>n</i> = 257 | | <i>n</i> = 219 | | <i>n</i> = 244 | |
| | | | | | Model Q7-Pat ** | |
| | | | | | Model Q36-Pat *** | |
| Trying – wanting – desire | 62 | (24.1) | 46 | (21.0) | 59 | (24.2) |
| Ambivalent – don't care | 155 | (60.3) | 17 | (7.8) | 27 | (11.1) |
| Avoid – don't want | 40 | (15.6) | 156 | (71.2) | 158 | (64.8) |

Table 4.5 *continued*

| Intention toward pregnancy | Intention 2005 (Q7) | | Future Intention 2007 (Q36) | | Future Intention Pattern 2007 | |
|----------------------------|---------------------|--------|-----------------------------|--------|-------------------------------|-----|
| | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) |
| All participants, n = 1292 | <i>n</i> = 1282 | | <i>n</i> = 1119 | | - | |
| | Model *** | | | | | |
| Trying – wanting – desire | 326 | (25.4) | 194 | (17.3) | - | - |
| Ambivalent – don't care | 746 | (58.2) | 82 | (7.3) | - | - |
| Avoid – don't want | 210 | (16.4) | 843 | (75.3) | - | - |

Note: Samples exclude non-respondents for all groups, plus participants from the future intention groups who reported that they were pregnant at the time of the survey. Participant responses for *wanting-desire* and *ambivalent-don't care* were combined for the final *Q36-Pat* Model.

p* < .01, *p* < .001

Table 4.6

Intention Toward Pregnancy: Women with First and Higher Order Births in 2005

| Intention toward pregnancy | Intention 2005 (Q7) | | Future Intention 2007 (Q36) | | Future Intention Pattern 2007 | |
|--|---------------------|--------|-----------------------------|--------|-------------------------------|--------|
| | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) |
| Pattern coded participants, <i>n</i> = 258 | <i>n</i> = 257 | | <i>n</i> = 219 | | <i>n</i> = 244 | |
| | | | Model ** | | Model * | |
| First birth in 2005 | <i>n</i> = 118 | (45.9) | <i>n</i> = 100 | (45.7) | <i>n</i> = 110 | (45.1) |
| Trying – wanting – desire | 28 | (23.7) | 32 | (32.0) | 36 | (32.7) |
| Ambivalent – don't care | 71 | (60.2) | 6 | (6.0) | 11 | (10.0) |
| Avoid – don't want | 19 | (16.1) | 62 | (62.0) | 63 | (57.3) |
| Second or higher birth in 2005 | <i>n</i> = 139 | (54.1) | <i>n</i> = 119 | (54.3) | <i>n</i> = 134 | (54.9) |
| Trying – wanting – desire | 34 | (24.5) | 14 | (11.8) | 23 | (17.2) |
| Ambivalent – don't care | 84 | (60.4) | 11 | (9.2) | 16 | (11.9) |
| Avoid – don't want | 21 | (15.1) | 94 | (79.0) | 95 | (70.9) |

Table 4.6 *continued*

| Intention toward pregnancy | Intention 2005 (Q7) | | Future Intention 2007 (Q36) | | Future Intention Pattern 2007 | |
|-----------------------------------|---------------------|--------|-----------------------------|--------|-------------------------------|-----|
| | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) |
| All participants, <i>n</i> = 1292 | <i>n</i> = 1282 | | <i>n</i> = 1119 | | - | |
| | Model *** | | | | | |
| First birth in 2005 | <i>n</i> = 603 | (47.0) | <i>n</i> = 517 | (46.2) | - | - |
| Trying – wanting – desire | 137 | (22.7) | 128 | (24.8) | - | - |
| Ambivalent – don't care | 350 | (60.9) | 40 | (7.7) | - | - |
| Avoid – don't want | 99 | (16.4) | 349 | (67.5) | - | - |
| Second or higher birth in 2005 | <i>n</i> = 679 | (53.0) | <i>n</i> = 602 | (53.8) | - | - |
| Trying – wanting – desire | 189 | (27.8) | 66 | (11.0) | - | - |
| Ambivalent – don't care | 379 | (55.8) | 42 | (7.0) | - | - |
| Avoid – don't want | 111 | (16.3) | 494 | (82.1) | - | - |

Note: Samples exclude non-respondents for all groups, plus participants from the future intention groups who reported that they were pregnant at the time of the survey.

p* < .05, *p* < .01, ****p* < .001

In reflecting upon their interests in the three months leading up to the pregnancy for the birth of their 2005 child, the majority (58.2%, $n = 746$) of all participants offered an ambivalent response: each responding that she “wasn’t trying to get pregnant or trying to keep from getting pregnant” or she “was trying to keep from getting pregnant, but wasn’t trying very hard”. In comparison, 25.4% ($n = 326$) of participants indicated that they were trying to get pregnant and 16.4% ($n = 210$) indicated that they were “trying hard to keep from getting pregnant.” This distribution was similar in the qualitative PCQual258 subsample for 2005. When asked in 2007 what they wanted to have happen in the next twelve months, only 7.3% ($n = 82$) selected the ambivalent response of “I don’t care one way or another if I get pregnant”, where 75.5% ($n = 843$) selected that they “do not want” or “really do not want” to get pregnant in the next year and 17.3% ($n = 194$) revealed that they “wanted to” or “kind of want” to get pregnant. On that same future intention question, PCQual258 participants revealed a higher portion of women who wanted pregnancy in the next year (21%, $n = 46$) and a lower portion (71.2%, $n = 156$) who did not want to get pregnant.

Qualitative pattern-coding of participant responses for future pregnancy interests resulted in a distribution that was significantly different in categorical modeling. Among the same participants in the PCQual258 sample, pattern-coding revealed a significantly higher portion of participants who were ambivalent (11.1%, $n = 27$) and desired pregnancy (24.2%, $n = 59$), as well as a lower portion (64.8%, $n = 158$) who wanted to avoid pregnancy when compared to their responses on the single future pregnancy intention question (Q36). While the future intention survey question weighed heavily in qualitative code assignment, volunteered comments plus responses to other survey

questions, such as feelings toward pregnancy, number of children desired and contraception, were taken into account in the assignment of pattern codes. This process particularly applied for non-respondents to the future intention survey question.

Participants' expressions of pregnancy intention were examined in relation to whether the birth of their 2005 child was their first recorded birth or their second or higher order birth. See Table 4.6. Among all participants, 47% ($n = 603$) experienced their first birth in 2005 and 53% ($n = 679$) experienced their second or higher order birth, a distribution that was similar in the PCQual258 subsample as well as the future intention groupings. For their 2005 birth, no significant difference in the distribution of participant responses to intention questions was revealed between those experiencing their first birth and those with a higher order birth for either the total sample or the PCQual258 qualitative sample. However, among all participants, a higher portion (60.9%, $n = 350$) of those who experienced their first birth in 2005 expressed ambivalence and a lower portion (22.7%, $n = 137$) shared that they were trying to get pregnant, when compared to those who experienced a higher order birth that year.

Significant differences were revealed between these groups in their 2007 expression of future pregnancy intention. In the total sample, a higher portion (82.1%, $n = 494$) of women who had a higher order birth in 2005 expressed in 2007 that they did not want to become pregnant in the next year when compared to those who had their first child in 2005 (67.5%, $n = 349$). Similarly, a higher percentage of those who experienced their first birth in 2005 expressed that they wanted to get pregnant in the next year (24.8%, $n = 128$) when compared to those with a higher order 2005 birth (11.0%, $n = 66$). These differences between groups were similar for the PCQual258 subsample as well,

except that nearly one third (32%, $n = 32$) of women who had their first child in 2005 expressed that they wanted pregnancy (vs. 24.8%) and less than two thirds (62%, $n = 62$) wanted to avoid pregnancy (vs. 67.5%). Qualitative pattern coding continued to display higher percentages of ambivalence and desire for pregnancy verses intention to avoid pregnancy in both groups.

Volunteered comments further revealed ambivalence toward pregnancy appears to assume different forms, with some being developed in the following subthemes of *evolving desires, letting nature take its course, outside my control and lapses in judgment*. In addition to the pattern coding process for the 258 women in that subsample, 41 participants volunteered comments where the *emotion* code *ambivalence* was assigned during open coding. A typical response was volunteered by a 32-year-old woman with four children and whose husband had a vasectomy. She conveyed a host of mixed feelings in her comment, including desire for children, conflict, worry, health concerns, and an attempt to balance priorities:

Some of my answers may not have been totally applicable because my last 2 pregnancies ended with premature births. I would be pleased if I was pregnant again however, I would be upset if my next child was any earlier than the last one. I did want more children but like I said before my last 2 were premies one being born @ 29 weeks and the other 27 weeks. My husband and I decided we wouldn't have any more children for that reason.

Subtheme 3.1: Evolving Desires

As described in the prior section, significant shifts occurred in pregnancy intention as participants reflected on the pregnancy that led to the birth of their 2005 child

and what they wanted to have happen in 2007 for the upcoming year. Additionally, 30 participants (11.6%) from the PCQual258 subsample and 138 (10.7%) from the total sample were excluded from the future intention (Q36, Table 4.5) categories because they reported being pregnant at the time of the survey. In qualitative coding of birth history data, an additional 11 women were identified as being postpartum within the two months prior to receiving the survey. Generally, these were groups of participants where their next steps in pregnancy intention were unclear. In the pattern coding process, 14 participants could only be assigned a *congruence/incongruence* pattern of *other*, and all were currently pregnant.

Of the 258 participants in the PCQual258 sample, 73 were assigned the pattern *planning* code of *evolving*, and included 18 of those who were currently pregnant or recently postpartum. Another coding co-occurrence for *evolving* was with the *ambivalence* pattern *mixed feelings*, which included eight participants. While this 27-year-old participant was not assigned the *evolving* code because of her husband's vasectomy and wanting to avoid pregnancy, she offered an explicit reflection on pregnancy intention:

I would recommend having a "mixed feelings" answer. I would be very upset if I got pregnant in the next 12 months. I would also be very happy to welcome a new life into our house. I do not believe in abortion so I would have very mixed feelings.

Participants offered comments revealing where their unplanned pregnancy would not necessarily be an unwanted pregnancy, such as this participant who had four children and reported withdrawal as her birth control method: "I don't think I would have been

terribly upset if I hadn't - but I'm sure glad to have my wonderful 2 yr old.” Another participant, 29 years old, married with 3 children, and reported birth control pills and condoms as her method, added this reflection: “Sometimes pregnancies happen. I did not want any more children after my second one. But I love my third just as much. Life changes even when you plan.”

A woman’s age and position in her reproductive history may constitute another factor in pregnancy intention. Few participants offered overt comments in this dimension, although a previously introduced participant shared the perspective that she was 40 and the “clock was ticking.” Another woman who was 25 years old, living with a partner, and using condoms for birth control and did not want to get pregnant in the upcoming year, volunteered this reflection about not answering about how she would feel if she had no more children: “I can not answer this question (and not in a rude manner), but I am still quite young and I have only had (2) children.”

While introduced in a prior subtheme, the stability of their living situation and the presence or absence of a viable partner was a factor in some women’s pregnancy intention. In coding, the *partner* mediator code co-occurred 14 times with the planning code *evolving* as well as five times with the *low engagement* planning code and four times with the ambivalence pattern *mixed feelings*. In some cases, the response patterns of participants revealed a desire for more children but not wanting to become pregnant in the next year, as well as being unmarried and not living with a partner, and/or offering a comment that their partner was absent or the relationship unstable. If the participant reported “no sex” as her only contraceptive method, she was co-assigned the *vulnerable* code to reflect the pregnancy risk she faced if sexual relations were resumed.

And example provided is by this 25-year-old with one child who reported being unmarried and separated from her partner, as well as reporting “no sex” for birth control. She highlights the vulnerable situation in her response to how many children she hoped to have: “If I don’t get married just the one I have now. If I get married, however many God gives us.” She then followed with a comment about how she would feel about being pregnant in the next year: “If I was married.” She also indicated that she would be “very upset” if she had no more children. Another participant, 34 years old with two children, living with her partner and reporting withdrawal as her birth control method, extended this example further:

Thank you for the Take Charge info. As an unmarried parent living with father of children DSHS makes it very difficult to find resources to get by. My family life is comfortable but far from stable and could be forced to support myself and 2 children by myself soon.

Changing life situations might prompt reconsideration of prior decisions and priorities. A unique comment among the participants in the survey was provided by a 23-year-old woman who reported having two children and living with a partner. She posed an intriguing question: “I was wanting to know how much it would cost to get my tubes reversed? (just wanted to find out)”. She reported “not trying to get pregnant or keep from getting pregnant” in 2005 and feeling a “little pleased” if she got pregnant now or in the next year.

Subtheme 3.2: Letting Nature Take its Course

This subtheme arose primarily from transformed survey responses where the nature and sequence of responses suggested that participants were neither trying to

prevent pregnancy nor actively attempting to get pregnant, although desirability for pregnancy or having more children was typically present. Few participants volunteered specific comments that clearly distinguished this subtheme. Among those who did, the majority expressed faith beliefs that served as the underlying impetus for their actions. One 38-year-old woman whose only child of record was her 2005 birth shared another perspective on this: “I believe god makes for me to get pregnant when is time, not matters what.” Participants who expressed faith beliefs populated the subtheme *pregnancy as providence* verses this subtheme.

However, participants who populated this subtheme appeared to convey ambivalence in their responses and/or desire for pregnancy portrayed as ambivalence. Nine participants (3.5%) in the PCQual258 sample were assigned the *ambivalent* pattern of *nature takes its course*. Thirty-seven participants (14.3%) were assigned the related *ambivalent* pattern codes of *passive* ($n = 20$) and *mixed feelings* ($n = 17$), plus 16.9% ($n = 41$) participants were assigned the open *emotion* code *ambivalence*. Additionally, 7% ($n = 27$) participants were assigned the *planning* code *low engagement*.

A common pattern of responses for a participant assigned *nature takes its course* was a person who offered an ambivalent response to the 2005 pregnancy intention question, but often indicated that they were doing something to keep from getting pregnant. The participant typically selected one or more responses that offered a reason for not seeing a health care provider for birth control after their 2005 birth, and may have volunteered a short comment like “the side effects” or “not interested”. All were married or living with a partner and most either indicated that they desired more children than they had or did not respond to that question. Participants responded to the future intention

question (Q36) with either “I don’t care one way or another if I get pregnant” or “I kind of want to get pregnant” and typically expressed that they would be a “little pleased” “very pleased” or “wouldn’t care” if they were pregnant in the next year. Most either agreed with or expressed a neutral opinion on the use of birth control for pregnancy planning, but all reported use of no birth control or a low effectiveness method such as withdrawal or natural family planning. All but one of the nine expressed that they would be upset if they did not have any more children. Two thirds ($n = 6$) had a subsequent birth recorded and one of the participants had a total of nine births. When asked about how insurance or finances impacted their decision for their 2005 pregnancy, all but one indicated “not at all” or “some”.

Participants volunteered comments supporting aspects of their survey response pattern, but none that resonated robustly for this subtheme. Most comments were offered in response to why they had not seen a health care provider for birth control after the birth of their 2005 child. Comments from that section included: “lazy”, “unsure of what’s best for me”, “I don’t like the side effects of the pill”, and “wasn’t too big of a concern for us”. Another participant volunteered a pair of comments inferring a method failure and a barrier:

“We were doing the natural planning and I ovulated later than I thought...Planned Parenthood, in take charge, they made it almost impossible to get in. My only option was to come in and wait without an appointment, which is hard with four kids.”

Of the five participants who shared these preceding comments, four experienced a subsequent pregnancy, including two who were pregnant at the time of the survey.

Other participants populating this subtheme shared comments suggesting their desire or ambivalence toward pregnancy. A 32-year-old woman who was married with 5 children, including one subsequent birth, reported no birth control use and expressed faith beliefs, conveyed her desire clearly: “children are a gift, the more the better”. Another 31-year-old participant who participated in telephone data collection, conveyed her uncertainty:

Not sure yet. Maybe one more (responding to number of children she desired)...

Phone Interviewer: The respondent was unsure and did not feel comfortable giving a solid answer, especially on the questions pertaining to how she would feel if she got pregnant again, etc.

This participant was living with a partner, had two children, and experienced a subsequent birth following the survey. Yet another participant who did not share her age and reported being married with four children, skipped most of the questions related to pregnancy intention, but volunteered the following comment, which appeared to include some perceived vulnerability:

Thanks for the \$5.00. These kinds of surveys can be tough -- I had to skip a few of the questions just because the emotional element doesn't fit into a checked box -- like #43-45 -- I thought about just checking all the boxes :) -- except 5. Sort of a Brave New World /THX1138 kind of feeling to a survey like this.

Regarding her reference to “except 5”, response option number five for that set of questions that asked about feelings towards future pregnancy was “I wouldn’t care”.

Subtheme 3.3: Outside My Control

A relatively small, but distinct set of participants volunteered comments in conjunction with their survey responses suggesting that decision-making about their childbearing was outside their control. Eighteen participants (7%) in the PCQual258 sample were assigned the *planning* pattern code *outside control* and seven (2.7%) were assigned the *ambivalence* pattern code *outside control*. One third of the 18 participants ($n = 6$) assigned the *planning* code *outside control* also expressed strong faith beliefs regarding pregnancy as being God's will and populated the subtheme *pregnancy as providence*. Most of the remaining participants suggested a desire for pregnancy in their responses, but some reason why they did not anticipate being able to conceive. While the seven participants assigned to the *ambivalence* pattern *outside control* is small among total participants in the PCQual258 sample, they represent 13% of the 53 participants assigned an *ambivalence* pattern code.

Most participants populating this theme suggested a desire for more children but revealed a health or medical reason that prevented them from getting pregnant or prompted a decision to seek sterilization. This 32-year-old woman, married with two children succinctly summarized this situation in her comment:

I wanted to have more children but for health reasons had to have my tubes tied.

If we were to get pregnant we would really worry about my health and the babies health.

Another 26 year old participant with two children and no domestic partner expressed her desire and was more specific regarding her health concern:

I have very high blood pressure so I am advised not to get pregnant for health reasons, but I would love to have more children. I plan on getting sterilized before summer. Hopefully.

Some women suggested reproductive health reasons why future childbearing might not be possible, regardless of their desire for future children. This 25-year-old woman, married with four children, including two with birth intervals less than 18 months, indicated that she would be “very upset” if she could not have any more children and volunteered the following comments:

Not able to become pregnant; had hysterectomy (responding to question about birth control methods used)... doesn't apply (responding to feelings about pregnancy n the next year)... I have no problem helping you with any survey.

Some questions don't apply. I had a hysterectomy shortly after my last baby. But feel free to send me anything that I may be able to help you with. No problem.

Have a nice day ☺.

Although other women indicated a desire for more children, they volunteered comments suggesting that they were approaching the end of their physical reproductive potential. A 42-year-old woman who reported being married, had only one child. She expressed desire for another child, that she would be “very pleased” if pregnant in the next year, and shared her sensitivity to some of the survey questions:

Number 35 is an unfair question to ask someone my age. Women over the age 35 can have a harder time getting pregnant so I don't feel I can answer it period. And number 14, I didn't lose my job as in being fired but I did have to quit because of health reasons.

