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# Perceptions of Significance Regarding Prenatal Care Among Multiparous Maternal Patients

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# Perceptions of Significance Regarding Prenatal Care Among Multiparous Maternal Patients

## **Abstract**

Pregnancy, with the inherent need for prenatal care, is a global condition. Research has demonstrated a positive relationship between maternal adherence to prenatal care with associated maternal, fetal, and delivery outcomes of pregnancy. Non-adherence has been shown to increase risks of maternal and fetal morbidity and mortality. Despite the importance of care, maternal adherence to prenatal care is problematic, pervasive, and persists without an identified etiology. Research to identify a causation for maternal nonadherence has focused upon groups of women with shared traits or circumstance as a predisposing risk. The aim of this study was to identify how adherent multiparous patients perceive the significance or value of prenatal care. A qualitative semi-structured research study, utilizing a directed content approach with the health belief model as a theoretical base, indicated five themes with an overarching theme of Maternal Fetal (M-F) attachment as motivating cues to action in seeking care. The maternal patients in this study were all found to have established M-F attachment, prompting them to seek care. Understanding the importance of M-F attachment, and the way in which individual maternal needs may be met throughout pregnancy, has the potential for improved practice aimed at increasing adherence rates. Further research is indicated to explore the multifactorial origins of established M-F attachment, and ways to deliver patient centered-care in practice to meet the diverse and changing needs of maternal patients. The ultimate goal for practice is to improve maternal adherence rates, subsequently affecting improved maternal, fetal, and delivery outcomes.

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Supervised by

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2016

## **Dedication**

With gratitude for the grace and love from God, I dedicate my dissertation to the shining stars in my life: to my husband Tom who always believed in me, and to my children Christine, Carl, and Curt, who are my greatest gifts and my greatest accomplishments. Thank you to my mother, Elizabeth, who taught me strength and perseverance, and to my late father, James, who taught me kindness. Thank you to my sister Margaret and to my brother Jim for your love and support.

I am grateful to my friends and colleagues, Dr. Bruce Surosky and Karyn Nickerson who supported my research and offered me encouragement. Thank you to my chair, Dr. Dianne Cooney Miner, and committee member, Dr. Kathleen Dever for your faithful direction, and to Dr. Marie Cianca for your patience and guidance. Thank you to my supportive friends, including Deb Criss and Frank Cahill.

### **Biographical Sketch**

Susan graduated from West Chester University, West Chester, PA, with a bachelor of science in nursing. She earned a master of science in nursing with a concentration in nursing education from Keuka College. Her employment experience includes charge nurse at the Medical College of Pennsylvania, and Quality Assurance and Utilization Review Coordinator at the Thomas Jefferson University Hospital in Philadelphia, PA. She worked as an Administrative Assistant and Hospital Supervisor at The Latrobe Area Hospital in Latrobe, PA.

She is currently employed as a Nurse Manager at the Twin Tier Women's Health Team in Elmira, New York, and is a full time tenure track Assistant Professor of Nursing at Elmira College in Elmira, New York. Susan is a member of the ANA, NLN, Sigma Theta Tau International Honor Society in Nursing, and Kappa Delta Pi International Honor Society in Education. She received the Elmira College Kenneth and Janice Whitehead Freeman Endowment Research Scholarship (2016), and the Sigma Theta Tau (Rho Gamma Chapter) Community Health Research Scholarship (2016). Susan is authoring a guidebook for students and community health nurses on health promotion design. She lives in Pine City New York. She and her husband, Tom, have a daughter Christine, and two sons, Carl and Curt.

## **Abstract**

Pregnancy, with the inherent need for prenatal care, is a global condition. Research has demonstrated a positive relationship between maternal adherence to prenatal care with associated maternal, fetal, and delivery outcomes of pregnancy. Non-adherence has been shown to increase risks of maternal and fetal morbidity and mortality. Despite the importance of care, maternal adherence to prenatal care is problematic, pervasive, and persists without an identified etiology. Research to identify a causation for maternal nonadherence has focused upon groups of women with shared traits or circumstance as a predisposing risk. The aim of this study was to identify how adherent multiparous patients perceive the significance or value of prenatal care. A qualitative semi-structured research study, utilizing a directed content approach with the health belief model as a theoretical base, indicated five themes with an overarching theme of Maternal Fetal (M-F) attachment as motivating cues to action in seeking care. The maternal patients in this study were all found to have established M-F attachment, prompting them to seek care. Understanding the importance of M-F attachment, and the way in which individual maternal needs may be met throughout pregnancy, has the potential for improved practice aimed at increasing adherence rates. Further research is indicated to explore the multifactorial origins of established M-F attachment, and ways to deliver patient centered-care in practice to meet the diverse and changing needs of maternal patients. The ultimate goal for practice is to improve maternal adherence rates, subsequently affecting improved maternal, fetal, and delivery outcomes.

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## **Chapter 1: Introduction**

### **Introduction**

Pregnancy is a universal condition, effecting significant maternal adjustment and change, marked by fetal development and maturation. Maternal physiologic challenges present throughout the antepartum period, necessitating adaptation in order to nurture and support fetal growth. Prenatal maternal surveillance throughout pregnancy is integral to the promotion of positive maternal and newborn outcomes. Prenatal care presents as an opportunity for assessment, early identification of problematic issues, timely management of pathology, and intervention to direct improved maternal, fetal, and delivery outcomes (Haddrill, Jones, Mitchell, & Anumba, 2014; Madappa & Sharma, 2010; Ziyo, Matly, Mehemd, & Dofany, 2009).

Literature has demonstrated a link between maternal non-adherence to prenatal care and adverse fetal conditions including low birth weight, preterm delivery, and antepartum fetal death (Almeida et al., 2007; Jin & Wen, 2003; Ziyo et al., 2009). Complications associated with preterm delivery increase the likelihood of stress, financial strain, and health burdens, with the possibility of continued impact upon well-being throughout the lifespan. Despite the importance of prenatal care, maternal non-adherence to routine scheduled visits remains persistent, pervasive, and problematic globally (Fisher et al., 2010; Tough, Siever, & Johnston, 2007).

Maternal patients present with varied, individual, and changing needs, spanning

throughout the prenatal period. When seeking services, patients rely upon healthcare professionals to assist in identifying and meeting their unique needs and challenges, and to provide the highest level of quality care. Quality care aimed at realizing optimal maternal, fetal, and delivery outcomes requires a holistic and patient-centered approach. To fully engage the maternal patient as an integral partner, healthcare professionals need to appreciate, through the lens of patient perspective, the purpose, significance, and personal value of prenatal care visits.

Multiparous patients possess a framework for defining personal significance of prenatal care, based upon their previous history and experience. Consideration of multiparous maternal patient perspective, within the context of previous experience, may facilitate an opportunity to appreciate the way personal meaning is assigned to the prenatal care. The aim of this study was to explore perception as it pertained to multiparous patients and their prenatal care experience. To create a framework for a non-judgmental approach, compassionate patient-centered care, and supportive intervention, new research was developed to facilitate a greater appreciation for individual maternal perception and challenges, revealed through identified understanding.

### **Social Determinants of Health**

Individual maternal perceptions and challenges have the potential to influence the utilization of healthcare services. Levels of health are determined and impacted, to varied measure, by individual access to social, economic, and environmental resources (WHO, 2014). The World Health Organization (WHO) Commission has addressed the importance of identifying and implementing actions aimed at reducing disparities in the promotion of health equity (WHO, 2014). Creating health promoting environments that

address social, economic, environmental, and physical factors is a goal of Healthy People 2020 (CDC, 2011). Understanding the conditions of environments affecting the quality of life and determining health outcomes creates the opportunity for research aimed at practice and policy change to reduce and eliminate existent disparities in access to care. Considering individual challenges and motivators, within the context of determinants of health, facilitates understanding and identification to align patient need with resources. Research aimed at exploring the influencing factors that affect health and wellness motivating behavior, and the conditions or circumstances affecting the way in which individuals seek care, is central to the process of developing effective practice change.

### **Problem Statement**

Pregnancy, and the inherent need for prenatal care, is experienced worldwide. The consequence of non-adherence to care, whether based upon maternal decision, ability, or circumstance, potentially impacts maternal, fetal, and delivery outcomes (Ziyo et al., 2009). Despite the risk of adverse outcomes associated with inadequate or underutilization of services, the issue of maternal non-adherence to prenatal care visits remains problematic. Decades of empirical research have failed to identify a causation of maternal non-adherence to prenatal care; maternal non-adherence remains a persistent, multifaceted, and complex issue. Research has demonstrated a correlation between groups of individuals with shared traits, inequities, and barriers, with an increased risk for non-adherence. Issues including ethnicity (Brighton, D'Arcy, Kirtley, & Kennedy, 2013), age (Prathima, 2014; Tough et al., 2007), socioeconomic resources (Jin & Wen, 2002; Prathima, 2014; Ziyo et al., 2009), mental status (Fisher et al., 2010), geographical location (Heaman et al., 2014), education (Jin & Wen, 2002; Olds, Kitzman, Knudtson,



Anson, Smith, & Cole, 2014; Prathima, 2014; Sangal, Srivastava, Singh, Srivastava, & Huma Khan; 2012; Ziyu et al., 2009), and previous experience (Brighton et al., 2013; Lee, Ayers, & Holden, 2012; Okah & Cai, 2014), have been considered as contributing factors in maternal decision or ability to utilize prenatal care services.

Multiple nursing, learning, and social theories have been implemented in an attempt to predict and explain non-adherence as a barrier to health promotion. Given the unpredictable nature of human behavior, varied individual needs, and the influence of personal history, culture, experience, and interpretation, applied theories have failed to identify an etiology, or predict maternal behavior in the utilization of routine scheduled prenatal care visits. Similarly, research has indicated that traditional education alone has not been sufficient to promote healthcare seeking behaviors (Lee et al., 2012; Sharifirad et al., 2013). Additional research has indicated that vulnerable groups of maternal patients without supplemental education and support are less likely to utilize services (Olds et al., 2014). While the literature regarding the topic of non-adherence in prenatal care has been extensive, the focus has been aimed at groups of women with shared commonalities, collective struggles, and mutual barriers.

Pregnancy is an individual experience; it is a unique event for each woman. The constructivist worldview as a research approach, considers individual understanding and perspective within the context of an individual's life and subjective experience (Creswell, 2014). The complexity of the subjective meaning that an individual may derive from the experience is further appreciated in understanding that the attached meaning is steeped in individual history and culture, lending it to personal interpretation. Furthermore, the derived meaning of a lived experience is integral toward personal individualized

human engagement, interaction, interpretation, and understanding (Creswell, 2014). Individual perception of care recipients is fundamentally important in considering a partnership in the way patient care is designed and delivered, in terms of need and expectation.

### **Theoretical Rationale**

The health belief model (HBM) provides a theoretical framework for understanding the relationship between motivating factors, including perception and health behaviors. The HBM was originally designed to explain motivating factors that prompt individuals to assert positive health behaviors. The HBM model was later revised to consider individual specific demographic and psychological variables that were shown to influence health decision behavior (Rosenstock, Strecher, & Becker, 1988). As individuals present with varied needs, barriers, and abilities to optimize health outcomes, a universal theory to consistently explain individual behavior is non-existent. The HBM, however, has significant merit as demonstrated in literature when aimed at explaining and attempting to predict health behaviors, and in designing educational strategies (Sharifirad, et al., 2013). The HBM requires accurate insight and assessment of an individual's perception of risk in terms of personal susceptibility and severity of illness. It encompasses appreciating risks and consequences of non-adherence, reduction of barriers to health promotion, and acting upon cues to action (Rosenstock et al., 1988).

Maternal adherence to prenatal care is pervasive and problematic. The HBM indicates that if an individual has an accurate perception of risk susceptibility and severity, understands consequences of not implementing health promotion change, and is able to identify cues to action needed to surmount barriers to desired health outcomes, the

individual will be motivated to act to reduce the threat of illness or poor outcomes (Rosenstock et al., 1988). Research to explain maternal non-adherence to prenatal care has not been able to identify a singular causation. Research has demonstrated the effective use of the HBM in identifying the way perception positively correlates with behavior. Utilizing a constructivist lens and the HBM theory as a framework for research, aimed at identifying maternal perception regarding the significance of prenatal care, may identify opportunity for research, new knowledge, and subsequent practice change. Research that seeks to understand the phenomenon of maternal non-adherence to prenatal care may be utilized in strategies to promote positive maternal health behaviors, ultimately leading to improved health outcomes.

### **Statement of Purpose**

The purpose of this study was to gain understanding of maternal perception regarding the significance of prenatal care visits among multiparous patients. Analyzing the collected data of maternal patients' perceptions allowed for consideration of the individual experience of seeking prenatal care, understanding and interpreting the value and meaning of care, and appreciating, through a maternal lens, the personal significance of care within the context of a lived history. An individual journey is subject to unique perspective, and worthy of exploration for understanding. Research aimed at identifying individual expression of feeling, need, perception of risk, action, benefits, and barriers, was considered thematically to create a more meaningful encounter for patients in practice settings. An algorithm designed to assess individual and essential changing needs, and addressing components of care, may demonstrate creative and thoughtful practice change. Enhancing maternal adherence rates to prenatal care visits, while

subsequently improving maternal, fetal, and delivery outcomes, remains the ultimate goal of research effort in addressing maternal non-adherence to prenatal care.

### **Research Questions**

In a qualitative approach to identify perception of significance regarding prenatal care among multiparous maternal patients, a series of questions were presented to explore and extract meaningful data. Participants were asked to identify their meaning of prenatal care in order to assess and evaluate the perceived identified purpose that they believe prenatal care provides. In addition, patients were asked to identify individual risks and outcomes, benefits and barriers of prenatal care. Patients were asked to define, within the context of comparison, how decision making affects their behavior in terms of participation in prenatal care services. Finally, questions were posed as a needs assessment to identify how determined provision of care may be suited to enhance the meaningfulness and value of their individual prenatal care experience.

### **Potential Significance of the Study**

The aim of this study was two-fold. The research was based upon gaining an understanding from an individual perspective, the perception of significance regarding prenatal care among multiparous patients. Research centered upon gaining new information may be utilized in creating a more patient-centered approach to care. Care that is designed to meet individual needs, stemming from a patient perspective, promises to be efficacious in promoting maternal adherence to prenatal care. The ultimate goal, is to realize increased favorable healthy maternal, fetal, and delivery outcomes.

## **Definitions of Terms**

*Antepartum* – The pregnancy period before delivery

*Delayed or late care* – Presentation for first prenatal care visit after 12 weeks gestation

*Healthcare providers* – Physicians, nurse midwives, or professional registered nurses

*Multigravida* – Having been pregnant more than one time, regardless of the outcome

*Multiparous* – The number of times the uterus has been emptied after 20 weeks gestation

*Perception* – Organization, identification, cognitive processing, and interpretation of sensory information representing the environment through applied understanding (Cherry, 2015).

*Prenatal*- The pregnancy period before delivery

*Prenatal care* – The care a patient receives during pregnancy and before delivery

*Primigravida* –Having been pregnant one time, regardless of the outcome

*Significance* – A worthy, important, meaningful, valued, or influencing quality

## **Chapter Summary**

Prenatal care is important in terms of influencing maternal, fetal, and delivery outcomes. Maternal non-adherence is complex, problematic and pervasive. Maternal non-adherence to care potentially increases the risk of poor outcomes, impacting health and well-being. Poor outcomes strain individuals, families, the healthcare system, and society. Human, societal, and financial impact potentially resulting from maternal non-adherence is significant. Research has been unable to identify a single causation for maternal non-adherence to prenatal care. Focusing upon groups of women to identify individual behavior has produced conflicting and ineffective results in terms of practice change. The need exists to approach maternal non-adherence as an individual encounter,

from a unique perspective, within the context of a lived experience. Utilizing previous literature and applying theory, a research design was created to identify the meaning of prenatal care from individual perspectives. Understanding the impact and inherent challenges of pregnancy and prenatal care contributes to the body of knowledge, and formulates the opportunity for new and creative practice strategies to consider, reconciling the need to provide meaningful and effective patient-centered care.

## **Chapter 2: Review of the Literature**

### **Introduction and Purpose**

Pregnancy, with the inherent need for prenatal care, is a global condition. The prenatal period presents as an opportunity to assess, identify, diagnose, intervene, and address issues with the potential to impact upon maternal, fetal, and delivery outcomes. Despite the importance of prenatal care, maternal non-adherence remains persistent and problematic globally. Causations are varied and complex.

Social determinants of health impact all patients in terms of economic stability, education, social and community context, health and healthcare services, and the neighborhoods in which they reside (CDC, 2015). The importance of recognizing the social determinants of health has been addressed in Healthy People 2020 (CDC, 2014) in an effort to recognize and eliminate disparity of social and physical environmental conditions and circumstances that present as barriers to early and adequate prenatal care. Research to address maternal non-adherence to prenatal care has focused upon identifying correlations between groups of women who share similar barriers or circumstance, with predisposing risks for non-adherence. Perceptions, implications, and intrinsic life changes associated with pregnancy and decision making are experienced individually.

The health belief model (HBM), as a social theory, is derived from scientific inquiry aimed at identifying factors that motivate positive health behaviors (Steckler, McLeroy, & Holtzman, 2010). The health belief model indicates patient perception as a

motivating factor in terms of risk, susceptibility, severity of illness, awareness of benefits, barriers to change, and cues to action (Rosenstock et al., 1988). Appreciating the individual motivating challenges and factors of women who seek prenatal care establishes consideration for new and continued research. Focusing on multiparous women, or those who have experienced more than one delivery, allows for a unique perspective with the potential for insight to understand how patients may attach meaning to their lived experience within a historical context. Exploring perception regarding the significance of prenatal care among adherent multiparous patients provides new information relevant to the prenatal care experience. Thematic findings of research aimed at identifying individual, complex, and varied patient needs and perceptions as they relate to prenatal care utilization, may enhance understanding of adherence motivation, with subsequent implications for improved practice.

### **Significant Empirical Findings**

Literature searches of databases were conducted to identify research aimed at maternal multiparous patient perception regarding the significance of prenatal care. Literature published globally and written in English was explored from peer reviewed journals in multiple data bases from 2001 to the present date. Research beyond the 14 year period was excluded due to the rapid and changing nature of healthcare conditions, policies, political factors, and the dynamics of health and science that influence outcomes. Studies limited to the postpartum experience were excluded unless they incorporated a prenatal comparison.

An inability to identify documented research regarding the perceptions of multiparous women and prenatal care significance, prompted the use of search terms in



an effort to encompass literature with related barriers to care, and to explore the phenomenon of maternal behavior. All terms were used singularly and in various combinations. Relevant and related studies dovetailing with the concepts of interest were identified. Exploration of evidence formed the foundation for new research, drawing from a body of existent knowledge to potentiate change for the advancement of clinical practice aimed at improved patient outcomes.

Research has focused upon identifying causations for maternal non-adherence to care, centered upon groups of non-adherent women with similar needs, barriers, and challenges. Conversely, pregnancy is lived as an individual experience, integrating differing tasks, needs, beliefs, history, background, culture, and circumstance. Each maternal patient internalizes a unique perspective, creating a challenge for healthcare providers who apply a generalized prescribed algorithm for care services. The importance of prenatal care is appreciated by understanding how pregnancy effects change for the maternal patient, with implications for her unborn child. According to the Massachusetts Health Quality Partners, quality prenatal care is identified as the most significant element in maternal and infant health (Perinatal Care Recommendations 2009/2010, 2011). Considering the benefits, the United States Center for Disease Control (CDC) set a Healthy People 2020 objective for early and adequate prenatal care to be realized in 77.6% of pregnant woman, reflecting a 10% increase from the 2007 baseline of 70.5% (CDC, 2013). Despite a measureable goal, adherence remains unpredictable.

### **Theoretical Application**

Perception formed from knowledge, interpretation, beliefs, and experience may

influence a maternal patient's decision or ability to adhere to care. The health belief model (Rosenstock et al., 1988) explains behavior in terms of motivation. Perception of risk, susceptibility, and severity have been shown to be guiding determinants in health seeking behavior (Frohworth, Moore, & Maniaci, 2013). Understanding how individuals appreciate or value the level of health risk, perception of severity, consequence, and cues to action are significant in explaining motivation to predict behavior that contributes to health outcomes. Increasing awareness, susceptibility, and knowledge has the potential to improve methods of practice. Engaging patients in an attempt to understand attitudes and beliefs may assist healthcare providers in identifying individual patient barriers with regard to prenatal care participation (Brighton et al., 2013).

An overall search of evidence has identified associations between groups of maternal patients, and outcomes. Significant findings have been noted to demonstrate importance of care, adverse outcomes of maternal non-adherence, women who are at-risk for non-adherence to care, multiparous patient behaviors related to previous lived experiences, and the complexities of maternal understanding as it relates to ability, decision making, and care-seeking behavior. An analysis of recent and relevant literature validates the need to understand the phenomenon of positive motivation among adherent multiparous patients, as it relates to healthcare practice.

The health belief model (Rosenstock et al., 1988), as a conceptual framework, focuses upon individual motivating, health-seeking factors. Perspectives of women presenting for care adds descriptive meaning to understanding the individual prenatal care experience. Literature indicates a need for reflective understanding of the complex multifactorial and unique issues surrounding individual maternal perception as it relates

to prenatal care utilization. Relevant and related literature was explored and reviewed, indicating that multiparous nonadherence is a worldwide issue, with the potential to impact upon the health and well-being of future generations. A discussion of the findings will be noted from a global and national perspective, beginning with international studies.

### **Methodological Review of Literature**

Global research has associated maternal prenatal care adherence with outcomes using quantitative methods. A retrospective cohort design of data collection of prenatal records linked outcomes of low birthweight in Benghazi, Sudan with decreased care (Ziyo et al., 2009). Similar quantitative findings associated maternal non-adherence with poor fetal outcomes and fetal deaths in China (Jin & Wen, 2003) and Brazil (Almeida et al., 2007). Cross sectional comparison studies indicated inadequate prenatal care is associated with increased neonatal intensive care admission rates in Iran (Ashraf-Ganjoei, Mirzaei, & Anari-Dokht, 2011), and maternal mortality rates in India (Sangal et al., 2012).

A retrospective systematic review cohort study in Benghazi, Sudan, noted a positive correlation was demonstrated between poor maternal adherence to care and subsequent poor outcomes (Ziyo, et al., 2009). The researchers collected data using questionnaires and prenatal records from all 300 women who presented to the post-delivery ward of an area hospital over a 3-month period. The study utilized the Kotelchuck (1994) prenatal care utilization index (APUC) to define and categorize prenatal care service. The APCU index categorizes prenatal care utilization by the adequacy of the care and services, and the adequacy of the onset or initiation of care. The statistically significant results ( $p = 0.001$ ) of this quantitative study demonstrated poor

prenatal care adherence rates were associated with poor maternal and fetal outcomes in terms of low birthweight, and fetal mortality (Ziyo et al., 2009).

The significance of maternal adherence with antepartum care visits was further demonstrated by Almeida et al. (2007). The researchers utilized logistic regression analysis of data resulting from a randomized controlled experimental study in 14 administrative districts in the south region of the city of Sao Paulo, Brazil. The aim of the study was to identify risk factors for antepartum fetal deaths. The random 313 subject selection was made from a birth cohort database linking birth and death certificates over a 5-month period. Information was collected, analyzed, and compared from hospital records, birth and death certificates, and home interviews. A hierarchical conceptual framework was utilized to consider socioeconomic and demographic characteristics in the logistic regression analysis. The cohort was determined using electronic files of birth and death certificates. Eligible cases for inclusion were fetuses weighing greater than or equal to 500 grams, or those 22 weeks gestation or greater. Controls were made by sampling every 63 infants of the total 23,285 that survived a minimum of 28 days. The study was significant where the variables maintained a Wald  $p$ -value of  $<0.05$  (Almeida et al., 2007). Findings indicated inadequate or lack of prenatal care was a statistically significant variable associated with antepartum fetal death (Almeida et al., 2007).

A similar finding was identified in Iran which associated utilization of prenatal care services with low-risk pregnancy outcomes. Ashraf-Ganjoei et al. (2011) were able to correlate outcomes indicating adequate birthweights and decreased neonatal intensive care unit (NICU) admissions with adequate care. The cross-sectional study of 210 maternal patients contrasted 140 patients who had received adequate care, with 70

patients who had received inadequate care secondary to non-adherence. The delivery outcomes were compared after controlling for demographic variables of age, education, and onset of care by gestational age. The data was collected from data-recording sheets, interviews, and medical records. Exclusions of chronic or systemic diseases, smokers, and drug users were employed to limit confounding findings. After determining descriptive statistics (central and dispersion indices) data were analyzed utilizing SPSS software. Chi square testing was used in the comparison of the groups. The findings were considered significant where  $p$  value was less than or equal to 0.05 with a power of statistical test at 80%. The researchers concluded that infants born to women with inadequate care tended to have lower birthweights ( $p = 0.05$ ) and higher NICU admission rates after delivery ( $p = 0.02$ ), associating decreased care with poor newborn outcomes (Ashraf-Ganjoei et al., 2011).

Delay in seeking prenatal care is significant in terms of outcomes. Maternal mortality related to complications of pregnancy and childbirth may be avoidable with early and adequate prenatal care (Sangal et al., 2012). The researchers indicated that delay in care, treatment, and intervention for obstetrical danger signs were associated with maternal mortality during pregnancy and childbirth (Sangal et al., 2012). Sample selection for the 3 month cross-sectional survey was drawn from a prenatal clinic within a medical college in Gorakhpur, India. The facility averaged 1,100 patients per day with 15 prenatal admissions, and 41,000 admissions per year, accommodating a large number of potential patients, spanning multiple regions (Sangal, et al., 2012). Random sampling of every third pregnant patient yielded a total sample of 476. A pre-designed piloted semi-structured schedule was used to obtain information including background, reproductive

history, and knowledge assessment of danger signs prompting care in present and previous pregnancy. Data was collected on Microsoft Excel© spreadsheets, cross-matched for errors, and analyzed using chi-square test, and odds ratio calculations (Sangal et al., 2012).

Decreased knowledge, or delayed care stemming from an inability to identify or act upon danger signs is related to poor outcomes (Sangal et al., 2012). Sangal et al. (2012) found care-seeking behavior, based upon recognition of obstetrical dangers including hemorrhage, decreased fetal movement, and chronic disease, to be positively correlated with maternal education levels. The research demonstrated that 36% of multigravida patients with knowledge of danger signs understood the need to seek care in previous pregnancy. (Sangal et al., 2012). Issues that prompted pregnant women in the study to seek care were hemorrhage, hypertension, and diabetes, with maternal care-seeking response less than 60% for each category (Sangal et al., 2012). Sangal et al. (2012) concluded that decision-making to seek needed care services was often delayed due to a lack of maternal knowledge or understanding.

While outcomes of non-adherence have been measured utilizing quantitative methods, scientific inquiries aimed at identifying a causation for maternal non-adherence have been studied utilizing various research designs and methods. Cross-sectional studies demonstrated a social gradient in the utilization of care services based upon sociocultural and demographic variables in Vietnam (Fisher et al., 2010) and South Africa (Kongnyuy, Nana, Fomulu, Wiysonge, Kouam, Doh, 2007). Qualitative research demonstrated care-seeking delays related to maternal avoidance in the United Kingdom (Haddrill et al., 2014), socio cultural threats in Ghana (Dako-Gyeke, Aikins, Aryeetey, McCough, &

Adongo, 2013), and the United States (Milligan, Wingrove, Richards, Rodan, Monroe-Lord, Jackson, Hatcher, Harris, Henderson, Johnson, 2002), and psychosocial barriers and attitudes in Canada (Heaman et al., 2014). Non-adherence to care has been shown to exist among groups of women with shared risk factors.

### **Prenatal Mental Disorders as a Risk Factor to Non-adherence**

Women facing mental disorders may be at risk for decreased utilization of prenatal care services, perpetuating compromised care services while increasing risks of maternal morbidity and mortality (Fisher et al., 2010). A cross-sectional survey in rural and urban provinces of Vietnam determined associations between common prenatal disorders of depression and anxiety, with preventative health care among pregnant women. Fisher et al. (2010) recruited 364 eligible participants, of which 29.9% had been diagnosed with a common mental disorder of depression or anxiety (95% confidence interval). Participants were randomly selected from community health centers with similar characteristics. Data collection was made by a clinical and study-specific interviewing process. Based upon pre-existing research, the researchers developed a study-specific structured interview instrument with a fixed-choice formatting. The tool was reviewed by clinicians and researchers to validated meaning, comprehension, and culture appropriateness (Fisher et al., 2010).

Participants completed varied modules of common mental illness disorders including depression, anxiety, and panic disorders. Modules to assess for alcohol abuse were also completed. All were defined per the American Psychiatric Association's categorized Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), the

international gold standard for diagnosing mental disorders (Fisher et al., 2010). Modules completed were presented in the form of structured clinical interviews.

Multiple variables were assessed including sociodemographic factors, health care use, reproductive health, and relationships, including previous experiences of violence and abuse. Variables of mental disorders of depression and anxiety were explored through univariate analyses and analyzed with multivariate logistic regression. Fisher et al. (2010) findings confirmed a social gradient in which prenatal mental disorders were prevalent among patients in rural settings when compared with patients in urban settings. They further concluded that multiple factors contribute to mental disorders including poverty and violence (Fisher et al., 2010). Additionally, the researchers concluded that data was significant in suggesting utilization of prenatal care is compromised by poor mental health (Fisher et al., 2010). According to Fisher et al (2010), practice must integrate programs that address mental health, violence, and poverty in order to meet the needs of populations at high risk for decreased utilization of prenatal care services.

### **Adolescents at Risk for Non-adherence**

A cross-sectional quasi experimental study in Cameroon, South Africa indicated adolescents to be at risk for non-adherence with subsequent increased rates of adverse maternal and fetal outcomes (Kongnyuy et al., 2007). The complex qualitative study compared the outcomes of 268 singleton adolescent pregnancy outcomes with 832 controls, and was conducted in four teaching hospitals over a 6-month period. All primiparous women who were under 30 years of age and delivered a singleton birth were included in the study. The study was made up of three parts including a questionnaire of



socioeconomic variables completed prior to delivery, and two separate sections completed after delivery for fetal and maternal outcomes respectively.

When women were in labor, the initial questionnaire information was retrieved and compared with the data collected after the delivery in terms of maternal and fetal outcomes. Utilizing logistic regression models, an attempt was made to identify predictors of maternal and fetal outcomes with covariates of socio-demographic variables. Parameters were evaluated in terms of outcomes with an unadjusted odds ratio and 95% confidence interval. Statistical analyses were performed with a level of significance of  $p < 0.001$  for maternal and fetal outcomes (Kongnyuy et al., 2007).

The researcher's overall findings (odds ratio 1:8, confidence interval 1.4-2.4) indicated an increased likelihood of adverse fetal outcomes in adolescent mothers to be almost two-fold the rate of non-adolescent mothers (Kongnyuy et al. 2007). Though causal relationships were not explored, issues such as decreased resources and decreased education levels among adolescents were suggested as contributing factors, placing the adolescent population to be at risk for non-adherence (Kongnyuy, et al., 2007). The study did not address rare maternal or fetal outcomes, though it was multi-centered, with a varied represented population. A retrospective approach minimized bias of data collection. The study focused on identifying an association of adverse fetal outcomes among adolescent mothers as a risk population in the utilization of prenatal care services.