Another 43-year-old participant, who had one child and desired a second, described her situation:

I did not take birth control for 13yrs while married, then I became a widow. When I began having sexual relations I started taking birth control pills. After about one year on birth control pills I became pregnant at 41yrs old. Since my baby's birth in 2005 I have not had a period for 10 of the past sixteen months and lab test verify that I am perimenopausal.

A somewhat different aspect of this dimension appeared to be presented by a small number of women who may have been regretting or reconsidering their prior decision for sterilization. Previously introduced, one woman inquired about what it might cost to get her “tubes reversed.” Another 31-year-old participant with two children reported being divorced and sterilized. She responded to the question about what she wanted to have happen in the next 12 months by writing in “other, I can’t get pregnant in the next year,” followed by her response to the question about how she would feel if she could have no more children: “can’t have any more children ☹.”

Beyond intentions and feelings about future pregnancy, another aspect of *outside control* appeared to arise in the participant responses to questions regarding the influence of insurance and finances in their pregnancy decision making that led to the birth of their 2005 child. While this will be developed in the next theme, participants were asked two separate questions early in the survey about the extent that either health insurance coverage (Q8) or finances (Q9) affected their decision to get pregnant. Participants were offered the forced-choice options of “A lot”, “Some” or “Not at all” along with example statements. Less than a quarter of PCQual258 participants indicated that these mattered

“a lot” (see Table 4.7). Notably, the “not at all” option appeared to be context dependent, where a person may have selected that option if they considered their 2005 pregnancy to be unplanned, making any decision regarding insurance and finances outside their control. While she responded “a lot” to the questions about the influence of insurance and finances, a 25 year old participant was “trying hard” to avoid pregnancy in 2005 and offered a comment on the challenge she faced in responding to those questions: “#’s 8 and 9 were somewhat confusing to answer because my pregnancy was unplanned (an accident).” A 24-year-old, married with one child, reported “trying hard” to avoid pregnancy in 2005 and added the following explanation as her response about finances: “We knew it was going to be hard financially but there was nothing we could do.” Another women, 28 years old who reported being married with three children and desired no more. She responded “a lot” to the influence of insurance and finances, but added the comment “I don’t believe in abortions”, suggesting an unplanned pregnancy would assume priority.

Subtheme 3.4: Couldn’t Happen to Me

While only five respondents populated this subtheme from the PCQual258 sample, the majority arose from isolated comments in the broader Qual593 sample ($n = 593$) who offered any qualitative response. From that broader sample, 13.7% ($n = 81$) women volunteered comments that served to develop this subtheme. These comments almost exclusively were associated with survey question 11, which asked participants their reasons for not using birth control prior to the pregnancy leading to the birth of their 2005 child. The majority (88%) of the participants who volunteered a comment used in this subtheme also offered an ambivalent response to the pregnancy intention question

(Q7) related to their 2005 birth. Participant comments revealed several categories of characteristics such as lapses in judgment, indifference, impairment, compromised decisional capacity, overestimation of their birth control strategy effectiveness, contraceptive failure, inconsistent birth control method use, dissatisfaction/fear associated with birth control, and perceived infertility.

Fifteen participants volunteered one or more comments conceding either lapses in their judgment or suggesting some degree of indifference toward birth control at the time. Women who indicated that their judgment was compromised offered comments such as “make-up sex,” “JUST STUPID,” “stupid teenagers,” “wasn’t thinking my consequences,” and “I got caught in the moment and didn’t fully consider the outcome.” Other respondents suggested indifference toward contraception in their comments like “too much hassle to remember,” “lazy,” “I didn’t care enough about it,” “I wasn’t being responsible at the time,” “wasn’t caring,” and “I don’t need birth control.” Contrasted to those suggesting a lapse in judgment, women who expressed indifference were among those who indicated they were trying to get pregnant in 2005 versus providing an ambivalent response.

Four women volunteered comments indicating that drug or alcohol impairment resulted in them not taking steps to prevent pregnancy. These included: “was under the influence,” “I was using meth at the time & never thought about it,” “I was drunk, dumb and not thinking about contraceptives,” and “At the time I was having problems with drugs. I didn’t care about anything. I didn’t take birth control because I would forget. Everything changed after I became pregnant.”

In their sets of responses, two women offered comments suggesting that compromised decisional capacity may have been a factor in their pregnancies. One woman, in her late thirties, with five recorded births, reported being separated from her spouse and did not respond to the question about the number of children in her household. She volunteered the following set of comments: “dr said burn my tubes because I have (high number) kids,” “not with anyone,” and “I had my tubes tied due to what the doctor said that I have too many kids and I don’t got them.” She expressed a desire for eleven children. Another participant in her late 20s also did not respond to the question about number of children in the household, but responded to the question about how many she hoped to have with the comment “all three children” and added the additional comments:

I would like at least one more child later on in life when I can take care of them all the way... P.S. by the way there was a five dollar bill in here from who? why? I'd lend it to a friend of mine here at the (place). Thank You.

Thirteen participants shared comments suggesting that inconsistent use or practice of their birth control method was a factor in them becoming pregnant in 2005. Comments from these women included: “I forgot to take my pills and was waiting for my cycle to restart,” “we tried to be careful,” “my birth control pill got changed and messed with my body, so I stopped taking it for a couple months to try to get back on track,” “in between DEPO shots,” “missed my appt for Depo,” “on and off the pill bad at remembering,” “Using birth control but I was keep changing different method,” and “One problem I encountered, which was due to my own neglect, was that the program lasts for one year and so I ran out of supplies and I had to use a less desirable methods between.”

Comments from eleven participants suggested that they overestimated the efficacy of their contraceptive strategy, most commonly breastfeeding and natural family planning. Of the women who commented on natural family planning, some just mentioned the method, whereas two others shared more specific comments: “We were doing the natural planning and I ovulated later than I thought,” and “didn’t want to take / add hormones / meds. I was very regular. I knew when I was ovulating so I used the rhythm method.” Similarly, some women just mentioned that they had been breastfeeding whereas others elaborated further: “was nursing so didn’t think” and “I was breastfeeding my oldest son at the time and I was told that would keep me from getting pregnant. It didn’t work.” Other women volunteered comments suggesting contraceptive failures of more effective methods including: “Used birth control that didn’t work 100%” and “The pill, and the Depo shot (tried continuously) didn’t work. Got pregnant 6 times, have 4 children, all of whom were conceived while I was on birth control, except for _____.”

Seventeen respondents offered comments conveying they perceived that either their partner or they were infertile prior to the pregnancy that led to the birth of their 2005 child. The comments of three women suggested a belief that they could not become pregnant because of the proximity to a prior pregnancy including: “I hadn’t resumed menses from previous pregnancy” and “I just had a baby 2 months before I got pregnant and didn’t think I could get pregnant that fast.” Other women reflected on past experiences of unprotected sex or unsuccessful prior attempts to become pregnant in describing their perception of infertility: “we had intercourse many times w/o birth

control w/o getting pregnant,” “we had tried for several years before but never became pregnant.” and

“I was 39 and sure that I could not have children. Been sexually active off and on since 16...My pregnancy is considered a miracle in my book after being married over 5 years with no pregnancy. Thank you again for caring!”

Several other women described medical conditions or information they received that led to the belief that they were unlikely to become pregnant with their 2005 child. Typical comments include: “My husband was told he had a two percent chance of ever being able to have a child after a motorcycle accident,” “didn’t know I could get pregnant, cancer 1998,” “Dr state 8 years ago I could not conceive any more” and “One fallopian tube and given a 2/5 chance for pregnancy 2 years before pregnancy.”

Seventeen additional women shared a variety of reasons why they had not been using a birth control method prior to the pregnancy for their 2005 child. Three described timing/sequencing situations including “waiting for normal pap for IUD,” while three indicated rationale for not using a specific method such as “regular latex condom allergy” and “I was smoking so I couldn’t be on the pill.” The other women expressed dissatisfaction, unfavorable experiences, or negative perceptions about contraception, similar to some participants introduced in the subtheme *nothing artificial*. Some of their comments included: “I never found a birth control that worked for me,” “Bad reactions,” “Heard some bad things about birth control,” “Stroke due to the pill ortho tricycle,” “Condoms killed the mood,” and “Just don’t feel comfortable using birth control.” Another woman shared both her health-related concern and a unique strategy to solve it:

My hormones were acting act a lot back then, and it affected my periods in a negative way. So I didn't think this was good for my body. So I decided to get pregnant for that reason.

Theme 4: Insurance and Finances Matter, But Not for Pregnancy

From the initial phases of screening and analyzing participant comments, the number of remarks volunteered by participants regarding insurance coverage and finances captured attention. While multiple survey questions about insurance coverage may have prompted these, participants elected to elaborate on these issues more than others. Simultaneously, the participants revealed that insurance and financial status appeared not to occupy a significant role in their decision making about pregnancy and childbearing.

The 258 participants in the PCQual258 subsample offered 391 open-coded comments related to insurance and an additional 51 comments specific to their financial status. Regarding insurance, 89 comments referred to insurance limitations, barriers, delays, lack of affordability or capability to cover dependents. Another 78 comments discussed loss of coverage, loss of eligibility or need for coverage, some passionate in nature. 75 comments referred to Medicaid coverage, including the limitation of Medicaid eligibility to the pregnancy medical program or coverage for children. Twenty-five participants offered specific comments on how Medicaid coverage helped. Thirty-three participants shared specific comments addressing their financial status, most commonly referring to the financial stress they were experiencing, but also conveying values about self-reliance. While the majority of these comments were screened in the initial sample

reduction process, it was not uncommon for participants to express thanks for receiving the five-dollar survey incentive.

Based on the volume of comments alone, health insurance coverage and financial status were both interwoven and at the forefront of many respondents minds. One participant who reported planning with her husband and trying to become pregnant for both of her children, touched on many of the facets explored in this theme and its subthemes:

My husband and I wanted children very badly and we have 2 kids & very thankful. I feel very lucky to be married and have my children! Due to not having a lot of money and health insurance, we still felt we wanted our kids/family! I'm almost 35 yrs. old/ we both work hard for the money we do make from our honest living. I plan to go back to school when my youngest goes to public elementary school, etc., to better our income! One day we want to give back what we have used to be able to have our family! etc. We are very glad we both decided to get a vasectomy. My husband, etc

When asked to what extent having health insurance and family finances affected their decision to have a baby in 2005, only 20.5% ($n = 262$) of all respondents ($N = 1292$) indicated that health insurance mattered “a lot” in their decision making and only 17% ($n = 217$) responded that family finances mattered “a lot” (Table 4.7). The majority of participants conveyed that insurance or finances mattered only “some” or “not at all” in their decision making. The associated example responses in the survey suggested that participants who reported both of these options prioritized having a baby over insurance and financial status, and/or reflected the participant’s ambivalence. While the distribution

of responses did not reveal a statistically significant difference between the samples, a greater percentage of participants in the PCQual258 sample indicated that insurance mattered “a lot” and a lesser percentage responded “not at all”. For finances, a greater portion of participants in the PCQual258 sample, when compared to all respondents, indicated that finances mattered “some” in their pregnancy decision making and a smaller percentage indicated “not at all”.

When participant responses to the questions about the influence of health insurance and finances were examined in relation to subsequent births between 2005 and December 2008, more of those who responded “not at all” had subsequent births than those who responded “some” or “a lot” (See Table 4.7). A significant difference in the distribution was found only between participants with and without subsequent births for the total sample on their response to the finance question. Women who responded “not at all” had a greater portion of subsequent births than expected and those who responded “a lot” had fewer births than expected between 2005 and 2008.

Table 4.7

Insurance and Finance Influence and Subsequent Birth

| | All Respondents <i>n</i> = 1277 | | All Qualitative <i>n</i> = 586 | | Pattern Coded <i>n</i> = 256 | |
|---|---|--------|-----------------------------------|--------|---------------------------------|--------|
| | Insurance Influence: 2005 Birth | | | | | |
| | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) |
| A lot (<i>would not have had a baby</i>) | 262 | (20.5) | 112 | (19.1) | 60 | (23.4) |
| Some (<i>concerned but no affect</i>) | 469 | (36.7) | 217 | (37.0) | 98 | (38.3) |
| Not at all (<i>didn't think about it</i>) | 546 | (42.8) | 257 | (43.9) | 98 | (38.3) |
| | Any Subsequent Birth 2005-2008 by Insurance Influence | | | | | |
| A lot | 73 | (27.9) | 33 | (29.5) | 14 | (23.3) |
| Some | 154 | (32.8) | 74 | (34.1) | 32 | (32.7) |
| Not at all | 191 | (35.0) | 94 | (36.6) | 40 | (40.8) |

Table 4.7 *continued*

| | All Respondents | | All Qualitative | | Pattern Coded | |
|---|---|--------|-----------------|--------|----------------|--------|
| | <i>n</i> = 1279 | | <i>n</i> = 585 | | <i>n</i> = 256 | |
| | Finance Influence: 2005 Birth | | | | | |
| | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) |
| A lot (<i>would not have had a baby</i>) | 217 | (17.0) | 95 | (16.2) | 43 | (16.8) |
| Some (<i>concern but wanted baby</i>) | 618 | (48.3) | 281 | (48.0) | 137 | (53.5) |
| Not at all (<i>didn't think about it</i>) | 444 | (34.7) | 209 | (35.7) | 76 | (29.7) |
| | Any Subsequent Birth 2005-2008 by Finance Influence | | | | | |
| | Model * | | | | | |
| A lot | 63 | (29.0) | 30 | (31.6) | 14 | (32.6) |
| Some | 192 | (31.1) | 91 | (32.4) | 42 | (30.7) |
| Not at all | 166 | (37.4) | 79 | (37.8) | 31 | (40.8) |

Note: Each qualitative subgroup is a subset of participants in all groups to the left. Pearson chi-square conducted for categorical variable models between qualitative subgroups and the residual number of all respondents plus between respondents with and without a subsequent birth. Subsequent births reflect those recorded between the time of the 2005 target birth and December 2008. Only one subsequent birth per respondent included in counts.

* $p < .05$

Table 4.8

Insurance Coverage 2007 and Reason for No Coverage

| | All Respondents | | All Qualitative | | Pattern Coded | |
|-----------------------------------|-----------------|--------|-----------------|--------|----------------|--------|
| | <i>n</i> = 1288 | | <i>n</i> = 593 | | <i>n</i> = 258 | |
| Mother's Insurance Coverage: 2007 | | | | | | |
| | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) |
| None | 434 | (33.7) | 229 | (38.6) | 97 | (37.6) |
| Medicaid | 360 | (28.0) | 164 | (27.7) | 66 | (25.6) |
| Private through employer | 366 | (28.4) | 144 | (24.3) | 66 | (25.6) |
| Private not through an employer | 51 | (4.0) | 19 | (3.2) | 11 | (4.3) |
| State-sponsored plan (ie: BHP) | 123 | (9.5) | 57 | (9.6) | 24 | (9.3) |
| Military | 16 | (1.2) | 10 | (1.7) | 4 | (1.6) |
| Other | 29 | (2.3) | 12 | (2.0) | 8 | (3.1) |

Table 4.8 *continued*

| | All Respondents | | All Qualitative | | Pattern Coded | |
|---------------------------------|-----------------|--------|-----------------|--------|----------------|--------|
| | <i>n</i> = 1290 | | <i>n</i> = 593 | | <i>n</i> = 258 | |
| Child Insurance Coverage: 2007 | | | | | | |
| | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) |
| None | 88 | (6.8) | 48 | (8.1) | 18 | (7.0) |
| Medicaid | 863 | (66.8) | 405 | (68.3) | 176 | (68.2) |
| Private through employer | 278 | (21.5) | 107 | (18.0) | 51 | (19.8) |
| Private not through an employer | 30 | (2.3) | 12 | (2.0) | 7 | (2.7) |
| State-sponsored plan (ie: BHP) | 126 | (9.8) | 57 | (9.6) | 23 | (8.9) |
| Military | 14 | (1.1) | 9 | (1.5) | 4 | (1.6) |
| Other | 34 | (2.6) | 17 | (2.9) | 11 | (4.3) |

Table 4.8 *continued*

| | All Respondents | | All Qualitative | | Pattern Coded | |
|---|-----------------|--------|-----------------|--------|---------------|--------|
| | <i>n</i> = 425 | | <i>n</i> = 226 | | <i>n</i> = 95 | |
| Reason for No Insurance Coverage: Mother 2007 | | | | | | |
| | <i>n</i> | (%) | <i>n</i> | (%) | <i>n</i> | (%) |
| Lost job or changed employers | 44 | (10.4) | 25 | (11.1) | 11 | (11.6) |
| Divorced/separated from partner | 7 | (1.6) | 5 | (2.2) | 4 | (4.2) |
| Death of husband/partner | 0 | (0.0) | 0 | (0.0) | 0 | (0.0) |
| No employer coverage available | 170 | (40.0) | 89 | (39.4) | 36 | (37.9) |
| Cost too high | 279 | (65.0) | 142 | (62.8) | 56 | (58.9) |
| Ins co refused coverage | 27 | (6.4) | 15 | (6.6) | 4 | (4.2) |
| Lost Medicaid coverage | 124 | (29.2) | 69 | (30.5) | 30 | (31.6) |
| Other | 64 | (15.1) | 47 | (20.8) | 22 | (23.2) |

Note: Counts and percentages exceed 100% of sample size as participants could select more than one response option.

Insurance coverage for participants and their 2005 child is displayed in Table 4.8. Almost 34% of women in the total sample reported that they did not have any health insurance coverage at the time of the 2007 survey. Higher portions of participants in the qualitative subsamples reported no health insurance coverage. Twenty-eight percent of the total sample ($n = 1292$) reported that they relied on Medicaid for their current health insurance coverage and another 28% reported some form of employer-sponsored health insurance. Approximately 9.5% of participants reported insurance coverage through some other type of state-sponsored plan, such as Washington Basic Health. As participants were invited to check as many types of insurance that might apply to them, two or more types of coverage were reported by 87 participants in the total sample, with the most common areas of crossover existing between Medicaid and employer-sponsored insurance (41) followed by Medicaid and other state-sponsored coverage (30). When asked about insurance coverage for their 2005 child, almost 67% reported coverage by Medicaid and 21.5% reporting some type of employer-sponsored coverage for their child.

Women who reported having no insurance coverage in 2007 were asked about the reasons that they were uninsured at that time. Across sample groups, up to 65% reported that the cost to obtain coverage was unaffordable, followed by approximately 40% who indicated that employer-sponsored insurance was either not offered or that they were ineligible for that coverage. Another 30% indicated the loss of Medicaid coverage as their reason for being uninsured.

Four subthemes emerged from volunteered comments and survey responses and provide the foundation for this theme. Explored in order, these subthemes are *chronic*

financial stress, financial adequacy is relative, failure of the private insurance market and thankful for the safety net.

Subtheme 4.1: Chronic Financial Stress

In order to be eligible for the Medicaid Pregnancy Medical program in Washington State, the women in this study had to demonstrate household income at or below 185% of the Federal Poverty Level during the pregnancy that led to the birth of their 2005 child (Cawthon et al., 2009). For a family of four, this would be equivalent to a monthly household income of \$2,983 or less (U.S. Department of Health & Human Services, 2010). Through their comments and survey responses, not only did these women and their families have a history of financial stress, but this stress continued into 2007 with their expanded family. Participants reported their living/partner situation, the number of children in the household, and reported a range for their 2007 monthly income, which allowed approximation of their household financial status in relation to United States federal poverty guidelines (Table 4.9). Because the highest monthly income option that participants could select in the survey was “\$3,500 or more,” only a lower income threshold could be established for some participants, particularly for those with larger families.