Adolescents and maternal age were further noted to be risk factors associated with inadequate or delayed onset of prenatal care (Haddrill et al., 2014). The researchers explored causations for delayed care among 27 women presenting for an initial visit after 20 weeks gestation, noting delayed care to be a risk for maternal morbidity and mortality

(Haddrill et al., 2014). The semi-structured qualitative study focused on 27 women presenting to community and maternity hospital settings in the United Kingdom. Inclusion criteria was limited to women who were 20 weeks gestation or greater who had not initiated any prenatal care prior to presentation. Individual interviews were conducted with simultaneous data collection, analysis, and comparison. The sample was diversified to include at-risk groups of adolescents, migrants, substance abusers, and those with learning disabilities. Women of varied parity, socioeconomic status, education levels and ethnicities were included.

Transcribed interviews were entered onto NVivo; thematic analysis was conducted using an interdisciplinary approach. Emerging themes identified for late care were noted to be decreased knowledge, disbelief, avoidance, and system failures that prevented care access before 20 weeks (Haddrill et al., 2014). Findings indicated that decision making guides future attitudes, influenced by previous pregnancy, and the perceived value of care (Haddrill et al., 2014). The researchers concluded that initial access to prenatal care is determined by decision making, involving interrelated and complex psychological, sociocultural, and demographic factors (Haddrill et al., 2014).

Similar findings indicating the need for support in decision making and relationships among pregnant adolescents in Minnesota (Schaffer & Mbibi, 2014). Data analysis of findings aimed at identifying the effect of mentoring relationships during pregnancy on outcomes of adolescent parenting were significant in demonstrating a positive correlation between the public health mentors, as part of a social network, and adolescent perceptions regarding successful parenting. Adolescents' perceptions of positive nursing support in terms of mentoring and supportive relationships assisted in

transitioning to parenthood. Themes of support were identified as non-judgmental care, encouraging strengths, provision of useful information, assistance in decision making, and feelings of acceptance, honor, and respect (Schaffer & Mbibi, 2014).

### **Socio-cultural and Geographical Risk for Non-adherence**

Education, lifestyle choices, individual circumstance, and attitude have been shown to affect prenatal care use and influence outcomes. Qualitative research indicated risk perception, cultural threats, and geographical location influence decision making in Ghana (Dako-Gyeke et al., 2013). Similarly, a case controlled study (Heaman et al., 2014) and quantitative randomized controlled study in Canada noted that within the context of socialized healthcare, where care is free at the point of entry, maternal non-adherence persists, and is influenced by individual factors (Tough et al., 2007). This research finding supports the multidimensional issue of individual and complex barriers to maternal adherence with the utilization of prenatal care.

Multiple socio-cultural and geographical factors influence decision making, impacting the utilization of prenatal care (Dako-Gyeke et al., 2013). The researchers noted gaps in the utilization of care services in the developing community of urban Accra, Ghana were influenced by the socio-cultural environment, prompting maternal patients to seek non-traditional prenatal care (Dako-Gyeke et al., 2013). A qualitative study of six focus groups was formed with 13 in-depth interviews. The purposeful sampling of 55 participants included community leaders, healthcare providers from both traditional and non-traditional (spiritualist and herbalist) sectors, and 35 women. Of the 35 women included in the study, 17 were pregnant, or had delivered within the past year. Audiotaped interviews and discussions were transcribed and coded into larger themes and

categories. The researchers sought to explore the varied ways that pregnant women accessed prenatal and delivery care in the cross-sectional survey, with cost analysis and qualitative methodology. The study was unique in that previous studies had focused on patients in rural areas, while Dako-Gyeke et al. (2013) sought to identify the influences of socio-cultural norms regarding prenatal care from an urban perspective.

Dako-Gyeke et al. (2013) found that participants viewed the biological phenomenon of pregnancy to be widely perceived as uncertainty, aside from expected pain and stress. Dako-Gyeke et al. (2013) noted the participants identified threats of pregnancy in terms of spiritual and non-spiritual. Non-spiritual encompassed the physical aspects of pregnancy and psychological or social aspects, including social and familial support (Dako-Gyeke et al., 2013). The threat of spiritual vulnerability was commonly expressed by most of the women in terms of supernatural evil attack with physical manifestations (Dako-Gyeke et al., 2013). The researchers noted that the decision-making process regarding when to seek traditional versus non-traditional care depended upon how the participants perceived the nature and type of threat to the pregnancy (Dako-Gyeke et al., 2013).

Dako-Gyeke et al. (2013) concluded that prenatal care-seeking behavior is largely mediated by individual perception, shaped by socio-cultural influences. Evidence of socio-cultural influence as a barrier to prenatal care, was further demonstrated in vulnerable populations of urban and inner-city women (Heaman et al., 2014; Milligan et al., 2002). Pregnant women living in poverty, substances abusers, and the homeless are at risk for decreased prenatal care with high infant mortality (Milligan et al., 2002). Heaman et al. (2014) noted that psychosocial barriers, in addition to economic and attitudinal

barriers, were found to affect utilization of prenatal care services. The case-controlled quantitative study was able to demonstrate that socioeconomic disparities exist as a barrier to care services within the context of socialized healthcare (Heaman et al., 2014).

A socialized healthcare comparison case-controlled study of obstetrical patients took place among two hospitals with combined deliveries of 10,000 to 11,000 births per year in Winnipeg, Canada (Heaman et al., 2014). Researchers recruited all participants from the same eight disadvantaged neighborhoods. A sample of 202 cases of defined inadequate care and 406 controls of adequate care, frequency matched 1:2, was selected after a sample size estimate using *StatCal* (Heaman et al., 2014). Most of the individual interviews took place in the hospital setting, with some taking place in patients' homes postpartum. Interviews were conducted with interpreters when needed, and trained interviewers. Standardized closed questions were developed from an established and tested tool as the main source of data (Heaman et al., 2014). Socio-demographic characteristic data was collected. Analysis was performed using SPSS statistics, and chi-square test was used to test for differences in demographic and prenatal variables; independent *t*-test was additionally used to test differences between continuous demographic and prenatal care variables (Heaman et al., 2014).

Identified barriers to care included patients' negative attitudes toward the pregnancy and care, with almost 25% of the women noting that they did not need prenatal care (Heaman et al., 2014). Additional barriers included fear of studies and treatment, being dissatisfied with care and providers, and forgetting appointments (Heaman et al., 2014). In addition to attitude, psychosocial issues including depression, anxiety, challenges of care access, communication, not wanting a male examiner, transportation,

childcare, and homelessness among barriers to care (Heaman, 2014). Motivating factors included the opportunity to gain information, and a belief that prenatal care would promote healthier outcomes (Heaman et al., 2014). The researchers concluded that the utilization of care is multidimensional and complex, involving individual psychosocial, attitudinal, structural, and economic barriers that need to be addressed to decrease the challenges and barriers to adequate care (Heaman et al., 2014).

### **Racial and Economic Disparity Risk Factors**

Racial and economic disparity, particularly among unmarried, unemployed, African American primiparous women has been identified as a factor influencing utilization of care services and subsequent maternal, newborn, and child mortality (Olds et al., 2014). The Olds et al. (2014) longitudinal randomized clinical trial in Memphis Tennessee compared obstetrical maternal patients and their children, living in adverse conditions, and the increased risk for premature death. Patients were randomized into one of four groups receiving four different levels of treatment. All patients were provided transportation to prenatal care visits. In addition, those in the second group were given developmental screening for infants and toddlers, while those in the third group were provided screening with home visits for pre and postpartum care. The fourth group received all of the treatments and additionally received infant and toddler in-home nurse visits. The National Death Index was used to document cases of mortality in maternal patients and as a measurement of preventable-cause mortality for infants and children.

The findings were significant ( $p = .007$ ) in the third group and in the fourth group ( $p = .008$ ) to indicate that home visitation was an identified factor in reducing mortality rates among maternal patients and their first born children in at-risk or disadvantaged

environments (Olds et al., 2014). The researchers concluded that the outcomes, as an unequivocal measure of success, aligned with the program's goals of addressing the need for early and adequate intervention during the prenatal period for identified vulnerable populations living in adverse contexts (Olds et al., 2014). Olds et al. (2014) noted that the reduction in external-cause maternal mortality, with the support of home visiting nurses, was most likely attributed to the maternal health-promoting lifestyle behaviors that were identified and initiated by the maternal patients in anticipation of risk outcomes.

### **Education, Lifestyle, and Psychosocial Risk Factors for Non-adherence**

A supporting quantitative randomized control study in Alberta, Canada indicated younger women with decreased levels of education were at risk for maternal adherence with prenatal care services (Tough et al., 2007). The researchers randomized 1,737 participants into one of three groups with either standardized care, standard care with a trained nurse for support, or standard care, nurse support, and home visits from non-nursing personnel. Participants were given support services and incentives such as free childcare and transportation to promote compliance throughout the prenatal period. The randomized controlled study was designed to increase understanding with regard to non-adherence by comparing groups for differences. The researchers enrolled women into the study, intending to retain them through the pregnancy while promoting participation in prenatal care. The authors noted the importance of prenatal care in terms of supporting positive maternal behavior changes to improve outcomes, while enhancing the pregnancy experience by meeting biological, psychological, and social needs (Tough et al., 2007). The aim of the study was to identify practice change opportunity to meet patient needs regarding prenatal care and improved adherence. The researchers focused on the outcome

of retaining women in the study to term gestation, with the aim of identifying differences between women who participated, or were retained through the prenatal period, and those women who either dropped out of the study, or who became unreachable.

Retention strategies included the involvement of multiple contact sources, arranging for nurses to meet the patients in convenient locations, providing home visits, multi-lingual nurses, and multiple phone calls to reach the participants. Data was collected, and chi-square tests were used to analyze the data with statistical significance set at  $p$  less than or equal to 0.05 (Tough et al., 2007). Women who dropped out of the study, or were unable to be contacted, were compared at the bivariate level with regard to demographics. Comparisons were made using multivariable modeling, including logistic regression models and step-wise regression to determine probability for non-program completion. Analyzed findings revealed significant differences between the women who completed the study from those who did not. Tough et al., (2007) noted variables such as social demographic characteristics, young maternal age, decreased education levels, and low income were associated with non-completion of the program. Likewise, non-Caucasian women and women without partners were identified at risk, as were smoking women and those who admitted to using drugs within the previous 12 months (Tough et al., 2007). Women who utilized alcohol, had depression, suicidal thoughts, and those who were unemployed but wanted to be working, were likewise noted among the participants who dropped out of the study (Tough et al., 2007).

The findings were analyzed in comparing the two groups, based upon whether they responded and were retained in the program, or not. Demographics of lifestyle, psychosocial factors, and life differences were compared using chi-square tests. Logistic



regression modeling was used to determine probability. Findings were analyzed and determined to be significant with  $p$  values  $< 0.05$  for all categories (Tough et al., 2007). The researchers concluded from the analysis that intervention was not a factor in the completion rates. Tough et al. (2007) concluded lifestyle, personal behavior, and individual circumstance increased the risk of non-adherence to prenatal care among maternal patients. Despite a universal healthcare system, where care is free at the point of entry, women are consistently non-adherent to care, indicating that socioeconomic resource alone is not the singular issue associated with non-adherence (Tough et al., 2007). The issue of non-adherence represents a complexity of health, lifestyle, psychosocial issues, and circumstance, unique to each maternal patient. This finding may indicate an existent gap between individual patient need and provider service, demonstrating the need for individualized methods of promoting prenatal care utilization.

### **Learning Barriers and Lack of Knowledge as a Risk Factor for Non-adherence**

Learning barriers as a risk for non-adherence have been studied in quantitative measures (Stark 2001; Stark, 2006) and in non-experimental descriptive comparison studies (Prathima, 2014), indicating a relationship between patient understanding, provider communication, and adherence to care (Atreja, Bellam, & Levy, 2005). As patients present with varied learning needs and levels of understanding, patient centered care that addresses individual need has the ability to improve patient satisfaction and adherence. In a cross-sectional descriptive correlation study, Hamdan-Mansour, Marmash, Alayyan, & Hyarat (2014) noted patient understanding and perception affect utilization of care services in Jordan. Similar findings were noted a descriptive semi-structured qualitative approach in Malawian women (Kumbani, Chirwa, Malata, Odland,

& Bjune, 2012) and in a conceptual framework designed qualitative systematic review in Europe (Balaam, Akerjordet, Lyberg, Kaiser, Schoening, Fredriksen, Ensel, Gouni, & Severinsson, 2013).

As pregnancy effects change, it benefits the maternal patient to possess an awareness of inherent expected change, and by contrast, to be able to identify unexpected change, or conditions that may pose a health risk. Pregnancy provides an increased opportunity for learning at a time when the need for information is heightened. Prenatal care visits provide the opportunity for pregnant women to learn, plan, problem solve, and to anticipate life altering changes that accompany the role of motherhood (Stark, 2001). Stark (2001; 2006), studied the effect of direct attention in maternal patients experiencing a normal pregnancy. Direct attention is the ability to engage in tasks such as memory, learning new information, problem solving, skill based activities, and planning (Stark, 2001). Stark's findings in the 2001 quantitative study demonstrated that pregnant women have a reduced ability to demonstrate direct attention when compared with non-pregnant women (Stark, 2001). Stark revisited the 2001 study with a follow-up study in comparing high risk pregnancy patients (n =67) to her previous low-risk group (n =57) with regard to direct attention in objective and subjective capacities, The quantitative descriptive comparison study was based upon conceptual models that addressed adaptation to change and self-care behaviors (Stark, 2006).

Stark's measurements included memory and attention based tasks, perceptive responses, estimation, and cognitive tasks with a test-retest reliability coefficient range of > 0.60 for most measures. The internal consistency using Cronbach's alpha was calculated for each of the individual groups, scoring 0.88 for the low-risk group, and 0.89

for the high-risk group (Stark, 2006). The research was able to demonstrate a decrease in the direct attention of pregnant women experiencing a high risk pregnancy from those experiencing a low-risk pregnancy (Stark, 2006). The Stark (2006) study was determined to be statistically significant ( $p < 0.001$ ) in associating high risk pregnancy with a decrease in direct attention in Mental Effort Tasks (MET), in addition to Attention Function Tests (AFT) ( $p = 0.033$ ), and counting tests ( $p = 0.033$ ). Stark (2006) noted that underlying medical conditions and pregnancy conditions that place women at higher risk may require prescription medications or treatments that potentially impact upon the maternal patient's direct attention capabilities.

Replication of the study would be difficult without consideration of the time spanning the two studies. Limitations of the study include the compared population groups, small size, recruitment methods, and the potential to yield findings unrelated to the factors that have the ability to impact upon testing. Issues such as learning disabilities, communication barriers, impediments to care or treatment, and underlying maternal medical conditions were not addressed in the study. One of the strengths of the study was that it successfully probed the concept that in the presence of increased educational need, pregnant women may have a decreased ability to learn in terms of direct attention (Stark, 2001; Stark, 2006). Pregnancy and motherhood create life-altering change. Adequate knowledge and understanding may be an effective motivator for care-seeking behavior.

While pregnancy causes multiple expected physiologic changes, it is crucial that maternal patients have the knowledge to be able to distinguish, identify, and seek prompt attention for unexpected changes that may threaten health outcomes. Among health risks that often affect maternal and fetal survival rates is pregnancy induced hypertension

(Prathima, 2014). Lowering the risk of poor outcomes associated with pregnancy induced hypertension requires early attention and treatment, prompted by adequate knowledge to distinguish signs and symptoms, and to initiate disease prevention measures. Prathima (2014) notes that maternal death related to complications of pregnancy induced hypertension may result from inadequate knowledge, negative attitudes, and inadequate healthcare. Appreciating that health outcomes of pregnancy-induced hypertension may depend upon health seeking behaviors driven by maternal knowledge, Prathima (2014) designed a non-experimental descriptive comparative study to assess the knowledge level of self-care management of pregnancy induced hypertension among maternal patients.

The objectives of the study included the identification of baseline knowledge of pregnancy induced hypertension of primigravidas, multigravidas, and to identify the comparison between them. In addition, the researcher sought to identify associations between the demographic variables with corresponding knowledge levels (Prathima, 2014). The sample of 80 maternal patients was selected using purposeful sampling, and was comprised of 40 primigravidas and 40 multigravidas. Prathima (2014) utilized a self-administered questionnaire in two parts. The first was designed to obtain demographic data including education, age, occupation, income, and parity. The second was utilized to identify knowledge regarding self-care management of pregnancy induced hypertension. The knowledge tool utilized was tested for validity, with reliability internal consistency assessed through Cronbach's alpha (Prathima, 2014). The multiple choice questionnaire of patient responses regarding pregnancy induced hypertension measured participant knowledge in terms of adequate, moderately adequate, and adequate levels.

Prathima (2014) found 55% of primigravida patients and 40% of multigravida

patients had inadequate knowledge regarding pregnancy induced hypertension. Comparison of knowledge regarding pregnancy induced hypertension indicated 5.0% of multigravidas and 2.5% of primigravidas had adequate knowledge (Prathima, 2014). Primigravida recognition of the signs and symptoms (31.8 %) and preventative measures (38.6 %) of pregnancy hypertension was noted in decreased measures, with similar findings for multigravida patient knowledge regarding signs and symptoms (35%) and preventative measures (44.7%) (Prathima, 2014). Chi-square analysis was used to determine significant associations between levels of knowledge and self-care management, age, and monthly income. Findings indicated that younger patients with decreased financial resource had decreased measured knowledge levels (Prathima, 2014). The researcher concluded that healthcare providers have an increased obligation to provide at-risk populations with information to increase maternal knowledge levels to improve maternal and child health (Prathima, 2014).

Addressing non-adherence requires the inclusion of the patient in the plan of care (Atreja, et al., 2005). A systematic review of MEDLINE studies spanning 12 years was initiated to identify patient understanding. The qualitative synthesis placed studies of inclusion into six categories aimed at identifying causations of non-adherence to medical regimes. Atreja et al. (2005) noted communication is problematic in the client-provider relationship, decreasing patient understanding and impacting upon adherence. Atreja et al. (2005) noted that more than 50% of patients who present for care, leave their doctor's office without understanding what they have been told during the visit. Additionally, Atreja et al. (2005) noted that poor communication was demonstrated by health providers' failure to identify patients' psychosocial and psychiatric problems, and by

not allowing time for patients to discuss their individual concerns (Atreja et al., 2005).

### **Centering-Pregnancy Programs and Education Support to Decrease Non-adherence**

Centering-pregnancy (CP) programs have supported the effects of meeting assessment needs, psychosocial support, and educational needs of pregnant women in comparison studies of women participating in centering-pregnancy group care with those receiving traditional care. Tanner-Smith and Lipsey (2012) found that supportive mentoring as a method to meeting patient needs was successful in Tennessee. Women who participated in CP care were more likely to keep visits due to the supportive nature of the program, extending educational opportunities, with subsequent adherence and assessment. The researchers noted that multivariate statistical analyses demonstrated CP care had outcomes of decreased preterm delivery and low birthweight (Tanner-Smith & Lipsey, 2012).

Supporting evidence of the CP Program was noted in qualitative research among midwives in the Midwest region of the United States. Baldwin and Phillips (2011) noted the CP model, based upon patient-centered and restorative empowerment models was successful in offering condensed group education and supportive care needed to empower women to accept responsibility and plan for motherhood. The researchers probed the perceptions of midwives who participate in the CP program of group care for education and support. They concluded that CP, as a method to increase knowledge and expectation, provided educational opportunities to satisfy patients' educational needs while reaching diverse groups of women (Baldwin & Phillips, 2011). The researchers identified the theme of knowledge in prenatal care to improve patient satisfaction and outcomes (Baldwin & Phillips, 2011). Patient knowledge is a significant factor in

maternal adherence (Baldwin & Phillips, 2011; Tanner-Smith & Lipsey, 2012).

### **Patient Centeredness**

Addressing patient needs may reduce the risk of non-adherence risk. Aragon, Richardson, & Gesell (2013) researched patient perception of care among maternal patients in the US. The aim of patient centeredness is directed toward addressing patient needs, with a focus on trust, satisfaction, adherence to care, and improved outcomes. The objective of the study was to examine whether patient centeredness in obstetrical nurses was able to positively influence Medicaid patients' perception of satisfaction. The researchers drew their sample from the Press Ganey National Inpatient Database which comprises data from over 1,000,000 discharged patients across 49 states (Aragon et al., 2013). The researchers drew a random selection of 900 obstetrical Medicaid participants, assigning 300 patients to one of three independent cross-sectional samples.

The instrument used was a 49 question quality improvement survey with a five point scale. Participants completed surveys, data was coded, and set into the Press Ganey National Inpatient Database. The survey measured nurse friendliness and courtesy, nurses' ability to keep patients informed, nurses' attitude toward patient needs, and nurses' attention to patient needs (Aragon et al., 2013). Factor analysis confirmed reliability and validity of the study's model. The researchers determined the study to be statistically significant in associating nursing patient-centeredness with patient satisfaction (Aragon et al., 2013). Findings suggest patient-centeredness interventions aimed at improved patient care experiences may positively affect patient satisfaction. Patient centeredness was demonstrated to improved maternal, pregnancy, infant, and childhood outcomes in a clinical trial, spanning two decades, demonstrating the benefit

of home nurse visits upon outcomes of vulnerable maternal patients (Olds et al., 2014).

### **Health Locus of Control**

A related study demonstrated the effectiveness of the nursing role toward patient empowerment and patient control in a partnership model. Hamdan-Mansour et al. (2014) utilized the Health Locus of Control (HLOC) model to assess for differences in patient perception and satisfaction in Jordanian obstetrical patients. The cross sectional, descriptive, correlation design study was used to collect data with self-reported questionnaires from nurses and patients. The aim was to identify differences in perception related to patient HLOC and patient perception related to demographic and personal characteristics (Hamdan-Mansour et al., 2014). The instrument was pilot tested with 20 patients and 20 nurses for reliability and validity. It was translated into Arabic, then translated back to English with both forms compared for conceptual meaning. After pilot testing, the study was conducted among 180 nurses and 178 patients. The instrument was the Multidimensional Health Locus of Control Scale. The scale was composed of three subscales measuring internal control, control of powerful others, and chance.

The aim was to measure the degree to which individuals believed their own behavior affected health outcomes, the degree to which outcomes depended on powerful others, and the degree to which outcomes were related to chance (Hamdan-Mansour et al., 2014). *T*-test was used to test for difference in perception and chi-square was used to examine difference in relation to demographic and personal factors. The analysis of data indicated that while participants and nurses believed that chance was rated low in terms of health outcomes, patients believed that power to affect outcomes was most significantly controlled by others (Hamdan-Mansour et al., 2014). After examining the



mean item scores to distinguish the most powerful influencing factor, the researchers determined that patients believe health professionals have the greatest control in determining patient health outcomes (Hamdan-Mansour et al., 2014). This study was significant in understanding patient perception related to health outcomes. Similarly, Kumbani et al. (2013) found maternal perception of care is important as it influences utilization of care services.

Women's perception of prenatal care services may be pivotal in their decision to continue participation, subsequently affecting maternal, fetal, and delivery outcomes. Kumbani et al. (2013) conducted a descriptive semi-structured qualitative study with face-to-face in-depth interviews to assess the perceptions of Malawian women with regard to prenatal care. The researchers conducted 14 in-depth interviews at a hospital to assess the quality of the care and information the women perceived, during pregnancy, delivery, and postpartum. Thematic analysis indicated two emerging themes of good and unsatisfactory with regard to care. The themes were further divided into subthemes with good care defined by respect and confidentiality, in addition to privacy and delivery (Kumbani et al., 2013). Unsatisfactory subthemes were identified as negative provider attitudes, long waits for care, inadequate care and decreased attention from delivery attendants (Kumbani et al., 2013). The researchers determined the participants who were less critical of care had lower levels of knowledge with decreased levels of education and expectation by noting that the women desired to be received and treated with respect, but were unaware of the standards of care, affecting expectation (Kumbani, 2013).

Low levels of knowledge, low expectation, and decreased resources may deny women needed access to adequate prenatal care. Disadvantaged maternal populations and

perception of care services were further studied by Balaam et al. (2013) in a systematic review of European countries. The researchers noted that despite existent ratified human rights resolutions and anti-discrimination rules, social inequities persist for migrant women (Balaam et al., 2013), defining them as a vulnerable population with increased risk for non-adherence to care.

The Health Locus of Control (HLOC) was further demonstrated in research which identified that maternal fetal attachment in vulnerable populations is correlated with an increase in internal locus of control, and subsequent positive prenatal health behaviors (Kornfield, Geller, and Epperson, 2014). The researchers studied young, low income, minority women with unplanned pregnancies at risk for sexually transmitted infections (STI) and Human Immunodeficiency Virus (HIV). The statistically significant quantitative study conducted in the United States indicated a significant relationship between maternal fetal attachment and health promoting behaviors (Kornfield et al. 2014). The research showed that with increased attachment, maternal patients are able to recognize the influence of their own actions on health related outcomes, with the ability to impact upon self-directed care behavior (Kornfield et al., 2014).

### **Vulnerable Populations**

Vulnerable populations are, in part, identified in terms of culture, resource, social, economic, education, and living environments that affect the opportunity to identify and implement choices aimed at health and well-being. The World Health Organization (WHO) has identified, through the social determinants of health, that resources have the ability to impact and enhance the quality of life with subsequent influence on health outcomes (CDC, 2011). Supportive care for vulnerable maternal patients during the

prenatal period has been correlated with improved prenatal care adherence (Olds et al., 2014). Meeting the social, emotional, and economic needs of maternal patients has been shown to facilitate stability through a culture of trust (Olds et al., 2014). Understanding the maternal experience and meeting patient needs is a central focus of research efforts aimed at practice change to improve maternal, fetal, and delivery outcomes.

Exploration of the perception of migrant women in a conceptual framework research design was the basis for a European project aimed at understanding the migrant maternal experience and the needs of those patients (Balaam et al., 2013). The qualitative systematic review of 140 articles was narrowed based upon exclusion criteria, and by applying inclusion criteria with quality and validation reviews. The authors applied various qualitative approaches, extracted data and evaluated articles of inclusion for aim, design, researchers, methods, rigor of data, and analysis. Thematic data was synthesized through coding, organizing, analyzing, and sorting data into descriptive themes.

The primary themes included preserving integrity, finding meaning, and experiencing caring relationships (Balaam et al., 2013). Sub-themes included communication, coping, maintaining safety in pregnancy and birth, and bodily integrity (Balaam et al., 2013). Barriers to maternal care were noted as an additional sub-theme of caring, with caring relationships as an identified source of strength, influencing health and well-being (Balaam et al., 2013). Findings included the feeling that migrant women have increased stress caused by the need for adaptability to stress and feelings of vulnerability (Balaam et al., 2013). The authors suggest improvement of care aimed at building caring relationships, collaboration, increasing patient knowledge, and increasing patient understanding related to care (Balaam et al., 2013).

Balaam et al. (2013) concluded by noting that the patient and healthcare provider relationship is limited by organizational barriers, including access to care. An identified challenge for healthcare providers is to address patient care-related problems, particularly for maternal patients who are at risk for social inequality and decreased access to care with subsequent outcomes. The health belief model describes behavior motivation in terms of risk perception (Rosenstock et al., 1988). Patient appreciation of risk, as a basis for care-seeking behavior, is paramount in the utilization of prenatal care visits and services. Perception of risk, however, may be diminished in pregnancy due to learning barriers (Stark, 2006) and in terms of socioeconomic status and anxiety levels (Lee et al., 2012). An accurate perception of risk has the potential to guide behavior, and affect pregnancy outcomes (Lee et al., 2012).

### **Maternal Perception**

Risk perception has been studied qualitatively in the United States by applying the health belief model in terms of susceptibility and vulnerability in motivating behavior (Frohworth et al., 2013), and in a quantitative systematic review aimed at understanding maternal risk perception in high-risk pregnancy (Lee et al., 2012). Mixed methods research with qualitative interviews and quantitative measures were utilized in Canada to understand patient perspectives of interpersonal process and perceived quality of care (Heaman et al., 2014). Maternal perception has also been the focus of quantitative research in Japan, indicating multiparous patients are at increased risk to engage in health compromising behaviors with subsequent pregnancies (Okah & Cai, 2014).

An understanding of how multiparous patients perceive the significance of prenatal care, within the context of beliefs, behavior, and previous outcomes, has

potential to raise awareness, guiding patient-centered practice changes, aimed at meeting individual patient needs. Research has focused upon causations for maternal non-adherence by examining groups of women with presumed shared challenges. Every maternal patient faces a unique journey and brings an individual perspective to pregnancy, creating the inherent need to approach the research from the patient perspective. Perception formed from knowledge, interpretation, beliefs, and experience may influence a maternal patient's decision or ability to adhere to care. The health belief model (Rosenstock et al., 1988) attempts to explain behavior in terms of motivation, based upon perception. Perception of risk in terms of susceptibility and severity, has been shown to be a guiding determinant in care seeking behavior (Frohworth et al., 2013).

### **Perception and Susceptibility**

Frohworth et al. (2013) examined susceptibility as it related to perception in women seeking abortion following an unwanted pregnancy. The qualitative semi-structured study was aimed at measured perceived low susceptibility as a significant determining factor in the behavior of not utilizing contraception to prevent an unwanted pregnancy. The researchers proposed a version of the health belief model (Rosenstock et al., 1988) to examine evidence of perception regarding low susceptibility in 49 women in 10 different abortion sites who either just had an abortion, or who were returning post-abortion for their follow-up visits (Frohworth et al., 2013). In the semi-structured qualitative design, they conducted face-to-face interviews with women in a mid-sized abortion clinic in Texas, a large abortion clinic in rural Washington State, and a small clinic in Connecticut (Frohworth, et al., 2013). The women were asked why they failed to utilize birth control measures if pregnancy was undesired. Based upon data analysis, the

researchers concluded that the theme of invulnerability or decreased susceptibility was significant (n=32/49) in women's perception of getting pregnant, and subsequent failure to prevent an unwanted pregnancy (Frohworth et al., 2013). This study indicates the association of self-perception with behavior.

Understanding how individuals are able to appreciate and value the level of health risk and perception of severity and consequence is significant in explaining and predicting behavior that contributes to health outcomes. Increasing awareness, susceptibility, and knowledge has demonstrated the potential to improve methods of practice. Engaging patients in understanding their attitudes and beliefs may assist healthcare providers in identifying individual patient barriers to prenatal care. Brighton et al. (2013) explored the perception of Sub-Saharan African women with regard to prenatal care through systematic analysis of studies spanning 13 years. The thematic synthesis of collating 27 qualitative studies was clustered for analysis, revealing six major themes of patient perception regarding prenatal and delivery care. Themes that emerged indicated patient perceptions regarding barriers to care were related to provider attitude within the community with a lack of cultural sensitivity (Brighton et al., 2013).