Despite this limitation, at least 83.5% of all participants and at least 80.5% of those in the PCQual258 sample reported household incomes of less than 200% of federal poverty guidelines in 2007, with at least 31.3% of the total sample reporting incomes at 100% of poverty or below. The PCQual258 group reported a slightly lower portion of single-parent and three-person households and a higher portion of four-person households along with a slightly higher household income distribution in relation to poverty

guidelines. Regardless, this revealed that financial security for the majority of participants across the samples was tenuous, leaving them vulnerable to changes in their income and with limited capacity to participate in other aspects of economic security, such as health insurance.

The interface between financial status, financial stress, and health insurance coverage was evident in several participant comments. Some were brief and explicit about the tenuousness of their financial status, such as when this 29-year-old married woman with three children explained why she did not have health insurance: “even with both of us working we were living pay check to pay check.” Similarly, a 42-year-old woman who was married with one child and uninsured, reported “Husband was on Social Security (Medicaid disability), and I worked full-time to make ends meet.” Other participants reflected more extensively upon the fragility of their financial status despite being active in the workforce, such as this 24-year-old married woman with one child who did not have a subsequent birth recorded, but reported not using birth control in 2007 because it “costs too much”:

My husband and I work full time, however it is a self-employed retail business in its 2nd year. That's why our income is so low -> we're still trying to make this business work & pull out of debt. Thanks for the info about the Take Charge program.

Table 4.9

Household Size and Reported Income by 2007 HHS Poverty Guidelines

| Income level | Household Size: Total Sample (n = 1209) | | | | | | | | FPL Total | % |
|--------------|---|--------|--------|--------|-------|-------|-------|-------|-----------|---------|
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9-12 | | |
| ≤ 100% FPL | 48 | 112 | 107 | 62 | 27 | 13 | 7 | 3 | 379 | (31.3) |
| 101-150% | 33 | 108 | 122 | 93 | 32 | 13 | 1 | 1 | 403 | (33.3) |
| 151-200% | 18 | 91 | 88 | 30 | 1 | | | | 228 | (18.9) |
| 201-250% | 7 | 36 | 5 | | | | | | 48 | (4.0) |
| > 100% | | | | | | 12 | 1 | 6 | 19 | (1.6) |
| > 150% | | | | 29 | 17 | | | | 46 | (3.8) |
| > 200% | | 33 | 45 | | | | | | 78 | (6.5) |
| > 250% | 8 | | | | | | | | 8 | (0.7) |
| Family Total | 114 | 380 | 367 | 214 | 77 | 38 | 9 | 10 | 1209 | (100.0) |
| % | (9.4) | (31.4) | (30.4) | (17.7) | (6.4) | (3.1) | (0.7) | (0.8) | (100.0) | |

Table 4.9 *continued*

| Income level | Household Size: Pattern-Coded Sample (<i>n</i> = 236) | | | | | | | | Total | % |
|--------------|--|--------|--------|--------|-------|-------|-------|-------|---------|---------|
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9-12 | | |
| ≤ 100% FPL | 6 | 17 | 23 | 10 | 5 | 2 | 1 | | 64 | (27.1) |
| 101-150% | 6 | 17 | 28 | 16 | 8 | 3 | | | 78 | (33.1) |
| 151-200% | 3 | 22 | 19 | 4 | | | | | 48 | (20.3) |
| 201-250% | 2 | 8 | 1 | | | | | | 11 | (4.7) |
| > 100% | ----- | | | | | 4 | | 1 | 5 | (2.1) |
| > 150% | | | | 5 | 5 | | | | 10 | (4.2) |
| > 200% | | 5 | 14 | | | | | | 19 | (8.1) |
| > 250% | 1 | | | | | | | | 1 | (0.5) |
| Family Total | 18 | 69 | 85 | 35 | 18 | 9 | 1 | 1 | 236 | (100.0) |
| % | (7.6) | (29.2) | (36.0) | (14.8) | (7.6) | (3.8) | (0.4) | (0.4) | (100.0) | |

Note: Participants assigned to a “greater than %” category selected “\$3,500 or more” as their household monthly income, which prohibited assignment of an upper income level boundary for their reported family size. Federal Poverty Level (FPL) assignments adapted from U.S Department of Health & Human Services (2010). *2007 HHS poverty guidelines*. Washington D.C. Retrieved from <http://aspe.hhs.gov/poverty/07poverty.shtml>

Other participants spoke to how evolving life situations and expenses impacted their ability to maintain some degree of financial stability. A 22 year-old-woman, who reported having one child, living with a partner, and being currently pregnant with her second child, described their financial insecurity while trying to build a family:

Although I am on DSHS Medical its just me and my daughter. My daughters father (my partner) makes decent money but he has a 4 year old daughter that we get 3 weekends out of the month with a pending child support custody battle going on right now. We are paying a lawyer money and rent and we are broke all the time. we cant pay anything on time and my health hasn't been the best lately. my daughter goes to the doctor when needed and the medical coupon is the only thing that helps cause we cant afford medical right now. Thank you!

Finally, others reflected on how unexpected circumstances disrupted their earning potential, including this 31-year-old married woman with 2 children whose only health insurance coverage was under the Medicaid Pregnancy Medical program:

FYI our current situation is due to my husband being out of work at his normal job because of an injury off the job that keeps him from performing his normal duty. Because of our income dropping drastically I am able to receive a medical coupon. In normal circumstances we would be in the 2500-2900 bracket & I would not be on the insurance I am on now.

Notably, the “normal circumstances” income reported by this participant would locate her between 150% and 200% of 2007 federal poverty for a family of four.

Subtheme 4.2: Financial Adequacy is Relative

The previous quotation serves as a meaningful introduction to this subtheme. Implicit in that participant's comment is that her family's "normal circumstances" income was adequate for raising her children, a perspective not necessarily held among persons of higher socioeconomic status. While the participants in this study represented Washington State residents with low incomes, financial stress and limited ability to access commercial health insurance, financial status mattered "A lot" in the pregnancy decision making for less than 20% of participants and health insurance coverage mattered "A lot" for less than 30% (Tables 4.7). The message that participants conveyed in their survey responses and comments was that the interface between achieving their childbearing goals and the perceived financial adequacy for doing so was a matter of perspective, localized in their past experiences, situation, and information available.

When participants were asked in the survey about the influence of finances in their decision to have a baby, the most common response was "some". While a vague response, vulnerable to rationalization and feelings about how their responses might be viewed, what added meaning to this response was the example statement offered to participants: "I was concerned about money, but I/we really wanted this baby." Many participants combined this response with other survey responses indicating desire for having more children in the future and/or offered comments indicating positive feeling toward pregnancy and raising children. Of the 51 participants assigned the open codes of *Child-desire* or *Emotion-happy*, almost all indicated that finances mattered "some" or "not at all" in their decision making. Many participants who offered more extensive comments regarding financial adequacy and childbearing have been introduced

previously in other themes and subthemes, particularly *achieving childbearing goals, the implicit plan, pregnancy as providence, the value of children* and the introduction to this theme.

Among participants who selected “some” or “not at all” regarding the influence of finances in pregnancy decision making, several shared brief supportive comments associated with other survey questions, particularly their interest in future childbearing. Examples of these responses reflecting their desire included: “very very very upset,” “I would love to have more children,” and “can't have any more children (frowning face drawn).” These comments point to how these participants would feel if they had no more children, as does another participant responding “I am and not upset” when asked how she would feel if she was pregnant now. Another participant briefly summarized this perspective in her comment; “We choose the spacing of our children based on the need level of the children already in our family and somewhat on finances.” The following participant, previously introduced in the theme *Traditional Values*, offered her perspective on financial adequacy and childrearing and parenthood:

Are we rich? Not by most people's standards. We own our home, both cars are paid for, I don't have a dishwasher, I don't work outside the home, my husband makes roughly \$2400/month but we have food on the table at every meal. Which, by the way, we all eat sitting down together morning and evening. We could have more, but why sacrifice precious time with our kids by me working to pay for an expensive car (unnecessary), or throw the kids in daycare to an underpaid teenager, or give our kids so many extracurricular activities that it robs them of time spent together as a family?

As a dimension in pregnancy decision making, insurance appears more influential in participant responses, but more confounders appear to exist. Approximately 30% of participants indicated that insurance mattered “a lot” in the decision about their 2005 pregnancy, but this response by some participants may have been influenced by their past experiences and/or information about the availability of the Medicaid Pregnancy Medical program, which covered their maternity care. Several participants offered responses suggesting how awareness of Medicaid coverage mediated the gap between being low income, uninsured or underinsured, and their interests in having children. Examples included: “When I got pregnant I felt comfortable knowing I would be covered. Washington State is above the rest in the country. I couldn't have gone through the process without Medicaid;” “My insurance didn't cover me 100%, I knew without income I qualified for Medicaid if I got pregnant;” and “I was aware of state subsidized programs that we could look into.” In her comments another 27-year-old married participant, who was about to have her second child summarized a combination of thankfulness, awareness of resources, and her relativism on the weight of finances in childbearing decisions:

We are blessed by the help that the state of Washington offers to us. Having children and raising a good family is not just about financial status. I just wanted to note that not all women who get assistance through the state/government are uneducated and irresponsible in their choices of when they have children or how many they have.

Subtheme 4.3: Failure of the Private Insurance Market

Regarding access to employer-based and other traditional health insurance, the participants in this survey represented a major challenge facing the working poor and the perspective of “outsiders looking in” to this element of economic security. One 31 year old woman, who reported being married with two children, reflected upon her families impending transition to the ranks of the uninsured:

Our family is bummed because soon we will be just over the income mark for DSHS (kids) and Basic Health (my husband and myself). Then what do we do? Everything out there is so expensive and is only catastrophic policies. We need better, affordable health care for low-mid income people. Thank you.

As depicted in Table 4.8, only about 30% of survey respondents reported having some type of private insurance coverage, whereas over 60% of participants were either uninsured or had Medicaid coverage and another 9% reported participating in some other type of state-sponsored coverage such as Washington Basic Health. Of the participants (28.4%, $n = 366$) who indicated that they had private employer-sponsored coverage, 41 also reported that they had Medicaid coverage, suggesting that a combination low income and limited insurance benefits allowed them to qualify for Medicaid. Among the 34% of participants who reported being uninsured, 65% indicated that the cost of obtaining coverage was unaffordable and 40% responded that no employer-sponsored coverage was available (Participants could select more than one response among the options). This distribution was similar across sample groups. By 2007, 66.8% ($n = 863$) of the children born in 2005 to all respondents were still covered by Medicaid.

Access to private insurance coverage in the United States is typically tied to employment. Cawthon and colleagues (2009) noted shifts in employment status for participants between the time before their target birth and the time of the survey, with fewer reporting full time employment and the percentage reporting their primary status as homemaker increasing from 23.1% to 33.3% and those who reported being unemployed increasing slightly from 6% to 7.2%. Although the total percentage of women reporting some type of insurance coverage increased from 2005 to 2007, this change was attributed to a 10% increase in employer-based, state-sponsored, or military insurance plus a 16% increase in Medicaid coverage, which includes repeat participation in the Pregnancy Medical Program (Cawthon et al., 2009). The role of Medicaid pregnancy coverage is highlighted by the following participant reflecting on the time leading up to her 2005 pregnancy: “The only time I had health insurance was probably just during my pregnancies. Was uncovered for about three years.”

Participants discussed several barriers regarding their ability to participate in the private insurance market, highlighting various facets of affordability and gaps, particularly for women. Of the women who reported being uninsured, 40% indicated that it was because their employer did not offer health insurance. Some offered additional comments including: “My husband's job did not offer any and I was stay-at-home mom,” “Mainly because my full time employer didn't offer health insurance,” “Not only did the employer not offer it, but I didn't qualify for the state and anything you can get on your own is too expensive,” and “At beginning of pregnancy, (my) employer didn't offer ins. for amt. of hrs. I worked.”

Even when employers offered health insurance coverage, it was not always accessible to the women. Participants shared some situations where they were not able to enroll on plans as dependents: “I am not married so I do not get my partner's coverage,” “not able to get on boyfriends insurance,” “not married to partner, state won't cover unless pregnant,” “parents' insurance doesn't cover pregnancy of dependants,” “over 18 / not in school,” and “had just graduated from college did not qualify yet at new job.” Others found themselves in a time gap between having insurance offered and being eligible for it: “have to wait till open enrollment,” “Wasn't up for eligibility (open enrollment),” “had to wait 6 month for insurance,” and “My husband just got a new job so he didn't have coverage.”

Beyond eligibility, it was not uncommon for women to comment on being the only uninsured member of the household due to the cost of adding dependents to her partners plan, including variations of: “To add me to my husbands work cost is too high.” Other participants elaborated further on residing in the gap between unaffordable employer coverage, but having income that exceeded the thresholds for state assistance:

I currently don't have any health insurance for myself or children because (1) It costs too much at my job. (2) I live with my boyfriend and we make too much to qualify for Medicaid benefits. My daughter is behind on her immunizations because of this. I don't qualify for WIC either, which is a bummer because it is a great program. Is there any kind of insurance that we might qualify for, at least my children? Please feel free to contact me at (address given).

Another participant added an emphatic plea to her responses:

Why is it that working parent can't get medical assistance My husband and I are both working full time and the benefits offered are too expensive, we can't afford to get insurance for ourselves. HELP US THERE & OUR CHILDREN.

Even when they had private insurance coverage, participants commented on the gaps that they experienced that limited the utility of their coverage and often required the addition of Medicaid coverage. Some respondents conveyed their discovery that pregnancy was an excluded condition: “Insurance doesn't cover maternity; waiting on husband's insurance,” “Pregnancy was considered pre-existing condition,” and “insurance company did not pay for actual delivery.” In other cases, coinsurance requirements and/or unusual situations that exposed the limitations of their insurance: “we had catastrophic coverage only,” “had insurance (private) but did not cover a lot,” “High deductible,” and “we went on Medicaid because our baby was premature and we could not afford the deductible we had at the time.”

While it was not uncommon for participants to report self-employment, less than three percent of respondents reported that they had private insurance that did not originate from an employer. Reinforcing this low percentage and reflecting the volatility of the individual insurance market, participant comments conveyed that this option posed yet another economic hurdle for insurance access. Examples include: “my husband is self-employed so it is really expensive,” “Husband - self employed - can't afford,” “I was watching 2 children full time & didn't make enough money to pay for insurance,” “Construction workers usually don't have health insurance. The cost is so high,” and “My husband started his own business and we can't afford the cost of health insurance.”

Subtheme 4.4: Thankful for the Safety Net

While participants shared their distress regarding gaps in access and cost of private health insurance, they just as readily conveyed their appreciation for Medicaid insurance coverage for their pregnancy, for their children and for the associated state-funded services to support their pregnancy and childbearing. Comments expressing thankfulness for pregnancy-related safety net insurance and services were among the most common comments volunteered by participants. While the majority of respondents offered a brief, general expression of thanks, 37 participants offered more extensive and descriptive comments to warrant assignment of the open code “thankful”. In conveying their appreciation, participants revealed the function and purpose of Medicaid and related safety net services toward addressing key needs of vulnerable women and their children. Most participant comments reflected upon Medicaid coverage for their pregnancy and children, briefly describing their specific experiences or situations, such as this woman who had her first and only child at age 38:

I thank God for all of the help I received during and after my pregnancy! Having my baby has been a blessing like no other. Having insurance made it all possible. At first I had no idea of all the help there was available. With that help, I was able to make a dream come true. Thank you!

Another participant, 33 years old, married and whose second child was born in 2005, shared a repeating story of how Medicaid supported their unexpected situation:

I will never be able to thank you enough for receiving medical coverage during my last pregnancy. It came at a time we never thought we would need something like that. My husband lost his job very suddenly. Cobra insurance wanted \$900.00

a month for a family of three which was not possible for us. My husband did get another job right before I had my son but since it was contract work no insurance was available A situation we did not expect to find ourselves in and very grateful there were services to help us. Thank you very much!

Another woman, 40 years old and married with two children, extended the perspective of how Medicaid supported them as their situation evolved:

We are very grateful for the assistance we received while our finances were low. Now that we are in a better place financially and we no longer need assistance we can truly appreciate our health insurance.

Finally, this 27-year-old participant, married and pregnant with her second child, conveyed both her individual and more global appreciation: “I am thankful for the services offered through DSHS; for myself & my family & also for all the other women & families that cannot afford the high costs of health insurance.”

Some expressions of thankfulness were more focused, specifically regarding the *TAKE CHARGE* family planning program. This is unsurprising given the survey being named *TAKE CHARGE Evaluation* and several questions focused on contraception access, use, and family planning. While similar participant comments are seen in the subtheme *Contraception Counts*, some focused their comments specifically on how subsidized family planning programs addressed access and affordability issues, as well as scope of services. This 28-year-old participant, married and with one child, commented on each of these characteristics as well as how family planning programs helped partially fill a gap for uninsured women:

I think that this program is very necessary to help prevent unintended pregnancies and to increase awareness about female sexual health. I am very grateful that I have qualified for this program and I hope that I will be able to renew it when it expires in the next couple months. The Nuva Ring has been great.... I would have never been able to afford this type of birth control without this program or insurance. I also would not be able to get an annual exam, with pap test that I feel is so important to my health.

While expressions of thankfulness dominated the volunteered comments, this was not exclusively so. Several participants expressed frustrations, disappointments, or opinions about gaps they experienced surrounding access or service. As introduced in the subtheme *chronic financial stress*, the transition from having insurance coverage during pregnancy to being uninsured was the most common, as this 24-year-old, married participant shared:

I had DSHS medical coupons for myself throughout my pregnancy. They immediately transferred medical to my child, which was great, but they cut off my medical, including birth control checkups, 2 months after my child was born.

She continued with her comment, indicating how this and the subsequent “cut off” of her child’s coverage influenced her opinion:

As far as the state is concerned, I think they are completely corrupt. They think that it is ok to deny aid to families in need. They would rather waste taxpayer money on lazy people who won't work, and drugs and alcohol addicts. I would rather pay money for health care than ever have to deal with our corrupt and racially biased state aid.

Another participant added her emphasis on the potential impact associated with loss of coverage:

I am more concerned with health insurance. If a child can qualify then they need to make sure that the parents can qualify. If something happened to me, my family would be done and I am the only one who does not qualify.

Other participants reflected upon gaps or perceived inequity that they experienced in the process of seeking coverage or interacting with program staff, including: “I called the family planning nurse several, being 4 or 5 times no call back. This was before my 2005 baby. I didn't know if she could help me get tubes tied or not;” “There were many other issues I had surrounding the birth & had no information or help from Medicaid, my doctor, or the hospital,” “When I tried to get help from TAKE CHARGE they denied it to me because I did not meet requirements as of how long I had been a resident in the USA. I think that is not a good practice;” and “I wish that I could qualify for food stamps since I am a single mother with five children (and non-citizen women with children qualify for programs that I can't even though I'm a citizen and they're not.)”