Provider attitude may affect patient perception regarding the quality of care (Sword, Heaman, Brooks, Tough, Janssen, Young, Kingston, Helewa, Akhtar-Danesh, & Hutton, 2012). Evidence indicates that quality prenatal care that addresses patient lifestyle and psychosocial needs improves positive pregnancy outcomes (Sword et al., 2012). A descriptive study with semi-structured interviews was conducted to assess the perspectives of quality prenatal care between 40 pregnant women and 40 prenatal health care providers in five urban centers across Canada (Sword et al., 2012). The descriptive

exploratory design utilized a conceptual framework derived from Donabedian Model of quality health care (Sword et al., 2012). All participants were recruited from five urban centers across Canada with a wide range of prenatal care services and diverse populations. Purposeful sampling created an in-depth understanding of quality care.

Providers were selected for participation based upon a minimum number of years in practice, length of time in practice, and setting. The interviews were conducted by trained researchers and guided by the Donabedian Model (Sword et al., 2012). All interviews were recorded and transcribed, and quantitative data was collected through a brief questionnaire of background information on all participants. The qualitative data was analyzed using NVivo 7, with quantitative data analyzed with SPSS 17. Strategies were utilized to ensure rigor of qualitative analysis, and emergent themes were validated by the participants to ensure the data was trustworthy (Sword et al., 2012).

Emerging themes addressed the aspects of prenatal care with clinical and interpersonal processes as the most essential element associated with perceived quality (Sword et al., 2012). Findings were significant to indicate that involving women in care and keeping them engaged throughout the prenatal period is paramount in mitigating adverse outcomes (Sword et al., 2012). The researchers noted that provider focus needs to extend beyond the identified biomedical aspects of care to include meaningful and trusting relationships between the provider and patient.

### **Altered Risk Perception**

Lee et al. (2012) noted that maternal risk perception presents as a complex issue, and may directly impact the well-being of the maternal patient and her unborn child in terms of attitudes toward care and treatment. As social and physiologic conditions may

increase risk, affecting maternal and fetal outcomes, Lee et al. (2012) attempted to understand the objective and subjective components of risk assessment in terms of coping strategies and outcomes. Noting that risk is relative within a social context, and that the presentation of information affects perception, the authors describe risk perception in terms of being an instrument to initiate patient self-care behaviors (Lee et al., 2012). The researchers note that pregnancy outcomes are not predictable, hence perception of risk is subjective in terms of history and cultural influence, extending the concept of risk beyond the probability of outcomes (Lee et al., 2012). The importance of understanding risk is significant in appreciating that risk, according to the health belief model (Rosenstock et al., 1988) presents as an influencing factor with regard to patient judgement, agreement to plan of care, and adherence to care (Lee et al., 2012). The purpose of the study was to seek improved clinical management in women with high risk pregnancies by building communication, increasing patient satisfaction, and raising maternal adherence to prenatal care services.

A systematic review of quantitative studies regarding risk perception among high risk prenatal patients was conducted from more than eight electronic data bases spanning 33 years and 83 studies (Lee et al., 2012). The researchers applied inclusion and exclusion criteria, with quality assessment and scoring according to the 2004 Mirza & Jenkins quality checklist, and inter-rater reliability in their comparison study (Lee et al. 2012). All studies utilized self-administered questionnaires. Comparisons were made between high and low risk pregnancies with objective, subjective, and socio-economic variables addressed.

Lee et al. (2012) noted findings of their systematic review were significant in



that women with high risk pregnancies recognized a degree of increased risk when compared with low-risk pregnant women, but that there were inconsistencies in the associated patient perceived risk scores when compared to healthcare provider ratings. Women in the study consistently perceive their level of risk to be less severe when compared with the ratings assigned by their providers (Lee et al., 2012). Additional findings noted that high-risk pregnancy was associated with lower education levels, decreased income, higher levels of anxiety, and non-Caucasian maternal patients (Lee et al., 2012). The researchers (Lee et al., 2012) concluded that further exploration is needed to identify information that influences maternal patient judgment regarding risk and risk perception to understand the interaction between maternal patients and their providers is shaped.

### **Multiparous Patients**

Maternal risk perception as a factor in behavior has been explored in literature. Okah & Cai (2014) examined the effect of risk perception on future pregnancy health behaviors among primiparous patients in the United States. The researchers found that women are more likely to engage in health compromising behaviors with subsequent pregnancies, regardless of previous outcomes Okah & Cai (2014). The retrospective cohort study examined 137,374 pregnancies after 20 weeks over a 10-year period. Data from vital statistics including birth certificates with intake history, demographics, health behavior, age, education, marital status, race and gravida and previous care were compared with health compromising behavior with chi-square. Analyses were conducted with SPSS version 18. Additional analysis included logistic regression with health compromising behavior as the outcome variable. The findings were found to be

statistically significant where  $p < 0.05$  (Okah & Cai, 2014).

The researchers noted those who had delivered previously, regardless of outcome, have less concern for their health and consequences of health-compromising behavior than those who were pregnant for the first time (Okah & Cai, 2014). Okah & Cai (2014) concluded optimism, based upon expectation, may guide behavior with diminished fear and anxiety. They concluded health compromising behavior may increase with subsequent pregnancies, based upon the belief that previous experience makes health information less applicable to them (Okah & Cai, 2014). Okah & Cai (2014) noted that multigravida patients view health advice differently and are less likely to adhere to warnings and social or environmental factors associated with health compromising behaviors. While limitations of self-reporting typically reflect under-reporting, findings were significant to indicate increased health compromising behavior among multigravida patients (Okah & Cai, 2014). The study highlights the need to reconsider how previous pregnancy affects patient decision making behaviors in research and in practice.

### **Gaps in Literature: Recommendations for Future Research**

An overview, search, and review of the literature indicated that empirical studies have been conducted globally to identify the importance of prenatal care, problematic maternal non-adherence to care, adverse outcomes associated with maternal non-adherence to care, and maternal groups at risk for non-adherence. Research has supported the existence of the problem of maternal non-adherence with subsequent adverse outcomes. Literature focused upon the perceptions of maternal patients regarding the quality of care, barriers to care, relationships, violence, lifestyle, and spiritual influences utilized a qualitative approach, centered within a constructivist paradigm. An evenly

balanced number of quantitative studies with measured outcomes regarding prenatal care, adherence, and maternal challenges were identified. Measured outcomes included maternal and fetal morbidity and mortality, learning and memory test scores, and correlations of prenatal care visits with measured outcomes of specific influencing variables of achieved education levels, resources and financial income ranges, socioeconomic comparisons, and scales of measurement with regard to mental disorders.

While existent research has noted associations between groups of women who share similar circumstance or traits with a risk of non-adherence to prenatal care, all patients are influenced by varied, unique, and complex challenges. Pregnancy, as a condition of change, is experienced individually, subject to personal interpretation regarding perception of benefit, needs, and cues to action. In a search for causations, researchers have focused upon the problem from a limited or isolated standpoint, utilizing medical models to describe outcomes of non-adherence in terms of maternal and fetal morbidity and mortality. A limitation of research is that it has focused upon examining non-adherence among groups of women, specifically those who have demonstrated an increased risk or predisposition for underutilized care services. Research has failed to apply a directed-content method of the health belief model as a form of identifying health promoting motivation factors among individual adherent multiparous patients. There is a need to understand patient perception as it relates to positive decision making and health behavior in the utilization of prenatal care.

The origin of the health belief model stems from identifying the relationship of factors that prompt positive health behaviors (Conner & Norman, 2001). Literature that incorporates the health belief model has applied the model as a teaching method, or as a

method in identifying susceptibility and vulnerability factors, as opposed to the primary application of understanding motivated health decision-making as it relates to positive behavior. There was an indication to apply the health belief model to gain understanding regarding maternal adherence to prenatal care as an alternate approach to the existent literature. Additionally, there was an identified need to aim research efforts at maternal patients who are adherent to care in order to identify their motivation.

Human behavior is often complex and unpredictable. Individuals have varied and changing needs. Documented research that attempts to assume groups of women with shared characteristics, traits, or circumstance will predictably behave in the same manner with regard to health decision-making, negates a holistic, patient-centered, and individualized approach. Previous attempts to understand maternal adherence have been made through a group mind-set and from a non-adherent perspective. A failure to explore and understand the phenomenon of prenatal care significance from an individual perspective threatens the ability to meet varied changing needs and address individual barriers to adherence, as reflected through persistent maternal non-adherence rates. The health belief model indicates motivation for behavior is subject to personal interpretation. A limitation of the existent literature has focused upon groups of women to identify causation for behavior that is theoretically motivated by complex individual factors.

There is an identified gap in literature regarding the personal and individual experience of multiparous women with regard to their experience in the utilization of prenatal care services. Multiparous women have experienced pregnancy, and therefore incorporate a unique historical viewpoint. In an effort to gain understanding, a directed-content approach was employed to explore the motivating factors that prompted adherent

multiparous women to initiate care-seeking behavior. Data obtained, coded, and analyzed from face to face semi-structured interviews was correlated with significant demographic variables as suggested by the literature, to provide new understanding with implications for practice change. Consideration of the perception of significance among multiparous women who initiated positive health behavior by participating in prenatal care offered insight, through emergent themes, into the phenomenon of motivation from an individual perspective.

### **Chapter Summary: Research to Address Gaps in Literature**

Prenatal care is important, affecting maternal, fetal, and delivery outcomes. Despite the importance of care, maternal adherence remains problematic. Research to identify a causation has focused upon similarities and associations. Pregnancy is an individual journey, subject to interpretation based upon history, belief, circumstance, and experience. Research has indicated that patient perception, experience, and personal interpretation guide decision making and behavior. Multigravida patients may be at a heightened risk for health compromising behaviors based upon their lived experience, history, outcomes, and perception of previous history and events (Okah & Cai, 2014).

The health belief model's origin stems from investigative research of motivation for self-care behavior (Conner & Norman, 2001). The purpose of this qualitative directed content analysis study was to explore multiparous patients' perception regarding the significance of prenatal care. Exploration, guided by the theoretical framework of the health belief model, focused upon motivation, perception of personal risk, benefit, susceptibility, severity of outcomes, and cues to action in relation to prenatal care-seeking behavior among multiparous maternal patients. Data obtained in terms of emerging

themes, related to the significance of prenatal care, adds to the body of knowledge and may provide clarity to the phenomenon of maternal non-adherence through understanding motivation for care-seeking behavior among those who are adherent to care. The goal of this research was focused upon creating opportunity for effective patient-centered practice change to ultimately improve the maternal, fetal, and delivery outcomes of pregnancy.

## **Chapter 3: Research Design Methodology**

### **Perception of Significance Regarding Prenatal Care among Multiparous Patients**

Pregnancy is a global condition. The prenatal, or pregnancy period presents as the most significant time to identify, intervene, and direct positive health outcomes for the maternal patient and her unborn baby (Massachusetts Quality Health Partners, 2011). Despite the significant positive correlation of prenatal care to outcomes, maternal adherence to prenatal care is problematic globally (Fisher et al., 2007). Literature has demonstrated a link between maternal non-adherence to prenatal care with adverse fetal conditions including low birth weight, preterm delivery, and antepartum fetal death (Almeida et al., 2007). Research targeted toward understanding maternal perception regarding care may direct practice change aimed at improved maternal adherence, with subsequent improved health outcomes.

#### **Introduction**

Literature regarding maternal non-adherence has focused upon groups of women with shared traits or circumstance to explain or predict the risk behavior of non-adherence in pregnancy. Factors influencing adherence include demographic variables of economic resource (Prathima, 2014; Ziyu et al., 2009), accessibility and geographical location (Heaman et al., 2014), mental health (Fisher et al., 2010), age (Tough et al., 2007), and social factors including culture, history, support, race, and expectation (Brighton et al., 2013; Dako-Gryeke et al., 2013; Lee et al., 2012; Okah & Cai, 2014, Prathima, 2014; Sangal et al., 2012). Research has linked women with a pre-disposing risk for non-adherence to prenatal care utilization according to shared circumstance.

Pregnancy is experienced as an individual journey, influenced by personal need, changing situations, roles, context, and life experience. Multiparous women have delivered more than one live birth, providing a context for comparison. Previous pregnancy influences care behaviors (Okah & Cai, 2014) and perception of risk (Lee et al., 2012), based upon lived experience, potentially influencing thought, expectation, and future behavior. By understanding the way multiparous patients' value prenatal care, practitioners may facilitate change to meet individual patient needs, increase utilization of care services, and ultimately improve pregnancy outcomes.

This research study was designed to aid in the understanding of the persistent, pervasive, and problematic issue of maternal nonadherence to prenatal care. It was aimed at identifying the complex individual factors that affect the utilization of care services with the applied theoretical base of the health belief model (Rosenstock et al., 1988), after an extensive review of literature indicating the need for an alternate approach to study. A semi-structured qualitative study with a directed content approach was conducted to explore maternal perceptions to understand the perceived, individual, and significant motivating factors of adherence to prenatal care. Data findings were analyzed to understand how patient care may be aimed at improved maternal care adherence.

Following IRB approval (Appendix A), the method of data collection was semi-structured face-to-face interviews of participants. A scripted introduction, followed by eight sequential questions (Appendix B) was presented to each participant. The directed content questions (Appendix B) were constructed from the theoretical framework of the health belief model (Rosenstock et al., 1988), in addition to evidence noted to be significant in terms of affecting maternal ability or decision making in the utilization of



prenatal care office visits. The same researcher conducted all of the interviews to add to the fidelity, trustworthiness, and consistency in data collection. Triangulation of sources derived from participant audiotaped and transcribed interviews, researcher observations and notes, and demographic variables were obtained from the intake survey, added to the credibility of data collection. Theory guided questions were used to support the validity of content.

### **Research Context**

The purpose of this research was to understand how adherent multiparous maternal patients perceive the value, or significance of prenatal care. The health belief model (Rosenthal et al., 1988) derives from an exploration of motivating positive health care behaviors based upon patient identified risks, benefits, and barriers to health seeking action. An understanding of illness, health risk, and cues to action are integral determinants in decision-making care behaviors, based upon perceived susceptibility and severity of illness (Conner & Norman, 2001). The purpose of exploring maternal perception regarding the significance of prenatal care of adherent maternal patients was to add knowledge to the field of research, and to identify thematic motivating factors that positively influence health care decision-making aimed at patient-centered care in nursing practice.

The setting for the research took place at an obstetrical office located in the western region of upstate New York. Patients seeking obstetrical care in the metropolitan site represent a diverse population with regard to age, ethnicity, income, education, background, culture, and support. Approximately 80% of the maternal patients have a form of structured government financial assistance such as Medicaid, or a Medicaid product. Approximately 5 to 10% have private insurance with a supplemental form of

Medicaid. The remainder present with private insurance, self-pay, or have no insurance coverage. The recently renovated office is fully staffed and offers an interdisciplinary approach to care. It is equipped to provide non-stress tests (NSTs), procedures, minor surgeries, and ultrasounds. There is a new ultrasound machine, capable of level-two scanning. An experienced full-time licensed ultrasound technician is part of the interdisciplinary team. There are several patient treatment rooms, a spacious waiting room for patients with a play area for children, a business office, telephone triage, and consultation rooms. There is adequate space to serve the large population base. The office is handicapped accessible, and is centrally located within a 300 yard distance to the delivering hospital.

The research office has an experienced practitioner team, offering fulltime health and medical coverage of maternal issues and services. The members of the healthcare team have extensive experience and expertise in identifying and meeting complex health and social challenges. The practice staff is adept at making referrals as indicated, based upon identified needs of risk and lack of resource. Office employees are able to assist pregnant women who present without insurance coverage, or who have financial hardship or limited resource. All patients are treated equally and with respect. The medical director and professional staff maintain patient confidentiality, safeguarding patient information. The owner of the practice and medical director provided written consent for the study to take place in his office (Appendix C).

### **Research Participants**

Patients who present for obstetrical care at the research site are of diverse races and cultures with varied backgrounds, needs, resources, socioeconomic and health risks. After

IRB approval was obtained (Appendix A), the population sample was chosen for this study from those presenting for their initial intake visit. A purposeful sampling was obtained from eligible patients meeting criteria for inclusion. To strengthen validity, inclusion criteria was limited to multiparous patients over the age of 18, English speaking, and in first trimester of pregnancy, who had given birth to more than one live infant. First trimester dating of pregnancy was determined by either the patients' reported first day of last menstrual period using Nagle's Rule, or by ultrasound confirmation of expected date of confinement. Exclusions narrowed the focus to the targeted population of adherent multiparous patients in first trimester in order to gain the desired information without confounding variables that had the potential to influence maternal decision-making, or affect participation based upon previous outcomes. Exclusion criteria included inpatient psychiatric patients, incarcerated patients, and those who had fetal demise, missed or spontaneous abortion, neonatal death, or infants with congenital anomalies.

All patients who met the criteria of inclusion were given a handout (Appendix D) with a verbal explanation to describe the purpose of the study. The participants were told how their information would be collected, used, and safeguarded. Data was safeguarded and kept under lock and key, and will continue to be secured and maintained for a period extending no longer than 3 years from collection. The participants were told that they may refuse to participate and/or withdraw at any time without any consequence, and that practitioners were blinded as to patient participation. Potential interviewees were assured that they incurred no direct risk or benefit from participation, their baby would not be affected, and that their participation would not affect their pregnancy, care, or treatment.

Participants who met the inclusion criteria and consented to participation were

asked to sign the handout (Appendix E). Participants were given a copy for their records, with information if they need or desire to contact the researcher with questions, concerns, or to obtain a copy of the research findings. Participants were told that if during the process of the interview they experienced any memories or issues that caused them to be anxious or upset, or if they expressed or exhibited the need for care or referrals, the interview would be stopped at that point to meet their health care needs. Upholding patient care needs was maintained as the highest priority throughout the interview process. Eligible participants who met inclusion criteria and agreed to participate were recruited into the study until the data was saturated in terms of meaningful findings.

### **Instruments Used in Data Collection**

A semi-structured qualitative study utilizing a directed content approach was employed to explore the perceptions of significance regarding prenatal care among multiparous women. Consenting participants who met inclusion criteria were selected for the sample in the order that they presented for their initial prenatal care visit. They were given a handout and verbal explanation regarding the purpose of the research, how collected information was to be used, and assured confidentiality (Appendix D). Patients who agreed to participate were asked to sign a consent (Appendix E). All were assured that their participation was voluntary, their name would not appear in any form, and that their individual information would not be published. All data was published in aggregate form. Patients were aware that they were able to withdraw consent at any time, and that practitioners would be blinded to patient participation. All were reassured that their consent and/or refusal would not have any effect upon their care, treatment, or outcomes. The participants were informed that they may be contacted by the researcher at a later date if

further clarification is indicated. Participants were given a \$20 gift certificate to a local grocery store to compensate them for their time.

Ten face-to-face interviews took place in a confidential area within the obstetrical office. The interview room was comfortable, quiet, and free of distractions. There was a play area for patients with small children, and there was adequate seating if the patient was accompanied by a partner or supportive individuals. Site permission for research was granted by the medical director and owner of the practice (Appendix C). A scripted introduction (Appendix E) was read to each participant, followed by eight sequential questions (Appendix B). The questions, derived from research with the health belief model as a guided form of exploration, were posed to consenting participants who met inclusion for audiotaped, face-to-face interviews. The interviews lasted less than 30-45 minutes each per the approved IRB proposal. Prior to the questions a scripted introduction (Appendix F) was read. After the interview, the researcher read a scripted closing (Appendix G).

Data was collected from researcher notes, observations, and audiotaped interviews. Audiotaped transcripts were transcribed verbatim. Demographic information to reference with interview and observational data was obtained and collected from the patient history survey on the patient record. Demographic information was collected based upon variables shown to influence prenatal care, including highest level of education completed, employment status, gravida/para, age, race, insurance, and whether or not they felt they had adequate social, financial, and transport support. Collected information was listed by participant number, and did not contain any directly identifiable information.

Questions derived from theory and research ensured validity regarding subject matter. The same researcher conducted all interviews at the same site, with the same eight

questions posed in the same order for fidelity and credibility. The same professional registered nurse interviewer collected the data from all participants. The same researcher, with over 30 years of nursing practice and 10 years of prenatal care intake experience at the large, diverse, interdisciplinary, state-of-the-art facility, located in a metropolitan area of upstate New York, collected all of the data from the 10 participants. The researcher has both the expertise and authority to make appropriate referrals if information, issues, or concerns regarding patient safety, health, or well-being arose during the interview process. The researcher had been granted access to patient data, and is responsible to uphold patient confidentiality. The researcher successfully completed the online National Institutes of Health (NIH) Protection of Human Subjects, and signed a confidentiality clause with the participating office as a condition of employment.

Disposition of data in the form of audiotaped interviews and transcripts will be kept for a period not to exceed 3 years from the collection date. Patient information was numbered to assure confidentiality, with identifiers removed. Data was only published in the aggregate. Data will continue to be secured under lock and key for up to 3 years. After 3 years, collected data will be destroyed. This research was being conducted in partial fulfillment of the requirements for the Education Doctorate Program in Executive Leadership, Ralph C. Wilson, Jr. School of Education at St. John Fisher College. The findings of the research will be disseminated through publication to be shared among practitioners, the medical director of the practice study site, nursing colleagues, and will be available to the St. John Fisher College scholarly community. Findings of the study will be made available to participants upon their request.

## **Data Analysis**

Data obtained from the interviews was transcribed verbatim and charted according to question number and participant number. Transcribed data was analyzed for units of meaning. Inter-rater reliability by an experienced qualitative researcher was confirmed separately through comparison, adding to credibility and auditability of findings. Data was further analyzed and sorted in a matrix of the numbered questions & participant numbers with highlighted priori codes, units of meaning, and measurement, and a column for field notes and emerging findings of potential noteworthiness or significance. Priori codes were again analyzed as focused codes emerged and were noted in the chart. A matrix of grouped themes was constructed from the focused codes. Continued data review was made through clustering, grouping, and labeling the codes in a charted format. Data was analyzed using Atlas Ti7© software. Data was coded a minimum of three times for key words, and again for emerging themes. Thematic information was further analyzed with demographic variables to search for patterns and meaningful associations, adding to the context of understanding. A chart was constructed to indicate demographic variables by participant number.

The research process took several months to analyze, and to fully delve into the findings, which were later compared through descriptive words and phrases to the literature and theory to explore how the findings aligned with research and theoretical foundations of the health belief model (Rosenstock et al., 1988). Analytical notations were made, and inter-rater coding was again initiated to assure accuracy of the coding process, field notes, focused codes, demographic charting, phrases, and emerging themes.

## Summary

Maternal non-adherence to prenatal care is problematic and pervasive, and has been shown to impact maternal, fetal, and delivery outcomes. Research has demonstrated the causation of maternal non-adherence, whether by choice or circumstance, to be complex. Evidence has correlated groups of women, based upon shared health-influencing factors, to be at an increased risk for non-adherence. Pregnancy is experienced individually, based upon expectation and understanding within the context of culture, knowledge, social factors, and previously-lived history.

The health belief model (HBM) addresses motivation for positive health-promoting behavior based upon individual perception of risk and susceptibility of health-threat (Rosenstock et al., 1988). Understanding the individual experience of pregnancy, the motivation for adhering to prenatal care, and health-promoting factors that positively influence a maternal patient's action to participate in care, offers understanding and consideration with regard to the way in which care is provided. The method selected to extract meaningful individual data was qualitative, semi-structured, face-to-face interviews of multiparous patients in a large diverse obstetrical practice. The HBM was utilized as a theoretical base for eight scripted questions. Data obtained was coded and grouped in the form of thematic findings to gain understanding and generate new knowledge of the individual maternal experience. Focusing upon maternal needs as a foundation to providing patient-centered prenatal care was central to improved practice aimed at facilitating optimal patient outcomes.

Prenatal care, or care delivered during the pregnancy period, is integral to promoting optimal maternal, fetal, and delivery outcomes (Almeida et al., 2007; Ziyο et



al., 2009). Despite the benefit of prenatal care, maternal non-adherence is persistent, pervasive, and problematic (Fisher et al., 2010; Tough et al., 2007). Research has probed causation for maternal non-adherence by grouping women with shared traits or circumstance, in order to identify risk factors explain or predict the behavior of non-adherence. Pregnancy is an individual occurrence, subject to influencing factors that are interpreted and experienced by each woman differently within the context of meaning and life experience.

Multiparous women, or women who have delivered more than one live birth, have a comparison for expectation based upon having a lived experience. Research indicates that multiparous women are more likely to engage in health compromising behavior, including nonadherence, with subsequent pregnancies regardless of previous outcomes (Okah & Cai, 2014). Additionally, Lee et al. (2012) demonstrated that maternal patients have an inability to accurately identify risk perception in pregnancy. According to the health belief model, risk perception, illness severity, and susceptibility are integral determinants to motivating health care seeking behaviors (Rosenstock et al., 1988). The health belief model was derived from research aimed at investigating positive health action. Understanding the motivating factors for maternal patients to adhere to prenatal care, may guide practitioners to understand ways to facilitate patient-centered practice that meets patient needs.

The purpose of this study was to identify maternal perception of significance regarding prenatal care among adherent multiparous patients. Collecting data of adherent patients allowed for the understanding how the individual experience of prenatal care is appreciated through a maternal lens, within the context of a lived experience. Findings of

this research will add to the existent body of knowledge, and facilitates the consideration of exploration for practice change aimed at meeting patient needs and improving adherence rates. The ultimate goal is to promote healthy maternal, fetal, and delivery outcomes.

## **Chapter 4: Results**

### **Research Question**

This semi-structured qualitative research study was aimed at identifying perceptions of significance regarding prenatal care among multiparous women. Ten women in the first trimester of pregnancy participated in one-to-one interviews. Eight questions, derived from a theoretical base of the health belief model (HBM), were directed to maternal participants who met the inclusion criteria in the same order as they presented for their routine, scheduled, prenatal care visits. Inclusion criteria was limited to women who were pregnant in first trimester, over 18 years of age, English speaking, and multiparous. Exclusion criteria of the study was limited to women who had a history of spontaneous or missed abortion, those who had a stillborn delivery history, and those who were incarcerated or inpatient psychiatric patients at the time of the office encounter.

The interviews took place over a period of eleven weeks. The office averages more than 50 new pregnancy patients each month. A period of eleven weeks was required to gather data for this study in order to recruit 10 patients who met inclusion criteria, and who did not have a history of a spontaneous or missed abortion. The interview questions were aimed at identifying maternal perception with regard to the significance of prenatal care, identified risk perception, identified need for prenatal care, and previous prenatal care experience. All of the women who met the criteria for inclusion were asked to participate, and all who were asked to participate agreed with expressed, verbal, and written consent. The same interviewer provided each participant with a handout

(Appendix E), and explained the purpose of the study. A scripted introduction, and a scripted closing statement were used in the interview process. The maternal responses to eight sequential questions regarding prenatal care perception were audiotaped and transcribed verbatim for analysis. Demographic information was obtained from patient-reported charted data (Table 4.1).

Table 4.1

*Demographic Data*

<u>n=</u>	<u>Age</u>	<u>Gravida/ Para</u>	<u>Education</u>	<u>Employed</u>	<u>Insurance</u>	<u>Race</u>	<u>Support</u>	<u>Marital Status</u>
10			Grade Level (G) Associates (A) Bachelors (B) Masters (M) Doctoral (D) Other (O)	Yes (Y) No (N)	Medicaid or Fidelis (Medicaid Product) (M) Private (P) Self-Pay (SP) None (N) Other (O)	Black (B) Caucasian (C) Hispanic (H) Asian (A) Native American (NA) Other (O)	Adequate Resource (self- reported)  Social (S) Transport (T) Financial (F)	Married (M) Single (S) Divorced (D) Separated (SP) Legally Separated (LS)
1	20	4/3	(G) 11	Y	(M)	C	S, T, F	S
2	30	6/5	(G) 12	Y	(M)	C	S, T, F	LS
3	28	3/2	(A)	Y	(P)	C	S, T, F	M
4	31	3/2	(B)	N	(P)	C	S, T, F	M
5	33	5/4	(M)	N	(P)	C	S, T, F	M
6	31	5/4	(G) 12	N	(M)	C	S, T, F	S
7	27	4/3	(G) 12	N	(P)	C	S, T, F	M
8	21	3/2	(G) 11	Y	(M)	C	S, T, F	S
9	26	3/2	(G) 12	Y	(M)	C	S, T, F	S
10	29	3/2	(G) 12 (O) Post Vocational	Y	(M)	C	S, T, F	D

All of the participants were below the age of 35. Advanced maternal age was not an identified variable in the findings. All participants reported completion of eleventh grade; four of the 10 had post high school education. One had vocational training beyond

high school. One participant had an associate's degree, one had a bachelor's degree, and one had a master's degree. Six of the 10 were employed, though the majority who were employed, either full or part time, reported that they worked at minimum wage jobs. Those who had Medicaid or a Medicaid product for their insurance coverage met the financial need of eligibility for state financial assistance, placing them at, or close to, poverty levels. Those with the highest levels of education were not employed at the time of the interview, and those with post-high school college education reported being legally married. Four of the participants were married, four were single, one was divorced, and one was legally separated. All who were married had private insurance.

All participants reported to have active health insurance, though the predominant insurance was either Medicaid or a Medicaid product (Fidelis). Those with the highest levels of education reported having private insurance carriers. All participants meeting criteria were self-described Caucasian. All of the participants reported adequate resources in the three areas of transportation, financial, and social support. The participants defined adequate resources as having needs met, without requiring additional support or services.

Interviews took place either before initial intake visits, while patients were waiting to be seen by practitioners, or in the period of time between their ultrasound and practitioner visit. All interviews took place in private patient rooms. The participants were deliberate and thoughtful in their responses. No identified distractions or issues were incurred during the interview process. Some of the participants were more engaged, while others were reserved in their responses. Each participant completed the entire interview, answered all eight questions, and all received a twenty-dollar gift certificate to

a local grocery store in exchange for their consideration and time. All who met inclusion criteria agreed to the interview; no one declined participation in the study.

### **Data Analysis and Findings**

The transcribed dialogue was analyzed using Atlas Ti7 © to identify, track, count, and to link code units. Inter-rater reliability for initial coding of data was supported by an experienced qualitative-content researcher to ensure quality checks for credibility, to ensure trustworthiness, and to ensure that data analysis aligned with auditability. The data was graphed and charted according to priori and focused codes, and then placed in a matrix of grouped and linked unit codes according to frequency by question. Data was further analyzed in a matrix of grouped themes. Data was clustered, grouped, and labeled according to frequency count. It was then ranked according to theoretical themes and unit frequency.

Five emergent themes were identified in the analysis of the data, with one overarching theme. Themes were ranked and placed into the health belief model framework to identify relationships, and to compare the findings as they correlated with the theoretical structure of risk perception, susceptibility, and cues to action. Emergent themes were analyzed within the context of theory and relevant literature, for identified similarities and differences. Unit codes were counted and charted in a numerical format of percentages based upon the frequency as they appeared in participant transcripts to demonstrate the significance of the codes, to align with the theory (HBM), and to validate the way in which they supported the identification of themes and findings (Table 4.2).