While participants expressed their distress or disappointment about loss or gaps in coverage, few comments supported the stereotype of entitlement among Medicaid recipients. Only nine comment segments were coded with the open code *opinion – entitlement*. Examples include: “It would be great if you could give me full med ins that is all because there is no point just to have birth control all or nothing,” “b/c my husband makes too much money, they won't give insurance for me they give insurance for my kids only,” “Birth control for everybody should be free!,” and “I think that what you should really focus on is making it much easier for women to get full insurance.” As

introduced in the theme *Traditional Values*, it was more common for these women to express values for self-reliance, feeling stigmatized, or repeating these stereotypes themselves. This 22-year-old unmarried woman, who had her second child in 2005, eloquently expressed her opinion on entitlement and self-responsibility:

D.S.H.S. is a good program if you are in need and can't find a job fast enough.

But it's only good if you need it! Not to take advantage of if you don't because there are people out there that truly need it!!

Finally, beyond their expressions of thankfulness or opinion toward services, many women expressed appreciation for being invited to share their perspective through the survey, hopeful that their comments might help contribute to the program and for the incentive payment to complete the survey. While many were filtered in the initial screening process, some variation of “Thanks for the \$5” was the most common phrase among survey responses. The following participant characterized many expressions of appreciation about being included and valued:

I would like to thank you for allowing me to participate in this survey. I did not know about this program. Now that I do, I can have a birth control method at all times w/out worrying about the price. Also it is nice to know that you care enough for us women to do this survey. Whether it is just to get information needed or to better the program. Thanks again, very informative.

Summary: Aims of the Study

Three aims were proposed at the outset of this study: (1) Describe the characteristics of women with a recent Medicaid-funded birth, including any patterns associated with their pregnancy interests, (2) to describe the contraceptive strategies employed by recently

pregnant women and any perceived factors that contributed to their pregnancy, and (3) to describe the expressed attitudes of recently pregnant women toward pregnancy, childbearing and contraception. Elements of these aims are embedded within the themes derived in this analysis as well as transcend them. The purpose of this summary is to identify the connections between themes and study aims.

Aim 1: Describe Characteristics and Patterns

With limited exceptions, participants demonstrated similar demographic characteristics across sample groups. Those in the PCQual258 qualitative subsample had higher average age, higher average age at first birth, higher portions who experienced their first birth over age 30, higher rates of marriage, and higher education attainment. Participants were older at first birth and demonstrated higher attainment on general socioeconomic measures than other Medicaid enrollees. However, in relation to the general population, the average age of participants at first birth was younger and a higher portion experienced their first birth at age 19 years or less.

Chronic financial stress and lack of insurance characterized these participants and many women volunteered comments on this, some desperate and empathic. Over 80% of participants reported household incomes less than 200% of federal poverty guidelines, 67% of children were covered by Medicaid, 34% of women were uninsured and an additional 28% of women had insurance through Medicaid. However, participants infrequently reported insurance and finances as factors in pregnancy decision making, with 23.3% of PCQual258 participants indicating insurance as mattering “A lot” in decision making and 16.8% responding in that manner about finances. Participant comments suggested that perceptions of financial adequacy for childbearing was relative

in comparison to childbearing goals and their life experiences, and awareness of safety net services may have influenced their responses regarding insurance. Participants who responded that insurance and finances mattered “some” or “not at all” were more likely to desire pregnancy and demonstrate higher rates of subsequent birth.

In their pattern of future-oriented survey responses and comments, women presented a continuum toward achieving their childbearing goals. The pattern coding process for the 258 participants in that sample revealed 22.9% desiring future pregnancy, 61.2% wishing to avoid pregnancy in the next year or beyond, 10.5% with ambivalent responses, and 5.4% who could not be assigned a pattern because of their current pregnancy. While the general distribution was similar, there was a significant difference revealed in future pregnancy intention between the single future intention survey question and pattern coding, with pattern coding demonstrating higher portions of women who desired or were ambivalent about future pregnancy and a lower portion who wished to avoid pregnancy in the next year or beyond. Within these patterns, participants revealed both congruence and incongruence between their desires and the behaviors they described, particularly surrounding their choice and use of contraception. Among women in the PCQual258 sample, ambivalent responses regarding pregnancy declined significantly from 60.3% regarding the participant’s 2005 birth to 11.1% regarding their future intention in 2007, with a similar, but more dichotomous, pattern demonstrated in the total sample. Ambivalent patterns were multifaceted, and resulted in subthemes of *evolving desires, letting nature take its course, outside my control* and *couldn’t happen to me*.

Women who indicated desire for future pregnancy more commonly were married or living with a domestic partner, experienced their first birth in 2005, expressed desire for more children, did not indicate insurance or finances as a decision priority, identified their occupation as homemaker, expressed explicit faith beliefs, expressed happiness or positive values toward children, and used a less effective or no birth control. Of the women in the PCQual258 qualitative sample who expressed desire for pregnancy, 22% experienced a subsequent birth in the 8 to 21 month period following the survey, contracted to the 5.7% incidence of subsequent birth among women who wanted to avoid pregnancy. Some women demonstrated an incongruent pattern by expressing desire for pregnancy while reporting use of a more effective birth control method or sterilization. Comments by users of more effective methods suggested some were highly engaged in pregnancy planning and were using birth control to achieve their timing-spacing desires or to balance childbearing with other priorities. Women who reported both desire and sterilization commonly populated the *ambivalent pattern outside control* where sterilization or hysterectomy occurred for health reasons.

Women who wished to avoid a future pregnancy most frequently indicated that they had the number of children that they desired and had achieved their childbearing goals. Nearly one third of the women (31.8%, $n = 82$) in the PCQual258 sample were assigned the *met childbearing goals* pattern code. Only one of these 82 women experienced a subsequent birth in the 8 to 21 month period following the survey, contrasted to 25 births among the remaining 176 participants. Women assigned the *met childbearing goals* code more commonly reported use of more effective contraceptive methods, specifically IUD and female or male sterilization. A higher portion of women

who wished to avoid pregnancy had experienced their second or a higher order birth in 2005. Women who wished to avoid pregnancy because they met their childbearing goals shared similar demographic characteristics and attitudes with participants who desired pregnancy and were in the process of meeting their childbearing goals.

Another group of women wished to avoid future pregnancy. These women more commonly reported being single and/or in an unstable partner relationship, commented that their 2005 pregnancy was unplanned, indicated a health condition that would increase pregnancy risk, and more commonly indicated insurance or finances as mattering “a lot.” Little homogeneity was demonstrated among these participants and they reported a wide variety of birth control methods. “No sex” was most commonly reported by individuals who were unmarried or separated/divorced and the participants who reported this as their birth control method experienced a 20% subsequent birth rate, similar to women who reported that they did not use contraception. These women typically populated the incongruent pattern of *avoid-vulnerable*. Other women who wished to avoid pregnancy were assigned an incongruent pattern because they reported use of a less effective birth control method. Some of these women also demonstrated an *ambivalent* pattern, such as *passive* or *mixed feelings*, but others shared comments suggesting that they were highly engaged users of these less effective methods. Commonly, these women expressed concern or aversion toward hormonal or “artificial” birth control.

Aim 2: Describe the Contraceptive Strategies Employed

Women reported a variety of contraceptive methods used in the two months prior to the survey and were invited to report more than one type if that applied to them.

Among women in the PCQual258 subsample, women most commonly reported use of male condoms (17.8%), IUD (14.7%), withdrawal (14.3%), female sterilization (12%), birth control pills (12%), no sex/abstinence (9.3%), male sterilization (7.4%), and natural family planning (6.6%). All other methods were reported by 3.5% or fewer participants. When combined, female and male sterilization was reported by 19.4% of participants, making sterilization the most commonly used contraception. Sterilization was reported almost exclusively by women who wished to avoid pregnancy and had met their childbearing goals, although some expressed ambivalence and co-populated the *outside control* pattern, typically having experienced sterilization for health-related reasons. This was similar for those who used the IUD for contraception, although there were more women (3.1%) using the IUD who desired future pregnancy. Some of these women suggested that they were highly engaged in their planning, with one offering an explicit timing-spacing plan for removing her IUD and attempting pregnancy.

Over 60% of all women in the PCQual258 sample wished to avoid pregnancy in the next year or beyond and these women most frequently reported use of a more effective birth control method, predominantly sterilization, IUD, or birth control pills. Some participants reported dual use of birth control pills and male condoms. Women who wished to avoid pregnancy and reported using less effective methods most commonly used male condoms and withdrawal, with several reporting both methods and combinations with natural family planning. In pattern coding, some women offered comments suggesting high engagement and diligent use of less effective methods, where others reflected ambivalence toward future pregnancy.

Of the 24 PCQual258 women who reported “no sex” for their birth control method, 20 wished to avoid pregnancy and most commonly reported being without a partner or separated. As previously noted, these women experienced subsequent pregnancy rates similar to those who reported “none” for birth control. Since contraceptive use was derived from survey responses verses qualitative coding, some disconnect was noted between those who wished to avoid pregnancy and reported “none” for birth control method. Of the ten women who reported “none,” six were assigned the related *incongruent* pattern code of *avoid+noBCM* . The other four women indicated sterilization in different responses and may not have considered being sterile a contraceptive method. These women would have been assigned a *congruent* pattern code of *avoid+sterile* . Of the remaining six assigned the incongruent pattern, three were recently postpartum and co-assigned an *evolving* pattern code and three co-assigned an *ambivalent* pattern.

Among women who expressed desire for pregnancy, most reported using no method or a less effective method. The less effective methods almost exclusively included withdrawal, natural family planning, and condoms, either alone or as combinations. The incongruent pattern of those reporting use of IUD and pregnancy desire was described in the previous section.

Whether explicitly planned or not, comments from the majority of participants revealed that their pregnancies were desired and they were achieving their childbearing goals. Among participants whose responses indicated that their 2005 pregnancy was unplanned, none added unfavorable comments. Of the 15 participants who commented about a contraceptive failure, eight suggested that they were consistent users of more

effective methods, including birth control pills (3), injection (3), IUD (1), and vasectomy (1). While not a direct contraceptive failure, two participants shared comments about becoming pregnant while waiting for sterilization. Few participants in the PCQual258 sample reflected on a reason for becoming pregnant, but several were revealed from question-specific coding in the larger Qual593 sample. These populated the *couldn't happen to me* subtheme. Most common comments conveyed overestimation of their contraceptive strategy, specifically breastfeeding, as well as perceptions of infertility, either related to recent postpartum status, prior sexual experience without conception, or medical conditions. Other typical comments revealed inconsistent birth control use, indifference, and dissatisfaction with birth control, most commonly hormonal methods. Less commonly, participants described lapses in judgment, being caught in the passion of the moment, substance-related impairment, and impaired decisional capacity.

Aim 3: Describe Attitudes toward Pregnancy, Childbearing and Contraception

Comments offered by participants overwhelmingly reflected favorable attitudes toward pregnancy, childbearing, and children. None of the women shared overt expressions of unhappiness or regret toward their pregnancy, their 2005 child or their other children. The comment closest to expressing any dissatisfaction toward childrearing was the qualifier "...even with its trying times," added to a participant's otherwise favorable comment about being a mother. Whether brief or extensive, multiple participants volunteered comments expressing the value of parenting and of children to family and society.

Participants commonly reflected traditional or family-focused values in their responses and comments, which formed the foundation for a main theme. These included

values, attitudes, and achievements toward marriage, education, employment, self-reliance, faith, nuclear families, larger families, homemaking, and the role of children.

While relatively small in number, women who expressed faith beliefs offered particularly explicit and passionate comments, particularly regarding duty in childbearing, pregnancy as a divine decision, and objection to contraception, particularly hormonal or “artificial” birth control. These provided the basis of the subtheme *pregnancy as providence*.

Related but not necessarily linked, a few participants expressed their disapproval of premarital sex. Additionally, women expressed feelings of stigma from providers and social services agencies for being low income on Medicaid, being pregnant, and/or desiring larger families.

Over half (57.4 %) of all participants reported they were married, which increased to two thirds (64%) in the PCQual258 subsample. Combined with women who reported living with a partner, over 84% reported a two-adult household. Beyond a few comments that discussed mutual planning processes, the role of the husband and partner in attitudes and decision making was relatively opaque. However, women who were married or in a domestic partner relationship more commonly expressed either desire for pregnancy, were in process toward meeting their childbearing goals, or had achieved their desired number of children. Additionally, partners held a key role in contraception, whether through condom use, practice of withdrawal, or through obtaining male sterilization. More explicitly, unmarried women without a partner, divorced/separated women, or those who described an insecure relationship most commonly indicated that they wanted to avoid pregnancy, both through survey responses and comments.

Across sample groups, approximately 80% of the women agreed or strongly agreed with the use of birth control for pregnancy planning, about 4% disagreed or strongly disagreed, and approximately 16% expressed a neutral opinion. Among women who agreed with the use of birth control, almost 63% reported use of more effective methods and demonstrated significantly lower percentages of both subsequent birth and short inter-birth intervals. Those who disagreed with the use of birth control more commonly shared comments about faith beliefs. Those who disagreed or expressed a neutral opinion regarding birth control more commonly reported use of no method, “no sex,” or a less effective method, and were significantly more likely to experience a subsequent birth and experience one or more short inter-birth interval less than 21 months.

Women expressed that access to contraception was important to them and several shared how this access helped them achieve their goals. Additionally, a few women expressed their opinion that access to contraception was important to preventing teen pregnancy. Some expressed that improved access to contraception was warranted. Several women shared specific comments and frustrations regarding difficulty accessing male sterilization services through Take Charge or other subsidized programs and two added their opinion that the burden of contraception or risk of sterilization was placed on the woman.

Among the women who agreed with the use of birth control, 20% reported use of less effective methods and aligned with volunteered comments about avoiding hormonal or “artificial” birth control. Most common comments included preference for natural family planning, “artificial” birth control being against their beliefs, side effects of

hormonal contraception, interference with breast feeding, and perceptions that birth control was harmful.

Women shared their experiences of chronic financial stress and difficulty accessing insurance. Women frequently commented on barriers to access insurance, whether private, employer-based, individual, state-sponsored or Medicaid, yet revealed that insurance and financial held limited weight in their decisions or intentions toward pregnancy and childbearing. Women suggested that insurance access and financial adequacy for childbearing were relative when compared to their desire for their achieving childbearing goals and situated in their past experiences, values, priorities and awareness of resources. While they shared concerns regarding stigma and barriers to access, women broadly expressed their thankfulness for being able to access insurance coverage for their pregnancy, for their children, for contraception, and for other safety net services.

Summary

This chapter reviewed the analysis and findings of this study, including a demographic description of participants by sample category, plus integrated results from quantitative and qualitative analysis of data. The intention of this chapter was to describe the findings from a naturalistic viewing position while remaining data near with limited abstraction. Analysis generated four major themes and 17 supportive subthemes. Results were then summarized in relation to the proposed aims of the study.

In chapter 5, these results will be extended to potential interpretations, relationships to other literature and research, and potential implications for policy and clinical practice. Additionally, the strengths and limitations of the data and this analysis will be explored.

CHAPTER 5

Discussion

The purpose of this research was to expand the knowledge and understanding of factors and forces that influence sexually active women in their pregnancy decision making, including the initiation and use of contraception among those who wanted to avoid or delay pregnancy. This research intended to contribute to the body of knowledge toward informing programs, policies, and future research in unintended pregnancy prevention. This chapter reconnects the demographic and thematic findings of this study with the research purpose as well as with previous research, topical literature, and temporal events. In Chapter Four, qualitative and quantitative methods were integrated from a naturalistic viewing position to generate descriptive findings and themes. In this chapter, two key messages that reside within and cut across the four themes will be extracted and discussed. Additionally, implications for clinical practice, public policy, and research, plus the limitations of this study will be discussed.

Thematic Messages

Two key thematic messages about the participants and the factors influencing their pregnancy decision making processes emerged from the four themes and seventeen subthemes. The first thematic message asserts that participants were *like everybody else, but living on the edge*. In their responses and comments, women in the qualitative subsample revealed that they represented a cross-section of the population with characteristics, goals, interests, values, and childbearing desires that could characterize the general population of Washington women, with economic security as the significant exception.

The second thematic message that emerged is that *ambivalence is prevalent, multifaceted, and perhaps self-protective*. Ambivalence toward pregnancy and childbearing is not a one-dimensional phenomenon, but arises and evolves in various contexts, has a significant association with subsequent birth, and may offer a mechanism for expressing desire in a self-protective manner.

Like Everybody Else, but Living on the Edge

Stigma and stereotypes of government program participants are pervasive and have been associated with decreased enrollment in programs for which individuals and families are eligible (Stuber & Kronebusch, 2004; Stuber & Schlesinger, 2006). The comments from women in this study revealed not only the presence of stigma, but when combined with demographic data, suggest that Medicaid enrollees cannot be considered a homogenous population. The women in this research may share characteristics more similar to the general population of Washington State women than to participants in other Medicaid and public assistance programs. While exhibiting demographic characteristics similar to the total sample, the women in the primary qualitative subsample (PCQual258) differed in important ways, demonstrating higher education attainment, older average age, older average age at first birth, smaller proportion of first births in 18 to 24 years age range, larger proportion of first-births age 35 years and older, higher percentage reporting marriage, higher proportions reporting monthly household income at \$2,500 or more, and greater proportion identifying themselves as white. These characteristics gradually but progressively differentiated the PCQual258 subsample from all survey participants, as well as from all Program S women and participants in the Temporary Assistance for Needy Families (TANF) program (Cawthon et al., 2009; Cawthon et al., 2008). On most

demographic measures, PCQual258 sample participants represented one pole in the spectrum of Medicaid enrollees and more closely approximated the Washington State average for all women who gave birth in 2005 as well as approximating some characteristics of non-Medicaid women (Cawthon, 2011; Cawthon et al., 2008; Center for Health Statistics, 2013).

Not unlike other women in their reproductive years, participants in the PCQual258 sample appeared to reflect a continuum with respect to achieving their childbearing goals, whether or not these goals were explicitly articulated. Women who appeared to have met their childbearing goals or were in process of meeting their goals, often pregnant at the time of the 2007 survey, demonstrated similar demographic characteristics. Similarities included the number of children they had, the number of children they hoped to have, their intention toward future pregnancy, and the contraception they employed. While less than a quarter of study participants reported that they were trying to get pregnant for their 2005 birth, many expressed happiness toward childbearing and parenting and none conveyed dissatisfaction, even among the few who mentioned that their pregnancy was unplanned or the result of a contraceptive failure. Women who appeared to have met their childbearing goals commonly reported sterilization or IUD as contraceptive methods and subsequent pregnancies were rare. These women were more likely to have had their second or a higher order child in 2005.

In contrast, women who expressed ambivalence or desire for pregnancy were significantly more likely to have experienced a subsequent birth by December 2008. This was congruent with the findings of Cawthon and colleagues (2009) in their comparison of participants' pregnancy desire and contraceptive methods with subsequent births in the

initial 33 months following the birth of their 2005 child. Prior research has connected explicit or latent expressions of desirability for pregnancy with subsequent childbearing, as well as the expressed desire to delay or stop childbearing with the use of more effective contraceptive methods and lower incidence of subsequent birth (Santelli et al., 2009; Speizer et al., 2004; Williams et al., 1999). Additionally, these results are consistent with the research that has questioned the interpretive utility of conventional retrospective pregnancy intention measures (Luker, 1999; Sable, 1999; Santelli et al., 2009; Santelli et al, 2003; Trussell et al, 1999).