Table 4.2

*Ranked Theoretical Themes by Frequency Unit Count*

Theoretical Themed Category: 5 Themes (Total Unit Count 431 =100%)	Most Frequent Unit(s)	Total
Theme 1 (Total Unit Count by Frequency 181 = 42%)		
Individual Perception of Needs Related to Previous Experience and Expectation as a Motivating Factor for Adherence Benefit	Me, my	60
	Know	42
	Feel	12
	Valuable, important	12
	Need	8
	Expectation	4
	Previous	3
Theme 2 (Total Unit Count by Frequency 119 = 27.6 %)		
Positive Adherence Motivation: Assurance, Reassurance Benefit, Perception of Individual Risk, Cue to Action	Baby, child	50
	Sure, make sure, check	33
	Healthy	15
	Size, measure, grow	8
	Test, ultrasound	7
	Heartbeat	3
	Assure	1
	Share	1
Theme 3 (Total Unit Count by Frequency 67 = 15.5 %)		
Provider and Office Interaction, Information as Motivating Factors Knowledge, Perception of Individual Risk, Susceptibility	Care	26
	Doctor	12
	Question	6
	Appointment	5
	Information	4
	Help	4
	Advice	3
	Talk	3
	Trust	2
	Relationship	2
Theme 4 (Total Unit Count by Frequency 37 = 8.6%)		
Individual Self-Directed Health Behaviors Benefits of Behavior Change, Barriers to Change	Eat	15
	Vitamin	6
	Exercise	5
	Stress	4
	Rest	3
	Reschedule	2
	Change	2
Theme 5 (Total Unit Count by Frequency 27 = 6.3%)		
Negative Motivation for Adherence: Fear, Concern, Poor Outcome(s) Perceived Severity of Outcomes, Risk, Susceptibility, Cue to Action	Risk	12
	Problem	9
	Complication	3
	Something wrong	3

## **Overarching Theme: Maternal Fetal (M-F) Attachment**

The overarching theme of pre-existing maternal fetal (M-F) attachment was identified as a finding among all of the participants of the study. M-F attachment was noted in terms of how it related to each of the five emergent themes, and as a motivating factor in decision-making and positive self-directed behaviors, including adherence to prenatal care. The significance of care expressed among the participants aligned with the HBM in terms of motivation and behavior. Emergent themes included personal need and benefit related to previous experience and expectation, reassurance of maternal and fetal health, patient provider relationship or interaction, adherence as a positive self-directed care behavior, and the fear or concern of unidentified health risk to mother or child. The themes were correlated with motivating behavior. They were noted to be interrelated, aligned to the HBM, and linked to the overarching theme of M-F attachment.

The participants identified the significance of prenatal care in different ways. Information, knowledge, self-care behaviors, early identified threats, reassurance of health and well-being, and provider interaction were thematic findings expressed in terms of prenatal care adherence benefits. M-F attachment was found to be a motivating factor for health promotion, and was strengthened by adherence, according to participants' statements. One participant described her perceived need for prenatal care by saying "I just want to make sure that I come to every single one of them [prenatal care visits], and to get everything that we [the baby and I] need correctly . . . I've been here before, and everything was really good!" (Participant 6, interview 6, page 7, line 375).

### **Theme 1: Individual Perception of Benefit and Need for Care**

The theme of individual perception of benefit, and the defined need for care



related to previous experience and expectation, was found to be the highest ranking category for the health-seeking behavior of maternal adherence, comprising 42% of the five themes by total unit code frequency. The participant data indicated that personal meaning was attached to the perceived need for visits, which motivated participation, inclusion in decision making, utilization of care resources, and continued adherence. The significance or value of the care experience was found to be defined individually, and was derived from the patients' ability to understand how their own distinct and varied needs were met throughout their pregnancy. The words *me* and *my* were used most frequently, along with accounts of previous experience as a comparison for anticipated care and expectation. One participant described her perceived benefit of care by saying, "It's gonna [sic] help me and my child through the pregnancy part . . . I can get a lot of advice on how to get rid of morning sickness . . . it [prenatal care] helps me along my pregnancy" (Participant 8, interview 8, page 13, line 470).

The codes *need*, *feel*, *value*, *important*, and *know* were used in patient descriptive responses to their individual desire to seek care, and as a recognized care benefit. The perceived value of care was demonstrated as an intrinsic need. As one participant stated, "I have quite a bit of value in them now. I think they are essential in making sure the baby is okay, and the baby is healthy. I'd rather come than not come, you know?" (Participant 3, interview 3, page 6, line 187). Previous care experiences influenced the patient level of anticipated care, but also contributed to the level of patient knowledge regarding expected changes in pregnancy. Another participant described her previous experience by stating, "I feel like I've had really good prenatal care in previous pregnancies, and so my level of expectation is higher because I've had good care in the

past” (Participant 5, interview 5, page 9, line 326).

All participants indicated prenatal care met their needs as a bonding experience, viewing the baby as an essential part of themselves. Adherence was indicated to be an opportunity to validate that bond. A participant emphasized the maternal-fetal bond by stating, “Prenatal care . . . basically it means to me, like to check on *my* child. [it’s] like some . . . like an important piece of *me*. Like basically that’s what that [prenatal care] means to me” (Participant 1, interview 1, page 1, line 5).

## **Theme 2: Assurance of Maternal and Fetal Health**

The next theme of motivating factors identified in maternal adherence was recognized to be derived from the assurance, or reassurance, that participants received in verifying the health status of their baby and themselves. This theme was noted to comprise 27.6 % of the five themes, and was mostly expressed in terms of the baby or child using words like *make sure*, *check*, and *be sure*. Other words like *healthy*, *measure*, *grow*, *size*, *testing ultrasound*, *confirmation*, *heartbeat*, and *assure* were used to describe participant perceived prenatal care indicators of reassurance of fetal health status, and their own level of pregnancy health. One participant described the benefit of prenatal care visit reassurance in terms of fetal activity stating, “They make sure the baby and I are healthy . . . check on me and the baby . . . make sure the baby is still kicking in there!” (Participant 9, interview 9, page 15, line 552).

Adding to the bonding experience, seven of the 10 patients described visits in terms of updates, with comparison to expected growth and fetal development. The ability to receive reassurance, theoretically shaped and potentially altered patient perception of individual risk and susceptibility for adverse outcomes. A participant described the

importance of visits by stating, “They give me an update on how well the baby is doing, and how it’s growing in there. I like prenatal visits. They let me be able to just know where I’m at” (Participant 3, interview 3, page 5, line 149).

### **Theme 3: Provider Interaction**

The third emergent theme for seeking prenatal care was provider interaction as a motivation, and as an opportunity for increased understanding. This theme represented 15.5% of the five themed responses by unit frequency. It included the patient provider relationship with codes such as *care, doctor, question, appointment, information, help, advice, talk, trust, relationship, and share*. The responses reflected an appreciation for the relationship the patient has with her provider(s) for identified needed services, beyond the patient’s own capacity. Interaction with the office staff and providers facilitated an opportunity to seek advice, ask questions, and to gain information to direct self-care behavior. One participant described the opportunity to interact with her provider by stating, “Just being able to get information you need . . . just talk to the nurse and make sure that everything is going as it should be” (Participant 10, interview 10, page 16, line 592). Patients noted that the visits provided an opportunity for guided direction and advice, with the ability to ask questions about care and health promoting behaviors.

The level of trust the patients felt in the provider relationship added to a sense of increased knowledge and reassurance. Interaction with the provider was valued in the way it facilitated understanding of health and well-being. Dialogue with the provider to increase the awareness of potential outcomes was described by one participant in terms of having the opportunity to have questions answered honestly within a relationship of trust.

When I have questions, they get answered. I'm not afraid to ask anything . . . if something . . . if I feel like something is wrong or anything like that, I can ask you guys [referring to her providers] and get a straight answer. So it seems I don't really have any worries or anything (Participant 8, interview 8, page 14, line 504).

Prenatal care is an opportunity to receive professional attention. Seven of the 10 participants noted that prenatal care provided service and skill, or care beyond self-capability. Ultrasound services, abdominal measurements, and/or auscultation of fetal heartbeat were noted to be valued prenatal care services in understanding and confirming fetal growth and development in all 10 participants' statements. One participant described the benefit of provider interaction of prenatal care services by describing them as a way of assessing her baby's health. "Getting to see the baby, making sure it's healthy . . . you know it's not like there's like a little looking glass in there where you can check on it on your own!" (Participant 7, interview 7, page 11, line 395).

The ability to gain information, guidance and support, and/ or to experience inclusion as a partner in care was noted to be significant among all 10 of the participants sampled. Three of the 10 participants had changed practices due to dissatisfaction with the relationship with their previous providers. The theme of reassurance and provider interaction as a positive motivation for continued care-seeking behavior was described by one participant in terms of trust.

I guess I want to know that the baby's okay, and that I'm doing alright, and that there's no complications . . . I want to have good, familiar relationships with the doctors . . . and feel at ease going into it . . . you know, just trust I guess, just

building the trust relationship with the practice (Participant 4, interview 4, page 7, line 136).

While different terms were used to describe the patient provider interaction, eight of the 10 respondents described the interaction with their provider with the words listening, being heard, and/ or feeling valued. Being able to engage in dialogue that specifically met their individual needs was expressed in terms of sharing information, and feeling secure in asking questions. Patients described the interactive experience in different ways, according to how their needs were met, and how they interacted with the provider. One participant described the interaction with the provider by stating “The openness . . . and the value they place on what a woman can do with her body, and being able to work with us. I appreciate that . . . absolutely” (Participant 4, interview 4, page 8, line 263).

Three of the 10 participants who perceived that their needs were not being met with their previous providers opted to change practices, and to seek out interaction opportunities of care and services with a different providers’ office, rather than to miss visits. This concept incorporated thematic findings, indicating individual perception of needs, individual behaviors to direct self-care, and an interactive provider relationship as adherence-motivating factors. One participant described her decision to change practices.

With my first child, I didn’t like the doctor that I had so much. The last pregnancy that I just had, the office was . . . amazing! It was . . . I loved it! But then they changed doctors. The doctor from my first pregnancy went to the doctor’s office I was going to before . . . My sister-in-law comes here, so I thought I would try it and see how it goes. I like it so far (Participant 8, interview 8, page 13, line 495).

All ten participants interviewed in this study noted that they depended upon their provider to help them in identifying their needs, risks, susceptibility, and decision-making. As all patients present with individual needs and abilities to learn, provider interaction in prenatal care visits was demonstrated to be an essential component to effectively directing health-promoting behavior.

#### **Theme 4: Self-Directed Behavior**

Individual behaviors and actions were recognized in the need for care among all of the participants. Adherence as a self-directed behavior emerged as the fourth theme of coding. It comprised 8.6% of the five themes by unit code frequency. Individual self-directed care behaviors such as *eating well*, *taking a prenatal vitamin*, *exercising*, *getting rest*, and *managing stress* were listed among the top reported coded behaviors among the women interviewed. Though prenatal care visits were not mentioned as a specific aspect of self-care behavior, 30% of the women interviewed noted that the advice and guidance they receive at prenatal care visits was recognized to be an important aspect of care, and a benefit of adherence. A recognized link between self-care behaviors and desired positive outcomes was noted to be significant among all of the participants.

But just knowing, you know, that at the end of your pregnancy, if you deliver a healthy baby, that's the most important, so staying on top of you know . . . taking care of my own body so the baby is okay (Participant 4, interview 4, page 7, line 246).

Self-directed behavior was noted to influence pregnancy outcomes in all of the respondents. One participant described this behavior as “Making sure that you’re doing everything during pregnancy so that the baby is healthy” (Participant 2, interview 2, page

3, line 1). Additionally, self-directed behavior was noted to be an indication of bonding by recognizing the relationship between the maternal patient and her child, and as a benefit of gained knowledge from previous experience. The link between maternal behaviors and pregnancy outcomes was noted to be an indicator of self-directed behavior and as a benefit in health promotion among all of the participants interviewed.

As far as the baby, I've always taken my prenats . . . I've always been told they're important . . . they haven't failed me yet . . . I try to exercise a bit more just because it makes my body better, so then of course it's obviously better for the baby (Participant 3, interview 3, page 5, line 155).

Rescheduling missed visits as a self-directed care behavior in health promotion was verbalized by 40% of the women interviewed. Thirty percent noted that they would not experience a negative outcome from missed visits, as they would reschedule the visit. Rescheduling a missed visit was described as a self-directed behavior in response to a recognized need for care. "I try to reschedule because *I* want to be able to check on the baby, you know?" (Participant 3, interview 3, page 5, line 174).

### **Theme 5: Fear or Concern of Unknown Outcomes**

The final theme identified in the data analysis process indicated that negative factors, such as fear or concern, influence maternal decision-making as a motivating behavior in adherence to prenatal care. The fear of negative outcomes as a motivating factor comprised 6.3 % of the five emergent themes by unit code frequency. Negative factors were identified as potential barriers to healthy maternal and fetal outcomes. They included *fear of risk, health threats, problems or complications, unknown* occurrences of *what might go wrong*, and/or an inability to *manage stress*. The ability to confirm

maternal patient and fetal health, in terms of growth and development metrics, was stated as a reassuring benefit of prenatal care by all 10 participants. Conversely, missed visits, with an inability to confirm health and well-being, was identified as a negative factor in terms of fear or concern, with the risk of poor or unknown outcomes among six of the participants interviewed.

Missed office information, missed opportunity for testing or services, and a concern for unidentified problems or complications, was noted to be a risk of nonadherence in 60% of the research participants. Thirty percent of the participants noted that missed visits would result in a lack of reassurance. One participant linked missed visits with the occurrence of a complication, indicating that the baby could incur a health risk if she did not adhere to care or missed a scheduled visit. “Something could happen to the baby if I didn’t get regular care for it” (Participant 6, interview 6, page 10, line 367). The fear of not knowing that something could be wrong with either the patient or her unborn baby was stated as a motivating factor for adherent behavior.

Something might be wrong with the baby, and I don’t know about it . . . I might miss it if I miss an appointment. It’s very important to me to make sure that I go to every prenatal care visit that I need to, to make sure that everything is going normal like it needs to (Participant 8, interview 8, page 13, line 490).

The elements of the HBM include patient perceived susceptibility, the potential severity of outcome(s) if a positive health change is not initiated, and the potential perceived threat to health. Applying the HBM to this study, participants would need to perceive a health threat or risk, and appreciate their susceptibility to adverse outcomes, in order to implement a behavior change such as adherence to prenatal care. The modifying



variables that influenced the perception of risk, and subsequently provided a cue to action, were based upon the established M-F attachment. The ability for the maternal patient to establish an attachment or bond with her unborn child, theoretically provided the needed cue to action, prompting the behavior of adherence. Additionally, the perceived benefit of positive maternal and fetal outcomes outweighed the barriers that would have prevented the participants of this study from seeking care.

The overarching theme of M-F attachment was noted to be present among all of the participants of this study. The five themes were related, and often overlapping. For instance, the individual perception of needs (theme 1), included the reassurance of health (theme 2), as an individualized benefit. Individual needs (theme 1) was noted to include the provider relationship or interaction with the office (theme 3). As the provider relationship often created an opportunity for reassurance of health, it met individual needs, connecting theme 3 with theme 1. Additionally, self-directed care as a motivating factor (theme 4), was related to the identification of individual needs (theme 1) and was likewise supported by the information patients received within the context of provider interaction (theme 3). The fear of unknown outcomes (theme 5) was addressed in the behavior of adherence as a self-directed behavior (theme 4), and was directed or focused upon the health information patients were able to gather from their provider during prenatal care visits (theme 3). There was a relationship among the themes, linking them to one another, and also to the HBM theory. The codes and themes were placed, within the context of the HBM constructs, into a model with M-F attachment as an overarching theme (Figure 4.1).