As one might expect from other women in their childbearing years, participants expressed a range of values and characteristics resonant with a broad cross section of the population. These included marriage, employment, self-reliance, faith, nuclear families, the role of children, larger family size, and homemaking. Perhaps influenced by the nature of the survey, participant comments focused more on family and homemaking and less on the attainment of education or career goals. It was more common for participants to describe “working” in general terms of household income, self employment, or the employment of her husband or partner. This parallels the findings reported by Cawthon and colleagues (2009) who described a shift in reported employment status as homemaker from 23.1% prior to the participants’ 2005 births to 33.3% in 2007. In studying transition to parenthood, Finnish researchers similarly found an increase motherhood-related goals during pregnancy, followed by an increase in family-focused goals after childbirth and less interest in career-related goals, particularly among primiparous women (Salmela-Aro et al, 2000).

Over 64% of PCQual258 women in this study reported being married in 2007. This approached the 69% average for all Washington women who gave birth in 2005, but was well below the 91.4% marriage rate for non-Medicaid women (Cawthon, 2011). However, when combined with women who reported living with a partner, the number of participants reporting a two-adult household rose to 83.4%. In contrast, the marriage rate for all Program S women who gave birth in 2005 was 55% and the Medicaid average was even lower at 44.6% (Cawthon, 2011; Cawthon et al., 2009). While not explicit through the survey, husbands and male partners appeared to play a significant role in pregnancy decision making, from their participation in contraception, to family economic support, to participant comments about mutual pregnancy decision processes. In contrast, women who reported unstable, dissolved, or absent-partner relationships most commonly indicated that they did not want to become pregnant in the next year.

These findings are consistent with prior research that has connected pregnancy desire with marriage, more stable partner relationships, and desire to have a baby with a specific partner, as well as the connection between unstable partner relations and the decision to seek an abortion (Kaye et al., 2009; Kendall et al., 2004; Santelli et al., 2009; Santelli et al., 2006; Santelli et al., 2004). Notably, women who were separated or without a partner commonly reported “no sex” for their contraceptive method and wanted to avoid pregnancy but demonstrated subsequent pregnancy rates similar to women who desired pregnancy and reported no contraceptive method. This may reflect either changing life circumstances and/or being unprepared when sexual activity is resumed, similar to the STI findings associated with adolescents who previously adopted abstinence pledges (Bruckner & Bearman, 2005; Williams, Abma & Piccinino, 1999).

Women robustly expressed traditional and family-focused values through their comments, with emphasis on the value of children, faith beliefs, and self-reliance. Through their decisions to volunteer comments and to do so with the degree of passion that they did, self-selection bias may have influenced this theme. Although geographic distribution of participants was not available for this study, Cawthon and colleagues (2009) observed a significant difference between survey respondents and non-respondents, with a lower proportion of participants from King County and a higher proportion from Eastern Washington. King County is the most populous county in Washington State; it is the most urbanized and is characterized as more socially liberal. In contrast, Eastern Washington is more rural and has been characterized as socially conservative (Donovan, 2004; Pierce, Lovrich, & Elway, 2004; Stehr & Ellwanger, 2004). Regardless, the favorable orientation toward motherhood and childrearing as well as the role of faith in guiding childbearing decisions for some women resonated strongly. In their study of Finish women and men, Salmela-Aro and her colleagues (2005) described a transition of orientation toward motherhood and family-oriented goals in pregnancy and early postpartum periods. These favorable views are not unlike those originally described by Rainwater (1960) in his work with low income families, as well as the sentinel theoretical work by Hoffman and Hoffman (1973) that articulated the value of children to families. Among low income adolescents in New Orleans, Afabel-Munsuz and colleagues (2005) revealed a similar association between a positive orientation to early motherhood and both intended and unintended pregnancy.

While providing highly visible comments, a relatively small number of women expressed strong faith beliefs toward pregnancy, childbearing, and contraception.

However, these women do not appear to be disproportionately over or under-represented in the context of other research. Most commonly these women expressed desire or neutral feelings toward pregnancy, often described pregnancy and children as a “gift from God” or beyond their decision making process, and typically disagreed with the use of contraception for pregnancy prevention. While researchers performing analysis of 2002 NSFG data found lower rates of contraception use among women self-described as Catholic and fundamentalist Protestant, a significant associations between religious affiliation and non-contracepting behavior was found only for teens, not women 20-44 years old (Kramer et al., 2007). In their telephone survey of 1800 men and women age 18-29, Kaye et al. (2009), observed that 10% of women and 16% of men considered the use of contraception to be morally wrong. In the *TAKE CHARGE* survey, only 5.1% of women responded that the use of birth control was against their beliefs or those of their partner (Cawthon et al., 2009).

Although the women in this study appeared to represent characteristics and values congruent with the general population of childbearing women, economic security was not among these shared characteristics. Women in the PCQual258 sample reported higher household income distributions than the total sample of respondents, yet over 80% reported income and family size at or below 200% of federal poverty and over 27% reported income at or below 100% of poverty. Almost 38% reported having no health insurance in 2007 and an additional 26% reported being on Medicaid, with two thirds related to a current or recent pregnancy. Over two thirds of the children born in 2005 relied on Medicaid for health insurance. In comparison, the median family income in Washington State from 2005-2007 was \$65,428 and the percentage of all families with

children below poverty was 12.6%, and 5.4% when limited to married couple families (US Census Bureau, 2013). For 2008, which marked the first full year of the most recent economic recession and a concurrent drop in employer-based health insurance, the uninsured rate for all Washington State residents ages 18 to 64 years was 17% (Holahan & McGrath, 2013, US Census Bureau, 2013).

Women in this study actively expressed their concern about lacking health insurance, unaffordable insurance and medical care, delaying or doing without care, barriers to care, and the specter of being burdened with medical debt. These mirror the findings of current research on the working class uninsured, including the key functions and limitations of Medicaid and SCHIP in supporting low income families (Holahan & Chen, 2011; Holahan & McGrath, 2013; Kaiser Family Foundation, 2009, 2012_a, 2012_b; Perry, Paradise & Schwartz, 2009; Schwartz, 2008). Some participants commented on the gaps and perceived stigma of Medicaid, yet the overwhelming majority of women in this study expressed thanks for the programs covering their pregnancy and insuring their children's healthcare. The subsequent loss of full-scope Medicaid coverage following the birth of their child and the barriers to obtaining health insurance were among their chief concerns. In their qualitative research with low and middle income families, Perry et al. (2009) described similar patterns of gaps, distress and thankfulness.

While at the forefront of their comments, health insurance and finances appeared to have little influence in participants' decisions to have a baby in 2005 or in the likelihood of a subsequent birth. Comments suggested that responses to insurance may have been confounded by awareness of Medicaid pregnancy medical coverage and that perceived adequacy of financial resources may be relative in comparison to achieving

childbearing desires. Although childbearing and unintended pregnancy has had a long association with low-income status and there has been discourse regarding the economic and non-economic utility of children to families, there has been little recent research regarding insurance and economic decision making in relation to pregnancy planning (Hoffman & Hoffman, 1973; Rainwater, 1960; Santelli et al., 2003). Most recent research has described associations between economic considerations and the decision to seek abortion services, a population of women not explicitly included in the *TAKE CHARGE* survey (Ekstrand, Tyden, Darj & Larsson, 2009; Fergusson et al., 2007; Jones et al, 2010; Kendall et al, 2005; Santelli et al., 2006).

Although the participants in this study gave little weight to financial considerations in decision making about their 2005 pregnancy or their future desires toward childbearing, awareness of temporal economic conditions is important in interpreting these responses. The timing of the survey in spring 2007 was a comparatively prosperous period, situated after the recession of 2000-2004 and preceding the *Great Recession* that began in late 2007 (Holohan & Chen, 2011; Holohan & McGrath, 2013). Several participants volunteered comments about being better off economically at the time of the survey compared to 2005, with some inferring improved capability to balance their economic and family interests.

Unemployment in Washington State was 4.6% in 2007, but climbed to 9.3% by 2009, with non-managerial and non-professional occupations disproportionately impacted (Bureau of Labor Statistics, 2013). Additionally, a number of participants volunteered, usually in the context of insurance access difficulty, that their husband or partner was employed in construction, an economic sector particularly distressed in the most recent

recession. In Washington State, unemployment in construction and extraction occupations climbed from 7.6% in 2007 to 19.7% by 2009 (Bureau of Labor Statistics). As it is likely that many participants in this study faced economic stress well beyond what they reported in 2007, it is possible that the balance of economic and childbearing priorities they reported may have been different if the survey had been conducted two years later. Between 2007 and 2011, fertility in the United States declined from 69.3 births per thousand women to 63.2 per thousand, or 2.1 lifetime births per woman to 1.9 births, the second lowest recorded fertility rate in the history of the United States (Hamilton & Sutton, 2013; Martinez, Daniels, & Chandra, 2012; World Bank, 2013).

Ambivalence is Prevalent, Multifaceted, and Perhaps Self-Protective.

While ambivalence toward pregnancy and contraception was described as early as 1960, it has been increasingly recognized as a significant confounder in the measurement and expression of pregnancy intention since the late 1990s (Bachrach & Newcomer, 1999; Kaye, Sullentrop & Sloup, 2009; Luker, 1999; Sable, 1999; Santelli et al., 2003; Santelli et al, 2009; Speizer et al., 2004; Trussell et al, 1999; Rainwater, 1960; Zabin 1999). The results in this study revealed that ambivalence toward pregnancy, contraception, and childbearing was prevalent among participants, that it changed between contexts of measurement, and that a variety of variables could be connected to ambivalent feelings, in contrast to ambivalence being viewed as a unidimensional phenomenon. Santelli and colleagues (2003, 2009) previously introduced the complex and multidimensional nature of individual pregnancy decision making as well as associated measurement challenges. The theme *multifaceted ambivalence* and associated subthemes *evolving desires*, *letting nature take its course*, *outside my control* and

couldn't happen to me exposes this complexity. Additionally, the subthemes of *nothing artificial* and *partners in the background* developed in other themes further augment and interact with dimensions in the ambivalence subthemes.

Among women who reflected *evolving desires*, several were currently pregnant or recently postpartum and their future desires were unclear. Others described mixed feelings about how they did or might respond to an unplanned pregnancy, almost exclusively welcoming the new child. Others depicted their ambivalence as the uncertainty that they were experiencing in the early or late phases of their reproductive years. Beyond those women who were pregnant at the time of the survey, the most distinctive group emerging in this subtheme were women who reported being without a partner, separated from their partner, or in an unstable relationship. Commonly, these women indicated desire for more children but did not want to become pregnant in the next year and frequently reported “no sex” as their birth control method. These findings support the literature that has shown a strong connection between childbearing desire and interest in having a baby with a specific partner as well as desire to avoid pregnancy in the absence of such a relationship (Kaye et al, 2009; Kendall et al., 2004; Santelli et al., 2006; Speizer et al., 2004). This was particularly evident when compared with the larger group of women in this study who desired pregnancy and almost always reported being married or living with a partner.

While isolated comments by participants indicated that their partner desired more children or that they may have difficulty getting their partner to wear a condom, only 5.1% of women reported that their partner did not support their childbearing goals and participants did not offer any examples of significant discrepancy in childbearing desire

with their partners, nor descriptions of coercion, violence, or contraceptive sabotage reported in other studies (Gao et al., 2008; Miller et al., 2010; Rickert et al., 2002).

While reported goal disagreement was significantly higher among women who reported being unmarried or separated from their spouse, rarely did the 9.8% of women in the PCQual258 sample who reported having no partner offer any insight into the nature of their prior relationships. Notably, women who reported having no partner and “no sex” as their birth control method almost always wanted to avoid pregnancy in the next year, yet demonstrated subsequent birth rates similar to participants who were living with partners and desired pregnancy. It is unknown whether these women experienced a change in their life situation that altered their desire for pregnancy or whether they may have been unprepared for sexual activity when it resumed, as suggested by research among adolescents who made virginity pledges or practiced periodic abstinence (Bruckner & Bearman 2005; Manlove et al., 2003; Ott et al., 2010).

While the women in this study offered little indication of their male partners exerting undesired control over their fertility, they did express other facets of externally-mediated ambivalence. These were depicted in the subthemes *outside control*, *pregnancy as providence*, and *couldn't happen to me*. Most women who shared strong faith beliefs, including pregnancy as a divine decision, also expressed desire for pregnancy in pattern coding, yet over 80% provided an ambivalent response to one or both of the retrospective or prospective intention questions and typically reported no birth control use or a less effective method. Both the comparatively small number of respondents representing this facet as well as the conviction of their beliefs is consistent with other findings for women who articulate the moral basis for childbearing and moral convictions against birth

control use (Hoffman & Hoffman, 1973; Hoffman & Manis, 1979; Kramer et al., 2007; Kaye et al, 2009).

Another variation of externally-mediated ambivalence was displayed by women who expressed desire for more children, but simultaneously reported that they had had medical contraindications for pregnancy and/or had undergone surgical sterilization, most commonly hysterectomy. Other women expressed ambivalence in their desire for children but shared comments that they were at or nearing the end of their reproductive years. While these situations have little presence in contemporary unintended pregnancy literature, they do represent unmet values toward children and childbearing described in social sciences research (Hoffman & Hoffman, 1973; Hoffman, & Manis, 1979).

A related subgroup of women represented in the *couldn't happen to me* subtheme commented on their perceived infertility, whether referring to themselves or their partner. Comments were connected to the pregnancy that led to the birth of their 2005 child or a subsequent pregnancy and all conveyed ambivalence in their survey responses. Kaye and colleagues (2009) similarly reported that both men (15%) and women (19%) held the belief that they were quite likely or extremely likely to be infertile, without this perception being based in medical assessment, and perceptions of infertility were even higher among their Hispanic and black participants. Although some participants reported failure of their contraceptive method and others were assigned the ambivalent pattern of *passive* as seen in the *nature takes its course* subtheme, rarely did participants in this study articulate other, non faith-based, fatalistic comments about their fertility control described by other researchers (Frost, Singh, and Finer, 2007; Kaye, et al).

Ambivalence toward contraception, particularly more effective hormonal methods, was a common finding and characterized by the subthemes *nothing artificial*, *nature takes its course*, and *couldn't happen to me*. While most (80%) participants agreed with the use of birth control for family planning, over 17% across sample groups expressed a neutral opinion. Several women who reported that they were trying to get pregnant in 2005 also indicated their indifference toward birth control through their comments. Additionally, most of these participants conveyed ambivalence toward pregnancy in their future oriented survey responses and comments. Ambivalent comments about contraception included perceived harm, negative perceptions, side effects and dissatisfaction related to hormonal methods, being contradictory to beliefs, passiveness or indifference toward pregnancy and contraception, method transition gaps, forgetfulness, and impediments to libido. While a small number of women expressed high self-efficacy in the use of less effective methods, many conveyed that they overestimated their birth control strategy, most commonly natural family planning and breastfeeding.

Five decades ago, Rainwater (1960) described the inherently artificial nature of the family planning, and suggested that it can be perceived as a contradiction to natural processes. He contended that family planning was a potentially confusing “inverted planning orientation” focused toward “not being a parent” (Rainwater, p. 53). More recently, a wide body of literature has described the prevalence of ambivalence toward contraception as well as connections between pregnancy ambivalence, contraceptive ambivalence/dissatisfaction and unintended pregnancy (Bachrach & Newcomer, 1999; Brukner et al, 2004; Finer & Henshaw, 2006; Foster et al., 2004; Frost et al, 2007a,

2007b; Huber et al., 2005; Iuliano et al., 2006; Kaye et al., 2009; Kendall et al., 2004; Luker, 1999; Nettleman, Brewer & Ayola, 2007; Nettleman, Chung et al., 2007; Noone, 2004; Sanetlli et al., 2009; Trussell et al., 1999; Zabin, 1999). Misinformation and knowledge gaps regarding contraception, contraceptive efficacy and reproductive cycles are also prevalent among unmarried young adults (Kaye et al., 2009). Other research has described arousal loss associated with safer sex practices as well as the erotic pleasure associated with pregnancy fantasies and unprotected sex as contributors to ambivalence and risk behaviors (Higgins, et al., 2008, 2009).

In the TAKE CHARGE survey, Cawthon et al. (2009) compiled a unique and robust set of data from various sources, including forced choice and qualitative responses regarding retrospective pregnancy intention, prospective pregnancy desire and two decades of birth history data from July 1998 through December 2008, approximately 21 months following survey completion. In addition to allowing a partial assessment of subsequent births in relation to future pregnancy intention, this data afforded comparison of pregnancy intention in the context of prior birth history. Comparing responses related to intention for their 2005 pregnancy with those for 2007 and beyond, there was a profound decrease in expressed ambivalence. Those interested in avoiding pregnancy increased significantly and the number of participants expressing desire for pregnancy remained approximately the same. When participants were differentiated by whether their 2005 birth was their first birth or a second/higher-order birth, women whose first birth was in 2005 expressed significantly greater desire for future pregnancy than those with a second/higher-order birth, contrasted by those who had a second/higher-order births in 2005 and expressed significantly greater interest in avoiding future pregnancy.

These findings not only corroborate the themes and subthemes of *achieving childbearing goals* and the ambivalence subtheme of *evolving desires*, but further suggest that ambivalence may serve a unique role in a woman's first pregnancy and birth. Prevalent throughout childbearing, ambivalence may help protect a woman from decisional conflict regarding initial pregnancy and childbearing, and add definition to future decisions and life options. Santelli and colleagues (2003, 2009) contended that the underlying assumption in demographic measurement suggests that pregnancy represents a conscious decision process, also noting the evolving challenges and critiques directed toward that assumption as well as the convention of retrospective measurement. The findings in this study highlight the prevalence of ambivalence in pregnancy decision-making. Even in this limited study the discrepancy between retrospective measurement and births becomes evident when compared to prospective measurement and subsequent births, particularly when the more nuanced pattern coding process was used to formulate future intention categories.

Other research and social science theory offers some basis for the notion of ambivalence as serving a protective function in initial pregnancy and childbearing decision processes, particularly among low-income women and families. The sentinel 1941 Indianapolis study of fertility and family planning behavior identified the role of social class as a determinant of fertility as well as a unique connection between general planning behavior (planning to shop at sales) and lower fertility (Campbell & Mosher, 2000; Stycos, 1960). In his groundbreaking qualitative work with low income families regarding fertility, sexual relations, and contraceptive practice, Rainwater (1960) articulated the concept of family planning as a particularly complex executive ego

function, requiring a strong sense of personal stability and trust in the future, as well as the capacity to project oneself into the future from the present moment and translate that projection into actions. Given the complexity of their life situations, limited socialization toward future planning, and a host of often-conflicting normative values surrounding relationships and childbearing, he contended that individuals with lower socioeconomic status faced particular family planning challenges (Rainwater).

Hoffman and Hoffman (1973) developed a theoretical model for the value of children to parents, articulating nine categories of satisfactions or basic values that childbearing and children could fulfill. A key feature of their model was a hypothesis articulating alternative means of fulfilling these values, notably education, employment, career, economic security, and other relationships. Additionally, they contended that persons from lower socioeconomic classes have less access to these alternative forms to meet the satisfactions and values that children would otherwise fulfill (Hoffman & Hoffman; Michaels, 1988). Hoffman and Manis (1979) conducted a multinational study of their model in relation to family size, including the United States. In their U.S. cohort, they discovered a complex interplay of social and situational factors between values of children and alternatives. They found not only that social and economic costs may be critical to the upper limit of children desired, but also "...if the needs that children satisfy are important enough and, if there are no acceptable alternative ways of satisfying these needs, considerable costs will be endured in order to achieve the benefits" (Hoffman & Manis, p. 595). Their findings provided a basis for ambivalence that has been revealed in this and other studies, as well as for the findings described in the subtheme *financial adequacy is relative*.

The Theory of Reasoned Action (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) and the Theory of Planned Behavior (Ajzen, 1985) provide valuable theoretical frameworks for viewing the ambivalence toward pregnancy seen in this study, as well as the potential for a heightened role for ambivalence with first pregnancy and/or birth. Santelli and colleagues (2003) recognized the Theory of Reasoned Action for describing the connection between intentions and fertility behaviors, but despite these being among the most widely applied behavioral theories, applications in reproductive health have been limited to the use of condoms for disease prevention and birth control (Ajzen, 2012; Fishbein & Ajzen, 2010; Reinecke, Schmidt, & Ajzen, 1997). The Theory of Reasoned action identified behavioral intentions as the antecedent of behavior and behavior intentions as resulting from attitudes and subjective norms. The Theory of Planned Behavior extended the model with the addition of perceived behavioral control as a function influencing both intention and behavior; and behavioral belief, normative beliefs and control beliefs, as interactive precursors to attitudes, subjective norms, and perceived behavioral control (Ajzen, 2012; Fishbein & Ajzen, 2010; Madden, Ellen, & Ajzen, 1992). In the Theory of Planned Behavior, behavioral intentions are dependent on the interaction of attitudes, subjective norms and perceived control, as well as their precursors (Ajzen, 2012). Attitudinal ambivalence arises in the presence of conflicting dispositions toward an attitude object, increasing with the number of conflicting beliefs and decreasing in the presence of more dominant perceptions (Ajzen, 2001). An abundance of conflicting conditions and social referents for beliefs, attitudes, norms, and perceived control have been well described in research surrounding pregnancy intentions and fertility behavior, particularly impacting groups of lower socioeconomic status

(Afable-Munsuz et al., 2005; Ayoola et al., 2007; Bachrach & Newcomer, 1999; Brukner et al., 2004; Foster et al., 2004; Frost et al, 2007a, 2007b; Gerber et al, 2002; Hoffman & Hoffman, 1973; Hoffman & Manis, 1979; Huber et al., 2005; Iuliano et al., 2006; Kaye et al., 2009; Kendall et al., 2004; Luker, 1999; Rainwater, 1960; Santelli et al. 2009; Santelli et al., 2003; Speizer et al., 2004; Trussell et al., 1999; Zabin, 1999).

In this study, the subthemes of *stigma*, *the value of children*, *pregnancy as providence* and *financial adequacy is relative* reflect some of these aforementioned beliefs, attitudes, and norms. Given these conditions, the formation of intentions toward pregnancy and childbearing would seem to be a difficult hurdle, particularly for a woman who had not yet had any experience as a parent. Hoffman and Manis (1979) included both parents and non-parents in their study of values toward children and alternatives, and discovered unexpected variability in several dimensions, some of which they attributed to the anticipatory value of parenting verses the reality. This does not explain the high level of ambivalence seen with retrospective measurement of pregnancy intention, but Ajzen (2012) concluded that early research on the attitude-behavior relationship revealed inconsistency between symbolic expressions of attitudes, such as responses to letters or questionnaires, and actual behavior. An ambivalent response such as “I wasn’t trying to get pregnant or keep from getting pregnant” to a retrospective question of pregnancy intention may well offer a protective rationalization for past behaviors or outcomes in the face of conflicting norms and attitudes toward pregnancy, yet begin to define an otherwise uncertain path into the future and allow more dominant perspectives to be formed toward future childbearing.

Kaye and colleagues (2009) revealed that 44% of the women in their study expressed fatalistic attitudes toward birth control and pregnancy, a characteristic first described by Rainwater (1960) almost five decades previously. In a grounded theory study of previously pregnant low-income women in King County Washington, a central theme of *if it happens, it happens* was derived; where participants infrequently considered planning a part of their pregnancy experience, frequently viewed the term *intended* with negative connotations, and conveyed neutral views toward unplanned pregnancy (Gerber et al., 2002). In this study, the ambivalent subtheme *evolving desires* partially reflected how future pregnancy interests may have been shaped by pregnancy experiences. Cawthon et al. (2009) noted a remarkable shift in reported employment status of women from working full time to “homemaker”. While this may reflect limited work choices among low income women due to the cost of childcare (Perry, Paradise & Schwartz, 2009), it may also reflect a more defined future path as a result of childbearing and childrearing experiences. In Hoffman and Manis’s (1979) research on values associated with children and alternatives, they found that nonworking women were more likely to report children as a major source of stimulation and fun compared to working women. However, they could not necessarily discern whether women were less likely to seek employment because they found children fun or if children provided the main source of stimulation in the absence of employment as an alternative source of meeting that need.

Implications for Practice

The broad message from women in this study to clinicians and social service providers was that they wanted to be heard and their values and goals recognized. In

their efforts to respond to the survey and the appreciation they expressed in being invited to share their opinion, women seemed compelled to share their perspective. Several participants, particularly those with strong faith beliefs about childbearing and those who desired larger families, conveyed perceived stigma or actual discriminatory behavior as lower-income women who were pregnant. These women related the prevailing orientation of providers and agency staff toward preventing pregnancy and promoting contraception, which did not necessarily resonate with their interests. Approximately 20% of women across sample groups expressed a neutral opinion or disagreed with birth control and these participants accounted for over half of the subsequent births in the PCQual258 sample. Balancing those participants who expressed discomfort were women who described satisfaction with their contraception and emphasized long-term methods, including reported use of the IUD among PCQual258 participants that was well above the national average for all age groups (Jones, Mosher, & Daniels, 2012). In efforts to enhance client trust and outcomes related to pregnancy prevention and pregnancy, providers must remain alert to their personal orientations and biases, as well as implement strategies that assess the childbearing values of their clients and form plans that align with those values. Because of the resource demands, time constraints, and professional orientation, a critical role in shaping client-centered and value-focused models of care can be fulfilled by nurses, advance practice nurses and allied health staff.

One strategy applicable to both clinical practice and agency settings could be the utilization of enhanced intake and screening tools that incorporate pregnancy and childbearing history, values, life/partner situation, contraceptive practices, and future childbearing interests. These could incorporate more nuanced questions regarding

interests and values, such as those designed for the National Survey of Family Growth and the TAKE CHARGE survey, perhaps integrating an indexed ambivalence or pregnancy risk instrument. Such tools could have both assessment as well as awareness-raising intervention effects and serve as the foundation for more in-depth conversations with providers and staff. Effectiveness would be contingent on providers not only administering the tools, but reviewing the responses and incorporating them in conversations about interests and planning. Implementation of processes similar to the “Five A” (Ask, Advise, Assess, Assist, Arrange) smoking cessation strategy recommended by U.S. Public Health Service may be well suited for aligning the interests of providers and clients regarding pregnancy prevention and childbearing outcomes (Caplan, Stout, & Blumenthal, 2011; Fiore, Jaen, Baker, Gailey, Benowitz, et al. 2008). This model has been extended to promotion of physical activity in underserved populations (Carroll, Fiscella, Epstein, Sanders & Williams, 2012).

Specific groups of women identified in this study offer potential for intervention from provider and/or referring social service agencies. One comparatively small group of women who were not in partner relationships, wanted to avoid pregnancy, and reported “no sex” as their birth control method experienced subsequent birth rates similar to women who reported “none” for birth control and desired pregnancy. While these women may have experienced a remarkable change in their partner situation and pregnancy desire in the year following the survey, they may have been unprepared for sexual activity when that opportunity existed. If women in this group could be identified and their desire to avoid pregnancy confirmed, guiding them toward reversible contraception with longer action and limited user demand (i.e., IUD or vaginal ring) may

prevent unintended pregnancy. Advance preparation with condoms and/or emergency contraception would be additional strategies for those averse to an extended action method.

Another group of women warranting intervention agreed with birth control but expressed aversion to hormonal methods, as portrayed in the subtheme *nothing artificial*. Most reported reliance on male condoms and withdrawal, with natural family planning a distant third choice among those expressing ambivalence or wishing to avoid pregnancy. Other than male condoms, these less effective and user-dependent methods are rarely considered in the contraceptive repertoire of health care providers, nor are the cervical diaphragm, spermicides, or lactational amenorrhea strategies, yet can offer moderate efficacy when used reliably and in the correct conditions (Trussell, 2006). Most notably, the woman-controlled diaphragm was a key method employed by the early 20th century women who achieved one of the lowest fertility rates in United States history, yet now has reported usage of 0.3% or less (Cawthon et al., 2009; Dawson et al., 1980; Jones et al., 2012). For women who wish to delay or avoid pregnancy but disagree with hormonal or invasive contraception, having health care providers, community health nurses, and community educators who maintain familiarity with these methods could support women and their partners in their selecting a method that fits their interests and more effective use of that strategy.

An additional group of women identified for potential intervention in this study were those who desired pregnancy and did not use birth control. Often, these were women who desired larger families or expressed faith beliefs, and were most likely to be neutral or disagree with the use of birth control for family planning. They demonstrated

the highest percentages of subsequent births and had significantly higher frequencies of experiencing at least one interbirth interval of less than 21 months. Short interpregnancy interval, a more precise measure of risk, is among the few fertility measures clearly associated with adverse maternal-fetal outcomes (Conde-Agudelo et al., 2006; Grisaru-Granovsky et al., 2009). These same women who desired pregnancy most commonly expressed very positive values and feelings toward children, as described in the subtheme *the value of children*. Assuming that these values extend to family and personal health, it may be possible to guide these women toward balanced strategies that couple their health interests with birth spacing that affords physiologic recovery. More “natural” family planning strategies such as fertility awareness, withdrawal, lactational amenorrhea, periodic abstinence, or condoms could be amenable to some women in this group, and may be combined with other health promotion guidance regarding nutrition and fitness.

Implications for Policy

Women were broadly thankful for Medicaid insurance that covered their pregnancy and children’s health care, as well as for access to contraception via TAKE CHARGE. For the participants in this study, these programs afforded some level of economic and health security in meeting both their goals for childbearing as well as pregnancy prevention. While approximately 75% of participants retrospectively indicated they were ambivalent or trying to avoid pregnancy for the birth of their 2005 child, the comments volunteered by women suggested that their children were wanted and desired. At least for this subgroup of Medicaid women, these safety net insurance programs were fulfilling a key function of supporting the health and security of these women and their infants and children. For those trying to prevent or delay a future pregnancy, Medicaid

and TAKE CHARGE afforded them access to contraceptive products and services that they otherwise considered outside their reach. The main complaint shared by participants was restricted access to male vasectomy through TAKE CHARGE, the perception that this transferred a disproportionate burden for contraception to the woman, and contributed to a feeling of discrimination toward low-income women. As Medicaid and TAKE CHARGE both include male and female sterilization services in their scopes of coverage (HCA, 2012), it would have been valuable to explore the circumstances in which these perceived gaps and barriers arose.

The loss of full scope medical insurance coverage in the months after the birth of their baby was a blow conveyed by several participants. Given the transition of many women from employed to homemaker status (Cawthon et al., 2009) or working where employer-sponsored insurance was not available, women were disproportionately uninsured, with almost one-third (34%) reporting no insurance coverage in 2007. Medicaid frequently covered their children and a few commented about their spouse or partner having access to employer-sponsored insurance, but the cost to cover them as dependents was unaffordable. These women and their families clearly represented members of the working poor excluded from the economic security of the private insurance market, which likely was exacerbated by the beginning of the *Great Recession* in December 2007 and escalating unemployment in manual and skilled trades (Bureau of Labor Statistics; Holohan & Chen, 2011; Holohan & McGrath, 2013). These families represent disadvantaged constituencies that, in the future, may be afforded insurance access through various elements of the Patient Protection and Affordable Care Act (ACA) of 2010 (Holohan & McGrath, 2013).

While the Medicaid Pregnancy Medical program served as a critical and highly appreciated safety net program by offering insurance and health care access for these low-income women during their pregnancies, this program was not without limitations beyond eligibility restrictions. In responding to a question regarding the time uninsured during pregnancy, several women reported application processing delays and the pregnancy confirmation requirement to apply for coverage, potentially delaying access to prenatal care. For Washington women who gave birth in 2007, 86.6% of non-Medicaid women began prenatal care in their first trimester, whereas only 68.3% of women in the Medicaid Pregnancy Medical Program accessed care in their first trimester (Cawthon, 2011). While Medicaid eligibility is retroactive in Washington State, it is not uncommon for obstetric providers to defer acceptance of Medicaid clients into their practice until the women receive medical ID cards as well as a managed care plan assignment (L. Cawthon, personal communication, June 26, 2012). Given that over half (54.1%) of women in the TAKE CHARGE survey reported being uninsured prior to the pregnancy for their 2005 birth (Cawthon et al., 2009), it seems unlikely that these women had access to preconception preventive care. The potential for uninterrupted health insurance under the ACA, including deductible-free coverage for preventive and women's health services, may have profound impact on timely access to prenatal care as well as preconception health services.

Given the awareness of Medicaid insurance availability described in the subtheme *financial adequacy is relative*, a policy argument could be made that the availability of Medicaid pregnancy coverage and its more liberal eligibility requirements increases moral hazard related to pregnancy risk taking behaviors. However, well before the

Medicaid demonstration projects and expansions that included pregnancy care, researchers well described the disparities lower-income women faced regarding pregnancy, similarities in fertility trends across populations, as well as the burden women and families would be willing to endure in order to meet their childbearing goals (Hoffman & Manis, 1979; Rainwater, 1960; Westoff & Ryder, 1977). In regard to other characteristics, values, and goals, the main difference displayed by participants in this study were disparities in insurance access and economic security. For many years, the United States has made policy decisions that support fertility and family. Additionally, demographic shifts of declining fertility, increasing lifespan, and rapidly increasing old-age dependency ratios are well documented in North America and other developed countries (United Nations, 2009). Given this, policy decisions that support wanted fertility seem justified and, perhaps imperative, regardless of whether pregnancies fit preconceived criteria of being planned or unplanned.

Implications for Future Research

Perhaps the most notable feature of this study is how data were approached and methods integrated while striving to retain a naturalistic viewing position. In the end, this study and analysis did not emphasize exclusive qualitative or quantitative methods, nor one of the prevailing *sequential* or *concurrent triangulation* mixed methods approaches (Creswell, Plano-Clark, Gutmann, & Hanson, 2003; Maxwell & Loomis, 2003; Morse, 2003; Plano-Clark, Creswell, Green, & Shope, 2008; Teddlie & Tashakkori, 2003; Teddlie, Tashakkori, & Johnson, 2008). Rather, this study emphasized qualitative interpretive priority and integration of both qualitative and quantitative methods in the analysis phase, similar to a *concurrent nested* design or a variant of the *group-case*

design (Creswell, Plano-Clark, Gutmann, & Hanson, 2003; Teddlie, Tashakkori, & Johnson, 2008). The limited depth and static nature of volunteered comments challenged this analysis, while the large sample size afforded breadth and the capacity to compare groupings beyond the reach of most qualitative studies.

The pattern coding process was a unique characteristic of this study, including the transformation and qualitization of forced choice responses, that were subsequently integrated with volunteered comments and birth history data to create participant narratives. Additionally, truncated patterns derived from qualitative analysis were reintegrated into survey and birth history data for focused statistical analysis, specifically subsequent birth outcomes and comparisons of first and higher-order parity. Sandelowski (2011) contended that attitude toward data and viewing context, unbound from conventions of what constitutes qualitative versus quantitative or primary versus secondary analysis allows for the expansion of the interpretive repertoire and can offer a more dynamic approach to inquiry. In this study, the transformation of data and integration of methods afforded a more nuanced view of women's childbearing interests, group characteristics, and the factors and forces associated with their decision making.

The approach used in this study may offer a new and novel approach for the analysis of survey data, particularly when participants are afforded the opportunity to add comments, as open ended or as "other" responses. While the pattern coding process was readily applied for participants who offered minimal or no volunteered responses, the additional comments as well as the sequence of participant comments afforded valuable context for analysis and generation of thematic findings. This appears to be the first study of its kind applying such a process to integrate and analyze a population-based

fertility study. The most recent wave of the National Survey of Family Growth conducted 22,682 in-person interviews between 2006 and 2010 and represents the most widely used data source for study of fertility patterns and behaviors, yet the interview methodology incorporated no opportunity for capturing additional participant comments (Lepkowski, Mosher, Groves, West, Wagner, et al., 2013).

Findings from this study add to the ongoing critique surrounding the validity of conventional measurement strategies, particularly retrospective measurement, in capturing pregnancy intention and outcomes (Bachrach & Newcomer, 1999; Luker, 1999; Sable, 1999; Santelli et al., 2009; Santelli et al., 2003; Speizer et al., 2004; Trussell et al., 1999; Williams et al., 1999). The data compiled by Cawthon and colleagues (2009) and used in this study afforded not only a retrospective measure of pregnancy intention, but also a brief window for the prospective comparison of future pregnancy intention and subsequent birth outcomes. Additionally, birth history data allowed the comparison of pregnancy intentions between women who experienced their first birth in 2005 versus those who experienced their second or a higher order birth. This effort addressed a key need for longitudinal approaches in assessing intentions, contraceptive use and subsequent pregnancy (Santelli et al., 2009). While incorporating more nuanced and refined questions surrounding pregnancy interests and contraceptive practices, the 2006-2010 wave of the National Survey of Family Growth continued the convention of one-time retrospective assessment (Lepkowski et al., 2013; Mosher et al., 2012). This study revealed a remarkable shift in reported ambivalence between retrospective and future-oriented measures as well as a robust association between future pregnancy interests and subsequent birth, particularly when future intention was derived from pattern coding.

Additional prospective and longitudinal research, including subsequent pregnancy and pregnancy outcomes, is needed to better understand pregnancy interests as well as to design focused clinical and policy interventions.

Santelli, Speizer and colleagues (2004, 2009) have used retrospective measures and factor analysis and multivariate logistic modeling to determine the latent factor *pregnancy desirability* and subsequently developed a multidimensional *desire* scale. The pattern coding process in this study unbundled and examined responses for both congruence and incongruence in respect to future childbearing intention then re-bundled into qualitative patterns, a heuristic analog to factor analysis. Given the critiques of retrospective intention measurement and subsequent birth, there appears to be opportunity for similar multivariate modeling that is prospectively oriented, potentially resulting in an index of ambivalence and pregnancy risk. Such a questionnaire-based index may have applications as provider assessment tools as well as screening instruments available through public and social media, that address the myths, fatalism, misinformation, and knowledge gaps identified in other studies (Kaye et al., 2009). Such evidence-based screening instruments could offer intervention effects by elevating perceived susceptibility as originally described in the Health Belief Model and as a moderator of attitude strength in the Theory of Planned Behavior (Ajzen, 1988, 2001; Stretcher & Rosenstock, 1997). Subsequent intervention studies incorporating screening tools and provider strategies could extend this program of research, particularly if integrating longitudinal outcome data collection.

Additional qualitative research is warranted for further discerning dimensions and factors associated with pregnancy intention and childbearing decisions, particularly

among different populations. While research emphasis has been placed on women who have become pregnant, there is an absence of research regarding the characteristics of sexually active women who have been successful in preventing pregnancy. This study revealed some characteristics of women who had achieved their childbearing goals and their actions to prevent future pregnancy, but little has been discovered about women who prevent and delay initial childbearing early in their reproductive years.

Limitations

While this study possessed several strengths and novel characteristics, including sample size, breadth of responses, inclusion of birth history data, method integration, and quazi-longitudinal connections between intentions and outcomes, it faced several limitations. The first limitation is the age of the data. The survey data were collected in 2007 and reflected decisions and situations preceding the participants' 2005 birth. It is reasonable to question whether the responses and the situations in 2007 would be meaningful in 2013. However, fertility patterns and decisions about pregnancy and childbearing have been studied for decades and the phenomena remain both durable and perplexing. As seen in the preceding discussion, it is relatively uncomplicated to superimpose the context of temporal events, trends, and policies.

While offering access to a large base of rich information, relying on preexisting data sources posed a range of limitations. As the original research proposal was developed with only limited information available regarding the nature, structure, and depth and breadth of the data, several retroactive modifications became necessary, both structural and process-related. Researcher inexperience with tools, analytic strategies and design elements not only challenged the efficiency of analysis, but likely led to results

that could have been optimized and had greater focus if facilitated by a more experienced researcher. However, this inexperience may have led to approaches that would not have been considered by more experienced investigators, including the process of pattern coding transformed responses. As the question structure and responses to the survey questions were fixed, analysis was limited to the data available without opportunity for additional exploration or emergent question design, which would be typical in qualitative research. Specifically, there were no data on contraceptive strategies employed by participants prior to the pregnancy that led to their 2005 birth and it was discovered that most participant comments were oriented to the time of the survey in 2007 and toward the future, where the original intention was to differentiate participants based on their intentions related to their 2005 birth.

The structure of the retrospective and prospective pregnancy intention questions may have influenced the analysis and results, specifically regarding the shift in percentage of reported ambivalence. In the retrospective question, two of the four response options were categorized as ambivalent where that was applied to one of five options in the prospective question. However, responses to the future pregnancy intention question demonstrated more responses at the extreme poles, would have had no influence on the percentage of participants wanting to avoid future pregnancy, and may only have varied the distribution between *wanting* and *don't care* if the classification of *kind of want to get pregnant* was combined with the *don't care* response. As it was not reliant on response to a single question, the pattern coded distribution would have been unaffected.

Most qualitative research relies on in-depth interviews with a limited number of participants using semi-structured interview guides, resulting in detailed transcripts and narratives. This was not possible in this study as most responses were limited to space on the mailed questionnaire and the single open-ended comment area had no structure. This limited depth and inability to guide participant responses was both a limitation and significant tradeoff. The contrasting favorable tradeoffs included the sample size, breadth of responses, and the capacity to integrate volunteered questions with forced-choice survey responses. Additionally, most participants appeared to edit their comments in order to convey their desired messages, points, or questions.

The sample for the TAKE CHARGE survey was limited to participants who were aged 18 years or older at the time of their 2005 birth (Cawthon et al., 2009). As nearly half of the participants had their first birth in 2005, the age restrictions for sample inclusion will skew the distribution and under-represent the percentage of all Pregnancy Medical program participants whose first birth was under age 18 years. The birth history data was a rich addition to the data set, allowing calculation of age at first birth, birth interval identification and subsequent births, it was limited to recorded births or fetal deaths at 20 weeks or beyond, did not capture births that occurred outside Washington State, did not identify pregnancies not leading to a birth, and reported only a birth event, regardless of whether it was a singleton or multiple birth. Household income reporting was limited by self-report and the set of ranges did not allow for capturing higher income families, mainly impacting the ability to estimate poverty level status for larger households. Reported contraceptive methods relied on responses to a single survey question where participants could select a variety of methods. While generally effective,

it revealed the potential for reporting artifact as well as the strength of the pattern coding process. Where some participants reported “none” as their birth control method, they added comments in other parts of the survey revealing that the woman or her partner had experienced surgical sterilization.

Finally, it cannot be assumed that the participants in this survey are representative of the all participants in the Medicaid Pregnancy Medical program or other Medicaid participants. Only women who volunteered conceptually relevant comments were selected for the qualitative sample groups and the majority of PCQual258 participants were included in that sample because they volunteered comments to the open ended survey question. This sample represented a self-selected group that differentiated themselves from the full sample of participants, which had previously distinguished itself from all Program S women and other Medicaid enrollees on several characteristics (Cawthon et al., 2009). This differentiation included higher education attainment, older average age, older average age at first birth, fewer first births in 18 to 24 years age range, more first births to women aged 35 years and older, more women reporting marriage, higher proportions reporting monthly household income at \$2,500 or more, and more identifying themselves as white. These findings substantively contributed to the thematic message: *like everybody else, but living on the edge*. Additionally, Cawthon et al. (2009) reported that a higher portion of survey participants were from Eastern Washington and a lower portion from King County. While it was not the intention of this study or qualitative research in general to yield generalizable findings, it is valuable to recognize these differences. It is quite likely that the participants selected for this study represent a unique and important subset of Medicaid participants.

Summary

The purpose of this study was to expand the knowledge and understanding of factors and forces that influence sexually active women in their pregnancy decision making, including the initiation and use of contraception among those who wanted to avoid or delay pregnancy. This research contributes to the body of knowledge informing programs, policies, and future research in unintended pregnancy prevention. This study maintained a naturalistic viewing perspective with qualitative description as the priority method. Both qualitative and quantitative strategies were integrated in the analytic phase, reflecting a concurrent-nested mixed methods design for the analysis of previously-collected survey and demographic data, which had been assembled for the *TAKE CHARGE Final Evaluation: A Study of Recently Pregnant Women* study, conducted by Washington State Department of Social and Health Services. There were 1,292 women in the total sample, with qualitative subsample groups of 593 and 258, the later being emphasized in this study. All women were previous enrollees in the Washington State Medicaid Pregnancy Medical insurance program for the birth of a child in Spring 2005. A unique characteristic of this study was the transformation of forced choice responses into qualitative comments which were integrated with volunteered participant comments and birth history data to create participant narratives. These narratives were then coded to identify patterns of congruence, incongruence, and ambivalence, along with additional mediator patterns. These were combined with other open codes, additional survey responses, birth history data, and quantitative descriptive techniques to generate themes and subthemes.

Four major themes emerged from analysis: *achieving childbearing goals, traditional values, multifaceted ambivalence and insurance and finances matter, but not for pregnancy*. These themes and seventeen subthemes were integrated with existing literature to yield two thematic messages: *like everybody else, but living on the edge* and *ambivalence is prevalent, multifaceted, and perhaps self-protective*.

The first message asserts that participants were *like everybody else, but living on the edge*. In their responses and comments, women in the qualitative subsample revealed that they represented a cross-section of the population with characteristics, goals, interests, values, and childbearing desires that could characterize the general population of Washington women, with economic security as the significant exception. The second message is that *ambivalence is prevalent, multifaceted, and perhaps self-protective*.

Ambivalence toward pregnancy and childbearing is not a one-dimensional phenomenon, but arises and evolves in various contexts, has a significant association with subsequent birth, and may offer a protective mechanism for responding to a multitude of conflicting attitudes, social norms, and control beliefs that surround pregnancy and childbearing. For many women, it may not be possible to form or express intentions even when pregnancy is considered desirable and ambivalence may be a mechanism for moderating decisional conflict.

Health care and social services providers would be well served to remain alert to their personal/professional orientations, biases, and potentially stigmatizing behaviors. Implementation of screening and intake strategies that elicit the values, interests, and life situations of their clients may assist with goal alignment, improved trust, and mutual plans that may lead to prevention of unwanted pregnancy and improved health outcomes

for women who desire pregnancy and childbearing. Despite current limitations, public policies that afford insurance access for pregnant women and children as well as access to family planning services appear to be fulfilling a critical need. The Affordable Care Act may offer promise for continuous coverage and preventive health services, which may ameliorate the significant health access disparities that are experienced disproportionately by low-income women.

This study represented a novel approach to analyzing survey data and deriving a more nuanced understanding of pregnancy and childbearing interests. This strategy may be refined and applied to other large fertility-focused studies, particularly when the integration of volunteered comments is possible. This study supports the ongoing critique of retrospective pregnancy intention measurement and highlights the identified need for prospective and longitudinal fertility research, as well as additional qualitative and integrated methods study. Integrating a pattern-focused approach with multivariate modeling strategies may lead to the creation of prospective ambivalence or risk index tools that support intervention studies and clinical practice applications.

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APPENDIX A

Survey Instrument: *TAKE CHARGE Evaluation: A Survey of Recently Pregnant Women*

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| <p style="text-align: center;">PLEASE PROMPTLY RETURN THIS SURVEY IN THE ATTACHED POSTAGE-PAID ENVELOPE</p> <p style="text-align: center;">TAKE CHARGE Evaluation: A Survey of Recently Pregnant Women</p> <div style="text-align: center;">  </div> <p>Your comments on this program are important to us. Please help us by answering the following questions. Your answers will be kept strictly confidential.</p> <p>Sponsored by: Department of Social & Health Services Research and Data Analysis PO Box 45204 Olympia, WA 98504</p> <p>Conducted by: Social & Economic Sciences Research Center Washington State University PO Box 041801 Pullman, WA 99164-1801</p> | <p>1. We would like to confirm the information we have. You had a baby in March or April 2005. Is that correct?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No → If no, you do not have to complete the rest of this survey. Please mail the survey back to us in the postage-paid envelope and we will remove your name from our survey list. Thank you for your time.</p> <p>2. What is your baby's date of birth?</p> <p style="text-align: center;">_____ / _____ / 2005 (Month/Day/Year)</p> <p>We have some questions for you about your experiences before, during, and after your pregnancy. Please answer these questions only for your pregnancy in 2005. First, we would like to know more about you during the month or so <i>before</i> you got pregnant in 2005.</p> <p>3. <u>Just before</u> you got pregnant, what was your job status? (Check <u>all</u> that apply.)</p> <p><input type="checkbox"/> Working part-time (less than 40 hours per week) <input type="checkbox"/> Working full time (40 hours per week or more) <input type="checkbox"/> Unemployed, not looking for work <input type="checkbox"/> Unemployed but looking for work <input type="checkbox"/> Temporarily laid off, on sick or other leave <input type="checkbox"/> Homemaker or stay-at-home mom <input type="checkbox"/> Full-time student <input type="checkbox"/> Other</p> <p>4. <u>Just before</u> you got pregnant, did you have health insurance other than Medicaid?</p> <p><input type="checkbox"/> Yes → Go to Question 7 <input type="checkbox"/> No</p> <p>5. <u>Just before</u> you got pregnant, were you on Medicaid, Healthy Options, or medical coupon?</p> <p><input type="checkbox"/> Yes → Go to Question 7 <input type="checkbox"/> No</p> <p>6. How long did you go without health insurance <u>before</u> you became pregnant?</p> <p><input type="checkbox"/> Less than one month <input type="checkbox"/> _____ months</p> <p style="text-align: right;">Page 2 of 12</p> |
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| <p>7. Which of the following statements best describes you during the <u>3 months before</u> you got pregnant?</p> <p><input type="checkbox"/> I was trying to get pregnant.</p> <p><input type="checkbox"/> I wasn't trying to get pregnant or trying to keep from getting pregnant.</p> <p><input type="checkbox"/> I was trying to keep from getting pregnant but was not trying very hard.</p> <p><input type="checkbox"/> I was trying hard to keep from getting pregnant.</p> <p>8. How much did having or not having health insurance affect your decision to have a baby?</p> <p><input type="checkbox"/> A lot (For example, I would not have had a baby without health insurance.)</p> <p><input type="checkbox"/> Some (For example, I was concerned about insurance but it didn't affect my/four decision.)</p> <p><input type="checkbox"/> Not at all (For example, I didn't really think about it.)</p> <p>9. How much did your (or your family's) finances affect your decision to have a baby?</p> <p><input type="checkbox"/> A lot (For example, I would not have had a baby if I/we couldn't afford it.)</p> <p><input type="checkbox"/> Some (For example, I was concerned about money but I/we really wanted this baby.)</p> <p><input type="checkbox"/> Not at all (For example, I didn't really think about it.)</p> <p>10. When you got pregnant, were you, your husband, or partner doing anything to keep from getting pregnant? (Some things people do to keep from getting pregnant include not having sex at certain times or withdrawal, and using birth control methods such as the pill, condoms, cervical ring, IUD, having their tubes tied, or their partner having a vasectomy.)</p> <p><input type="checkbox"/> Yes → Go to Question 12</p> <p><input type="checkbox"/> No</p> <p>11. What were your reasons for <u>not</u> using any birth control? (Check <u>all</u> that apply.)</p> <p><input type="checkbox"/> I wanted to get pregnant.</p> <p><input type="checkbox"/> I didn't mind if I got pregnant.</p> <p><input type="checkbox"/> I thought I could not get pregnant at that time.</p> <p><input type="checkbox"/> I had side effects from the birth control method I had been using.</p> <p><input type="checkbox"/> I had problems getting birth control when I needed it.</p> <p><input type="checkbox"/> I thought my husband, partner, or I was sterile (vasectomy or tubes tied).</p> <p><input type="checkbox"/> My husband or partner didn't want to use anything.</p> <p><input type="checkbox"/> Using birth control is against my (or my partner's) personal beliefs.</p> <p><input type="checkbox"/> Other (Please tell us): _____</p> | <p>The following questions are about the time <i>during</i> and <i>just after</i> your pregnancy in 2005.</p> <p>12. How long did you go without health insurance <i>during</i> your pregnancy?</p> <p><input type="checkbox"/> I was insured the <i>entire</i> time I was pregnant → Go to Question 14</p> <p><input type="checkbox"/> Less than one month</p> <p><input type="checkbox"/> _____ months</p> <p>13. Why weren't you covered by health insurance? (Check <u>all</u> that apply.)</p> <p><input type="checkbox"/> Person in family with health insurance lost job or changed employers</p> <p><input type="checkbox"/> Got divorced or separated from husband or partner</p> <p><input type="checkbox"/> Death of husband or partner</p> <p><input type="checkbox"/> Employer does not offer coverage/not eligible for coverage</p> <p><input type="checkbox"/> Cost is too high</p> <p><input type="checkbox"/> Insurance company refused coverage</p> <p><input type="checkbox"/> Other (Please tell us): _____</p> <p>14. Did <u>you</u> lose a job while you were pregnant?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Not applicable (I didn't work during my pregnancy)</p> <p>15. Did <u>your partner</u> lose a job while you were pregnant?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Not applicable (I didn't have a partner or he didn't have a job)</p> <p>16. Did you <u>ever</u> breastfeed or pump breast milk to feed your baby?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No → Go to Question 18</p> <p>17. How old was your baby when you started feeding [him/her] something <u>other</u> than breast milk? (It may help to look at a calendar.)</p> <p>_____ months</p> <p>18. After your baby was born, did you have a postpartum checkup for yourself? (A postpartum checkup is the regular checkup a woman has after she gives birth.)</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> |
| Page 3 of 12 | Page 4 of 12 |

The following questions ask about your situation in the *recent past, now, and in the future.*

24. What is your current living situation?

- Married
- Not married but living with a partner
- Divorced
- Widowed
- Separated from spouse
- Never married and not living with a partner

25. What is your current job status? (Check all that apply.)

- Working now, part time (less than 40 hours per week)
- Working now, full time (40 hours or more per week)
- Unemployed, not looking for work
- Unemployed but looking for work
- Temporarily laid off, on sick or other leave
- Homemaker or stay-at-home mom
- Full-time student
- Other (Please tell us): _____

Go to Question 27

26. How long have you been working at your current job(s)?

- Less than 6 months
- Between 6 months and 1 year
- More than 1 year

27. What is your husband's or partner's current job status? (Check all that apply.)

- Working now, part time (less than 40 hours per week)
- Working now, full time (40 hours or more per week)
- Unemployed, not looking for work
- Unemployed but looking for work
- Temporarily laid off, on sick or other leave
- Homemaker or stay-at-home dad
- Full-time student
- Not applicable (no husband or partner)
- Other (Please tell us): _____

19. In the few weeks before or after your baby was born, did a doctor, nurse, or other health care worker talk with you about family planning or using birth control?

- Yes
- No

20. In the few weeks *before or after* your baby was born, did you receive any of the following? (Check all that apply.)

- An over-the-counter (non-prescription) birth control method
- A prescription for a birth control method
- A check-up or medical test related to using birth control
- Counseling or information about birth control
- Counseling or information about getting sterilized
- Emergency contraception ("morning after pill")
- A pregnancy test
- An abortion

21. In the few weeks before or after your baby was born, how aware were you that your family planning and birth control would be covered by Medicaid for one year after your baby was born?

- Very aware
- Somewhat aware
- Not aware

22. Since your baby was born, have you ever gone to a doctor, nurse, or other health care worker for birth control?

- Yes → Go to Question 24
- No

23. What are the reasons you have *not* seen a health care provider for birth control or other family planning services since your baby was born? (Check all that apply.)

- I am not having sex.
- I use over-the-counter birth control (such as condoms).
- I use natural family planning methods (for example, rhythm method).
- I want to get pregnant again.
- I do not mind if I get pregnant.
- I am or my husband or partner is sterile (vasectomy or tubes tied).
- I don't have health insurance to pay for it.
- I don't have the time.
- Using birth control is against my (or my partner's) personal beliefs.
- Other (Please tell us): _____

Page 5 of 12

28. What type of health insurance do you have *now*? (Check all that apply.)

- I don't currently have insurance
- Medicaid, Healthy Options, or medical coupon
- A private insurance plan from an employer
- A private insurance plan *not* from an employer
- State-sponsored health plan (such as Basic Health Plan)
- Military health care
- Other (Please tell us): _____

Go to
Question 31

29. How long have you been uninsured?

_____ months

30. Why aren't you covered by health insurance? (Check all that apply.)

- Person in family with health insurance lost job or changed employers
- Got divorced or separated from husband or partner
- Death of husband or partner
- Employer does not offer coverage/not eligible for coverage
- Cost is too high
- Insurance company refused coverage
- Lost Medicaid insurance coverage
- Other (Please tell us): _____

31. What type of health insurance do you have for your baby born in 2005?
(Check all that apply.)

- My baby doesn't currently have insurance
- Medicaid, Healthy Options, or medical coupon
- A private insurance plan from an employer
- A private insurance plan *not* from an employer
- State-sponsored health plan (such as Basic Health Plan)
- Military health care
- Other (Please tell us): _____

32. How many children do you have now living full-time in your household?

_____ children

33. How many children do you hope to have some day, including your baby born in 2005?

_____ children

34. Is your husband or partner supportive of your goals for having (or not having) children?

- Yes
- No
- Not applicable (No husband or partner)

35. How confident are you that you can choose the number of children you will have *in the future*, including not having any more children?

- Not at all confident
- A little confident
- Somewhat confident
- Mostly confident
- Totally confident

36. Which of the following statements best describes what you want to happen during the *next 12 months*? (Check only one.)

- I want to get pregnant during the next 12 months.
- I kind of want to get pregnant.
- I don't care one way or the other if I get pregnant.
- I do not want to get pregnant.
- I *really do not* want to get pregnant during the next 12 months.

37. Are you pregnant *now*?

- Yes
- No → Go to Question 39
- Unsure → Go to Question 39

38. Were you trying to get pregnant?

- Yes
- No

| | |
|--|---|
| <p>39. During the last 2 months, what kinds of birth control did you and your partner(s) use when you had sex? (Check <u>all</u> that apply.)</p> <ul style="list-style-type: none"> <input type="checkbox"/> No sex during the last 2 months (abstinence) <input type="checkbox"/> None: we did not use <i>any</i> method <input type="checkbox"/> Birth control pills <input type="checkbox"/> Condoms, female <input type="checkbox"/> Condoms, male <input type="checkbox"/> Cervical cap <input type="checkbox"/> Diaphragm/contraception ("morning after") pills <input type="checkbox"/> Foam, cream, jelly <input type="checkbox"/> Emergency contraception ("morning after") pills <input type="checkbox"/> IUD (intrauterine device) <input type="checkbox"/> Norplant® implant <input type="checkbox"/> Patch—Ortho Evra® <input type="checkbox"/> Natural family planning (for example, rhythm method) <input type="checkbox"/> Ring—NuvaRing® <input type="checkbox"/> Shot—Depo Provera® or Lunelle® <input type="checkbox"/> Sterilization, female (tubes tied) <input type="checkbox"/> Sterilization, male (vasectomy) <input type="checkbox"/> Withdrawal ("pulling out") <input type="checkbox"/> Other (Please tell us): _____ <p>40. How much of a problem would it be for you to get birth control if you needed it?</p> <ul style="list-style-type: none"> <input type="checkbox"/> A big problem <input type="checkbox"/> A small problem <input type="checkbox"/> Not a problem <p>41. Have you heard about the TAKE CHARGE program that provides family planning services and birth control at no cost to many women in Washington State?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes → Go to Question 42 <input type="checkbox"/> No <p>If you would like information on TAKE CHARGE, a program that provides birth control at no cost to many Washington women, call the Family Planning Hotline toll-free at 1-800-770-4334</p> <p>Now we would like to know more about your opinions. Please tell us how much you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree with the following statement about family life.</p> <p>42. It is best to plan ahead for a pregnancy by using birth control methods.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither agree nor disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree <p style="text-align: right;">Page 9 of 12</p> | <p>For each situation listed below, please tell us whether you would be very upset, a little upset, a little pleased, very pleased, or that you wouldn't care.</p> <p>43. How would you feel if you got pregnant in the next year?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Very upset <input type="checkbox"/> A little upset <input type="checkbox"/> A little pleased <input type="checkbox"/> Very pleased <input type="checkbox"/> I wouldn't care <p>44. How would you feel if you got pregnant now? (If you are already pregnant or have had another baby since 2005, how do you feel about it?)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Very upset <input type="checkbox"/> A little upset <input type="checkbox"/> A little pleased <input type="checkbox"/> Very pleased <input type="checkbox"/> I wouldn't care <p>45. How would you feel if you did not have any more children?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Very upset <input type="checkbox"/> A little upset <input type="checkbox"/> A little pleased <input type="checkbox"/> Very pleased <input type="checkbox"/> I wouldn't care <p>Finally, we'd like to know a little bit more about you.</p> <p>46. What is your date of birth?</p> <p>_____ / _____ / 19____ (Month/Day/Year)</p> <p>47. What is the highest grade or level of school that you have completed?</p> <ul style="list-style-type: none"> <input type="checkbox"/> 8th grade or less <input type="checkbox"/> Some high school, but did not graduate <input type="checkbox"/> High school graduate or GED <input type="checkbox"/> Some college, 2-year degree, or technical school <input type="checkbox"/> 4-year college graduate <input type="checkbox"/> More than 4-year college degree <p>48. Are you of Hispanic or Latina origin or descent?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes <input type="checkbox"/> No <p style="text-align: right;">Page 10 of 12</p> |
|--|---|

49. What is your race? (Check all that apply.)

- White
- Black or African American
- Asian American
- Native Hawaiian or other Pacific Islander
- American Indian or Alaska Native
- Other (Please tell us): _____

50. Including your pregnancy in 2005, how many times have you been pregnant in your life? _____ times

51. Including the birth of your baby in 2005, how many times have you given birth in your life? _____ times

52. How would you rate your overall health now?

- Excellent
- Very Good
- Good
- Fair
- Poor

53. What is your monthly total family income from all sources? Include money from jobs and government assistance for all family members who live with you. Please tell us your best guess.

- \$500 or less
- \$501–999
- \$1,000–1,499
- \$1,500–1,999
- \$2,000–2,499
- \$2,500–2,999
- \$3,000–3,499
- \$3,500 or more

Thank you for taking the time to complete our survey!
If you have any additional comments or questions, please note them in the box below.

If you would like information about the TAKE CHARGE program that provides family planning services and birth control at no cost to many Washington women, call the Family Planning Hotline toll-free at 1-800-770-4334

Please return your questionnaire in the postage-paid envelope provided to:

Social & Economic Sciences Research Center
Washington State University
PO Box 641801
Pullman, WA 99164-1801

APPENDIX B

Table 3. Comparison of Survey Respondents with Non-Respondents and S Women

| Characteristic | Survey Respondents n=1292 (100%) | Non-Respondents n=1172 (100%) | Resp. vs Non-resp. <i>p</i> * | S Women 2005 Births n=16,352 (100%) | Resp. vs S Women <i>p</i> * |
|------------------------------------|-------------------------------------|----------------------------------|----------------------------------|--|--------------------------------|
| Age, mean ± SD | 26.1 ± 5.5 | 25.6 ± 5.3 | 0.02 | 25.9 ± 5.4 | 0.19 |
| 18-19 | 115 (8.9) | 123 (10.5) | | 1472 (9.0) | |
| 20-24 | 479 (37.1) | 473 (40.4) | | 6347 (38.8) | |
| 25-29 | 370 (28.6) | 305 (26.0) | | 4669 (28.6) | |
| 30-34 | 206 (15.9) | 177 (15.1) | | 2436 (14.9) | |
| 35-39 | 100 (7.7) | 82 (7.0) | | 1145 (7.0) | |
| 40-44 | 22 (1.7) | 12 (1.0) | | 283 (1.7) | |
| Race/ethnicity | | | <.01 | | <.01 |
| White | 947 (73.3) | 759 (64.8) | | 11815 (67.0) | |
| Hispanic | 202 (15.6) | 187 (16.0) | | 2734 (15.5) | |
| African American | 38 (2.9) | 46 (3.9) | | 643 (3.6) | |
| Native American | 13 (1.0) | 28 (2.4) | | 446 (2.5) | |
| Asian/Pacific Islander | 42 (3.3) | 90 (7.7) | | 1154 (6.5) | |
| More than one race | 39 (3.0) | 47 (4.0) | | 628 (3.6) | |
| Other/Unknown | 11 (0.9) | 15 (1.3) | | 224 (1.3) | |
| Education | | | 0.01 | | <.01 |
| No high school diploma | 209 (16.2) | 212 (18.1) | | 2842 (17.4) | |
| High school diploma/GED | 417 (32.3) | 406 (34.6) | | 5888 (36.0) | |
| Some college or Associate's degree | 510 (39.5) | 439 (37.5) | | 6054 (37.0) | |
| Bachelor's degree or more | 128 (9.9) | 78 (6.7) | | 1279 (7.8) | |
| Unknown | 28 (2.2) | 37 (3.2) | | 289 (1.8) | |
| Prior Live Births | | | 0.81 | | 0.15 |
| 1 | 490 (37.9) | 451 (38.5) | | 6999 (39.7) | |
| 2 | 367 (28.4) | 324 (27.6) | | 4725 (26.8) | |
| 3 | 219 (17.0) | 197 (16.8) | | 2884 (16.3) | |
| 4-5 | 125 (9.7) | 102 (8.7) | | 1734 (9.8) | |
| 6 or more | 23 (1.8) | 27 (2.3) | | 444 (2.5) | |
| Unknown | 68 (5.3) | 71 (6.1) | | 858 (4.9) | |
| Primary Language | | | 0.97 | | |
| English | 1213 (93.9) | 1101 (93.9) | | not applicable | |
| Spanish | 47 (2.6) | 4 (2.6) | | not applicable | |
| Unknown | 32 (2.5) | 28 (2.4) | | not applicable | |
| Marital Status | | | 0.15 | | 0.47 |
| Married | 724 (56.0) | 624 (53.2) | | 8990 (55.0) | |
| Unmarried | 563 (43.6) | 545 (46.5) | | 7294 (44.6) | |
| Unknown | 5 (0.4) | 3 (0.3) | | 68 (0.4) | |
| Region | | | <.01 | | 0.02 |
| King County | 237 (18.3) | 262 (22.4) | | 3605 (20.4) | |
| Western Washington | 616 (47.7) | 583 (49.7) | | 8591 (48.7) | |
| Eastern Washington | 439 (34.0) | 327 (27.9) | | 5448 (30.9) | |

*Significant differences between respondents and non-respondents determined using chi-square test for categorical variables and two-sample t test for equal means for maternal age as a continuous variable.

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APPENDIX C

List of Qualitative Codes

| | |
|-------------------------------------|--------------------------------|
| A_CR_CASE FOR REVIEW | child_Spacing |
| A_Q_QUOTES | child_Total =1 |
| A_S_SURVEY COMMENT | child_Total =2 |
| AGE_MATERNAL | child_Total =3 |
| age_unknown | child_Total =4 |
| age05_18-19 | child_Total =5 |
| age05_20-24 | child_Total >5 |
| age05_25-29 | CON_CONTRACEPTION |
| age05_30-34 | cont_Against Beliefs |
| age05_35-39 | cont_Barrier/Access Difficulty |
| age05_40-44 | cont_BCM-Abstinence/No Sex |
| age1st_<15 | cont_BCM-Less Effective |
| age1st_15-17 | cont_BCM-More Effective |
| age1st_18-19 | cont_BCM-None |
| age1st_20-24 | cont_BCM Type |
| age1st_25-29 | cont_Cost Unaffordable |
| age1st_30-34 | cont_Effectiveness |
| age1st_35-39 | cont_Harmful |
| age1st_40-44 | cont_Method Failure |
| age1st_Over 30 | cont_NFP Only |
| age1st_Teen <18 | cont_options |
| BE_BELIEFS | cont_other |
| bel_Abortion | cont_Partner didn't want |
| bel_Faith | cont_Responsibility of Woman |
| bel_Other | cont_Satisfied/Works well |
| CHI_CHILDREN | cont_Side effects |
| child_Desire | cont_Sterilized |
| child_Gift from God | EM_EMOTION-FEELINGS |
| child_number<desired | emo_Ambivalence |
| child_number=desired | emo_another chance/opportunity |
| child_number>desired | emo_Blame |
| child_Other | emo_Concern |
| child_Role | emo_confidence/self-assurance |
| child_seeking boy/girl | emo_Conflicted |
| child_Separated from child/children | |

emo_Discomfort
 emo_Distrust
 emo_Embarrassed
 emo_Frustration/Disappointment
 emo_Happy
 emo_More Pregnancies: Pleased
 emo_More Pregnancies: Upset
 emo_More pregnancies: wouldn't care
 emo_other/unclear
 emo_Pressured
 emo_Reassurance
 emo_Relief
 emo_sad/upset
 emo_Stigma
 emo_Stress
 emo_Thankful
 emo_Unhappy/Dissatisfied
 emo_Want to give back
 emo_Worry
 EMP_EMPLOYMENT
 emp_not working/unemployed
 empl_Loss
 empl_Other
 empl_Self Employed
 empl_Temporary
 FI_FINANCE
 fin_Factor-A Lot (2005)
 fin_Factor-Not at All (2005)
 fin_Factor-Some (2005)
 fin_Other
 fin_self-reliance
 fin_Stress
 HEA_HEALTH
 health_Fetus-Infant
 health_Maternal
 health_Other
 INF_INFORMATION
 info_Gap
 info_Seeking
 INS_INSURANCE
 insu_awareness
 insu_Barrier
 insu_BHP or other subsidized
 insu_Cost Unaffordable
 insu_Delay Applying
 insu_Denied/Not Eligible
 insu_Dependents
 insu_Difficult to Apply
 insu_Employer not Offer
 insu_Factor-A Lot (2005)
 insu_Factor-Not at all (2005)
 insu_Factor-Some (2005)
 insu_Helped
 insu_Limitations
 insu_Loss of Coverage
 insu_Loss of Eligibility
 insu_Medicaid-DSHS
 insu_Medicaid pregnancy only
 insu_Need Coverage
 insu_no need
 insu_Other
 insu_Private or Employer
 insu_Processing Delay
 insu_Take Charge / State FP
 insu_use alternative health provider
 MO_MOTHERHOOD
 moth_limited capacity/interrupted
 moth_Other
 OPI_OPINION
 opin_Entitlement
 opin_inequity
 opin_Insurance
 opin_Other
 opin_planning using BC: Disagree
 opin_Planning using BC: neutral
 opin_Planning w/ BC: Agree
 opin_Services
 opin_WA State

PAR_PARTNER
 part_Absent
 part_Other
 part_single mother/parent
 part_Sit-Divorced (2007)
 part_Sit-Married (2007)
 part_Sit-Never Married & No Partner (2007)
 part_Sit-Not Married Living Together (2007)
 part_Sit-Separated (2007)
 part_Sit-Widowed (2007)
 part_Unhappy Relationship
 part_Wants Children
 PAT-A_PATTERN
 pat-ambiv_Mixed Feelings/Behaviors
 pat-ambiv_Nature Takes Course
 pat-ambiv_Outside Control
 pat-ambiv_Passive
 pat-cong_Avoid+HiE BC
 pat-cong_Avoid+Sterile
 pat-cong_Desire+LoE BC
 pat-cong_Desire+No BC
 pat-incon_Avoid-Vulnerable
 pat-incon_Avoid+LoE BC
 pat-incon_Avoid+No BC
 pat-incon_Desire+HiE BC
 pat-incon_Desire+Sterile
 pat-ins-fi_Distress-Stress
 pat-ins-fi_Priority Baby>Fin
 pat-ins-fi_Priority Baby>Ins
 pat-ins-fi_Priority Fin>Baby
 pat-ins-fi_Priority Ins>Baby
 pat-mediator_Faith
 pat-mediator_Health
 pat-mediator_Other
 pat-mediator_Partner
 pat-plan_Balance Priorities
 pat-plan_Evolving
 pat-plan_Hi Engagement
 pat-plan_Lo Engagement
 pat-plan_Meeting Child Goals
 pat-plan_Met Child Goals
 pat-plan_Outside Control
 pat-plan_Timing-Spacing
 PGH_PREGNANCY HISTORY
 pghx_Birth Interval >60mo
 pghx_currently pregnant/recently postpartum
 pghx_Did Not Know Was Pregnant
 pghx_Did Not Think Could Get Pregnant
 pghx_Miracle
 pghx_Mistake-Oops!
 pghx_Percieved Infertility
 pghx_Prior Losses
 pghx_Short Birth Interval
 pghx_Subsequent Pregnancy
 pghx_Unplanned
 PGIN_PREGNANCY INTENTION
 pgint_Intention 2005 Ambivalent
 pgint_Intention 2005 Trying to Prevent
 pgint_Intention 2005 Wanted
 pgint_Intention Future12m Don't care
 pgint_Intention Future12m Don't want
 pgint_Intention Future12m Want
 PLA_PLANNING-GOALS
 plan_Education
 plan_Employment
 plan_Family
 plan_Goals met
 plan_Other
 plan_Outside Control
 plan_Priorities
 plan_timing/spacing/running-out
 SER_SERVICES
 serv_Access
 serv_Helped
 serv_Other
 serv_Use/Misuse
 SUR_Q54 Additional comments

APPENDIX D

Study Review Correspondence: OHSU Institutional Review Board

<https://irb.ohsu.edu/irb/Doc/0/CVTPRM6RAD94J363KR389NMVE9/...>



OREGON
HEALTH & SCIENCE
UNIVERSITY

Research Integrity Office, L106-RI

3181 SW Sam Jackson Park Road

Portland, OR 97239-3098

(503) 494-7887

Memo

This is not an IRB approval.
This notification verifies that the IRB reviewed your request for determination.

Date: July 6, 2011

To: Nancy Press, PhD, MA

From: Susan B. Bankowski, M.S., J.D., Chair, Institutional Review Board
Gary T. Chiodo, D.M.D., F.A.C.D., Director, OHSU Research Integrity Office
Kara Manning Drolet, Ph.D., Associate Director, OHSU Research Integrity Office
Mindy Roberts, M.A., C.I.P., Assistant Director, OHSU Research Integrity Office

IRB #: IRB00006502

Title:

DETERMINATION

Based upon the submitted information, the IRB has determined that the proposed activity:

is not human subject research because the proposed activity:

- Does not meet the definition of human subject per 45 CFR 46.102(f)

APPENDIX E

Study Review Correspondence: Washington State Institutional Review Board



STATE OF WASHINGTON
DEPARTMENT OF SOCIAL AND HEALTH SERVICES
HUMAN RESEARCH REVIEW SECTION
P.O. Box 45205 • Olympia, Washington 98504-5205 • 360.902.8075 • wsirb@dshs.wa.gov

July 15, 2011

Dana L. Zaichkin, Ph.C.
1418 South Proctor Street
Tacoma, Washington 98405

Re: DSHS Exempt Request E-071411-S: "Secondary Data Analysis: RDA Study of Recently Pregnant Women"

Dear Ms. Zaichkin:

I have reviewed your Exempt Request for the activity identified above. I understand that you propose to obtain selected survey responses and open-ended narrative responses of subjects who participated in research conducted by Dr. Laurie Cawthon ("TAKE CHARGE Evaluation: A Study of Recently Pregnant Women"). Dr. Cawthon's staff would remove any identifiers from narratives prior to disclosing the information to you.

As described in the materials submitted, this activity would be exempt *provided that* current subject study id's are replaced with another arbitrary id number, and no link to the original study id or the identity of subjects was retained within RDA. As long as there is a link to subject identifiers, even though you would not have access, the records would be considered "indirectly identifiable". If these procedures for anonymizing the records were followed, review by the Washington State Institutional Review Board would not be required.

Please promptly inform us if the activity is changed in a manner that might jeopardize this determination. Thank you for submitting your study plans for review.

Sincerely,

Maggie Frederick, M.P.H., C.I.P.
Review Coordinator

cc: Laurie Cawthon, M.D., M.P.H.
Washington State Institutional
Review Board