← Maternal-Fetal (M-F) Attachment →



Figure 4.1. Health Belief Model with Themes and Codes. Overarching theme of M-F Attachment.

## Summary of Results

This research sought to identify the perceived significance or value of prenatal care among adherent multiparous women, within the HBM theoretical framework, in an effort to understand how adherent maternal behavior is motivated. There were five emergent themes identified, with an overarching theme of maternal-fetal (M-F) attachment. An in-depth analysis of findings indicated that while pregnancy is an individual experience, each adherent multiparous woman in this study had established and formed a M-F attachment with her unborn child, motivating her perceived need for care in alignment with the health belief model (HBM) of health behavior.

An overarching theme of M-F attachment was evidenced among all of the participants interviewed. The themes identified through individual interviews were found to correlate to the thematic framework of behavior motivation based upon risk, perception, susceptibility, outcomes, benefits, and barriers. The first theme was identified as personal need. Women identified prenatal care in terms of how their individual needs were perceived and met. This was, in part, defined by their previous experience and expectation. The words *me* and *my* were used most frequently, and by all of the participants, within the context of describing care for themselves and/or their unborn child. This theme relates to the perception of need as a motivating factor in the HBM.

The second theme of this study was identified as the reassurance of maternal and fetal health and well-being as both a motivator, and as a benefit, of adherent behavior. This theme aligns with the theoretical concept of risk perception and susceptibility. M-F attachment served to be a motivating cue to action in prompting the women in this study to seek care in order to gain the reassurance that they may receive at care visits. The need

for reassurance guided decision making. Reassurance, as a benefit of care, theoretically facilitated the ability to gauge risk and susceptibility according to the HBM.

The third emergent theme was based upon the patient-provider interaction as a motivating factor in adherent behavior. This theme aligns with the HBM in that knowledge, advice, and provider interaction and direction provided the ability for patients to understand their level of risk and susceptibility. According to the HBM, risk perception, susceptibility, and knowledge regarding outcomes is a motivating factor in seeking positive health promoting behaviors, including adherence to care. In the absence of an effective provider interaction that met their perceived need for care, 30% of the participants in this study had elected to seek a different practice, rather than to continue with their provider, or to be non-adherent. This theme illustrates the inter-connectedness between the themes of individual need and self-directed care as motivating factors of adherence.

The fourth identified theme indicated that self-directed care behavior was linked to the perceived value of care, in terms of the benefits gained. Adherence was a demonstration of self-directed care, but it also created an opportunity to obtain information, receive direction, prenatal vitamins, and to identify health-promoting behaviors to improve outcomes. This theme aligns with the HBM in that the behavior of self-directed care was motivated by the understanding of how that behavior impacted outcomes. In response to perceived susceptibility, the women who participated in this study directed their behavior to facilitate health promotion. M-F attachment served as a cue to action for patients to seek care, and to engage in self-care behaviors to promote health, such as scheduling and keeping prenatal care visits. This theme is linked with the

themes of identifying personal need, gaining reassurance, and provider interaction.

The fifth and final theme was noted to link maternal fear, or concern of unknown outcomes, with nonadherence to care. The fear of adverse outcomes, or the unknown consequence of nonadherence, was a motivating cue to action for adherent behavior in 60% of the participants. This aligns with the HBM in that the perception of risk, severity, and susceptibility motivates behavior. Additionally, the benefit of having a healthy outcome was perceived to be greater in terms of a perceived benefit, than the perceived barrier(s) to care in all 10 participants. This was further demonstrated in the research study as it related to the overarching theme of M-F attachment, in recognizing the potential effect on outcomes of the participants' behavior on the unborn child.

Findings indicated that the multiparous women interviewed valued prenatal care, and appreciated the significance of care in terms of how it met, and continues to meet, their individual needs. Prenatal care provided an opportunity for understanding, and also to implement self-directed care behaviors to promote health. This concept illustrates the cyclic nature of adherence in promoting healthy outcomes. Adherence provides an opportunity for self-directed health promoting behavior, while also being a measurable demonstration of a self-directed health promoting behavior. The perception of significance regarding prenatal care was defined within the context of the theoretical framework of the HBM. Themes aligned with theory, and demonstrated a level of maternal engagement in prenatal care, evidenced within the theme of M-F attachment.

## **Chapter 5: Discussion**

### **Introduction**

Prenatal care is important, affecting maternal, fetal, and delivery outcomes. Maternal adherence to prenatal care is problematic, pervasive, and persistent globally. Research aimed at identifying and exploring maternal nonadherence has focused upon shared traits or commonalities among women to identify causation and predisposing risk. Pregnancy, with the need for care, is an individual journey. It is lived by each woman differently. Maternal decision, choice, or ability to adhere to care is influenced by varied factors including perception of needs and benefits, changing life events, social and ethnic considerations, identified culture, ability, previous lived experience, context, and history. This study was aimed at identifying the individual perceptions of multiparous women regarding prenatal care, and to identify the motivating factors of adherent behavior.

To strengthen the validity of findings, and to analyze the data in a meaningful way, participant demographic information was collected and compiled (Table 4.1). Sample population demographic variables, demonstrating an ability to influence outcomes, were analyzed and compared with published statistical data from the city and the county where the research took place. Additional comparisons of health indicators were made between the nation, state, and county with regard to prenatal care adherence, low birthweights, and mortality rates. This information was further analyzed for meaningful comparison to facilitate contextual understanding.

According to the United States Census Bureau (2015), the level of high school educated residents in county in this study was 89.4% compared with 82.9% in the city. Those with a bachelor's degree in the county ranked 22.9%, while 14.1% of city residents have a bachelor's degree (United States Census Bureau, 2015). The percentage of county residents who reported their race to be "White Alone" was 88.5%, and 8.5% reported that they did not have health insurance (United States Census Bureau, 2015). Marital status statistics for women rank at 52%, while the labor force for women in the county (over the age of 16) was 57.3%, which was slightly lower when compared to 57.9% of the total population of county residents (male and female) employed over the age of 16; the poverty rate for the county was reported at 18.2% (United States Census Bureau, 2015).

These findings, when compared with the demographics of the study participants, indicated that the sample population of this study did not statistically represent the residents in the overall county and state. All (100%) of the study participants who met inclusion for this study were self-reported to be Caucasian, compared to 88.5% of county residents who reported to be Caucasian. Furthermore, while 100% of the participants in this study had health insurance, the United States Census Bureau (2015) notes that only 91.5% of county residents have health insurance. The labor force for women in the county is 57.3%, compared to the 60% of employed study participants (United States Census Bureau, 2015). Education rates for the county indicate that 22.9% have a bachelor's degree, though that number drops to 14.1% for the city (United States Census Bureau, 2015). This statistic indicated that the study participants with a bachelor's degree (20%) ranked higher than the city statistic, but lower than the overall county. Marital status for the county, according to the United States Census Bureau (2015), was listed as

52%, but ranked 40% for research participants. The final metric of comparison was related to poverty levels. While all of the study participants stated that they had adequate financial resource, 60% of the participants met the eligibility requirements for Medicaid or Medicaid product coverage. According to the United States Census Bureau (2015), 18.2% of the residents, in the county where the study took place, are living in poverty.

Overall, the sample population in this study had lower levels of education compared to the county (higher when compared to the city and the state), a higher number of insured adults, higher Caucasian representation, lower rates of marriage, and higher levels of financial need (based upon meeting Medicaid financial eligibility) when compared with the county statistics. One explanation for health insurance coverage is that those without health insurance would have been applied to either Medicaid, or a Medicaid product (such as Fidelis), upon their initial prenatal care visit, boosting up the levels of insured individuals. Another consideration is that the applicants who met inclusion for this study were all English speaking, and all had demonstrated adherence to care. An important finding from the research is that the women in this study were found to have established M-F attachment prior to seeking care, regardless of the demographic variables. Additionally, all reported adequate support in terms of transportation, financial, and social aspects, while 60% of the participants met the established income level guidelines required for Medicaid assistance.

Health initiatives for the county and state were reviewed and compared with national statistics according to risk indicators. The findings demonstrated that the county site for this research had higher rates of early maternal prenatal care in first trimester, ranking at 82.2% when compared with the state (73.2%) and with the nation (69.0%),



(NYSDOH, 2012). The rates of low birthweight and infant mortality, however, were reversed, with the research site having the highest incidence of low birthweights, ranked at 8.9%, when compared with the state and the nation, which both ranked at 8.2% (NYSDOH, 2012). Infant mortality rates for the research site were listed higher at 6.5% when compared to the state (5.1%) and the nation (6.1%) (NYSDOH, 2012).

These statistics indicate that early maternal participation in care does not consistently align with infant health outcomes. Early participation in care, as a discrete measurement, does not indicate continued adherence throughout the prenatal period. This finding strengthens the need to keep women engaged in care services throughout pregnancy by making visits meaningful. Practitioner understanding, and efforts to meet individual and changing patient needs throughout pregnancy, have the potential to guide and direct the maternal patient in her ability to perceive the benefits of adherence, and to surmount the perceived barriers to care. This concept aligns with the HBM as a cue to action, based upon perceived need for care, and the benefit of adherence. Consideration must be given to building M-F attachment, and to exploring previous patient experience and interpretation as it establishes a comparison for patient expectation. Keeping patients engaged in care requires that practitioners meet varied individual and changing needs, provide reassurance of maternal and fetal health, facilitate meaningful interaction, and support positive patient self-directed behaviors.

Literature has focused upon identifying risks and outcomes among groups of non-adherent women with shared traits and challenges. Utilizing a directed content approach with the social theory of the health belief model (HBM), new research was conducted to explore multiparous maternal perception regarding the significance or value of prenatal

care. The emergent themes demonstrated that the perceptions of significance regarding prenatal care among the women who participated in this study, aligned with the theoretical constructs of the HBM. The behavior of adherence is motivated. Health-promoting behavior in terms of maternal adherence to prenatal care is positively motivated by maternal fetal bonding, or maternal-fetal (M-F) attachment. The five themes identified in this study are intertwined, related, and correlate to the overarching theme of M-F attachment and the HBM.

The five identified themes of the multiparous participants in this study validated that pregnancy is an experience or journey, uniquely perceived and individually interpreted. The value of prenatal care is determined by each patient, based upon the way in which the individual perceives her pregnancy needs have been met. Identified motivators for prenatal care included reassurance of maternal and fetal well-being, patient-provider interaction, relationship, the perceived need for self-directed care behaviors, and the motivating factor of fear or concern regarding unknown or adverse outcomes. Established M-F attachment facilitates a cue to action, or an identified need for prenatal care. This study demonstrated that once care is initiated, it serves to strengthen and continues to build upon that bond.

Though the meaning of prenatal care may differ according to individual need, perception, interpretation, and experience, adherence is a motivated behavior. The value or significance of care is defined by the way in which it satisfies patient needs, stemming from an existent bond between the maternal patient and her unborn child. Findings have the potential to guide practice change aimed at identifying patients at risk, intervening to meet patient needs, and facilitating maternal adherence by building upon M-F

attachment. Improved maternal adherence to prenatal care, health promotion behaviors, and utilization of services, increases the potential for optimal maternal, fetal, and delivery outcomes.

### **Discussion of Findings**

Five emergent themes were identified among the research participants interviewed, with an overarching theme of M-F attachment. M-F attachment was found to be existent in each of the adherent multiparous women interviewed in this study. In comparison to the HBM theory, M-F attachment served as a prompting cue to action. A construct of the HBM indicates that a cue to action is needed to motivate a positive behavior change. The bond of the maternal patient with her developing fetus, signaled the need to seek care as a way to achieve an optimal level of health and well-being, which is central to the social theory of the HBM. The benefit of seeking care was perceived to be greater than the barriers to accessing and utilizing care for the participants interviewed. Acting upon the perception of risk and susceptibility for poor or unknown outcomes, participants derived additional motivation to seek care, aligning with the HBM theory.

**Overarching theme: maternal-fetal attachment.** From a healthcare practice standpoint, identifying M-F attachment in maternal patients is important. According to the theoretical HBM framework, women who have not established M-F attachment might not have the needed cue(s) to action, perceived risk, or susceptibility perception to motivate care seeking behavior. Research to support the importance of M-F attachment in care-seeking behavior indicates that without an established maternal bond or attachment to the fetus, maternal patients may be more likely to be avoidant of care (Haddrill et al., 2014), or fail to recognize their own behavior in relation to health outcomes (Kornfield et

at., 2014). From a theoretical standpoint, maternal patients who do not have M-F attachment, may not have the same prompt or signal that serves as a cue to action. According to the HBM, the motivation to seek care is weakened or may be nonexistent without a perceived cue to action. Furthermore, those patients who are unable to accurately assess their level of risk, susceptibility, or potential for adverse outcomes are predicted, theoretically as indicated by the HBM, to not receive the motivating cue to action for behavior change, placing them at an increased risk for nonadherence

M-F attachment is varied among patients and influenced by their circumstances, perceptions, and abilities. Healthcare professionals need to appreciate, from an educational standpoint, the opportunity to direct maternal behavior with regard to adherence, and by identifying those maternal patients who are most at risk. In this study, all 10 participants stated that they had adequate financial, social, and transportation support. From a social justice standpoint, having resources to meet individual needs may facilitate successful M-F attachment. In patients who lack adequate resources, it may be more difficult to establish that bond. The stress of not being able to meet financial obligations, have dependable transportation, or draw upon a consistent support system, may hamper the maternal patient's ability to develop M-F attachment, and subsequently decrease adherence to care. Literature suggests that those who have supportive structures in place are more likely to utilize services (Olds et al., 2014).

**Theme 1: individual perception of benefit and need for care.** Of the five themes noted in this study, the highest ranking by unit code frequency was the participants' ability to identify benefit(s) and to satisfy different, varied, and individual needs by utilizing prenatal care visits and services. Applying the HBM, this finding

indicates that individuals must weigh their individual perceived benefit of care against the barriers that they perceive they must surmount in order to direct the health promoting behavior of adherence. Among the participants interviewed, this need was defined within the context of previous experience and expectation. Theoretically, the perception of risk, susceptibility, and benefits of previous adherence impacted decision making and directed care seeking behavior. When asked to identify what prenatal care meant to them, the most frequent coded units were personalized, based upon the patient, her unborn child, and the bonding of the mother and child (M-F attachment). The participants attached personal meaning to the way in which prenatal care visits and services were able to address their perceived needs and expectations as a HBM benefit of care. Perception of need as a motivating factor correlates with the theoretical structure of the HBM, which indicates that initiation of health promotion behavior is based upon individual perception, along with personally identified benefits and barriers.

The literature further supports the findings in this study with regard to the need for personal care, aimed at meeting individual needs. Aragon et al. (2013) found that individual care that meets patient needs through patient-centeredness promotes increased patient satisfaction. Likewise, research has demonstrated that meeting patient needs through patient-centered care is empowering (Baldwin & Phillips, 2011), potentially impacting upon the utilization of services (Hamden-Mansour et al, 2014; Kumbani et al., 2013; Olds et al., 2014), and adherence rates (Tanner-Smith & Lipsey, 2012).

**Theme 2: assurance of maternal and fetal health.** The second identified theme focused upon the reassurance of health and well-being as a motivating factor of adherence. According to the HBM, behavior is motivated. The behavior of adherence,

then, was prompted by the motivation of reassurance of maternal and fetal well-being that patients derived from adhering to their prenatal care visits. For the participants interviewed in this research, the benefit of knowing their health status, and that of their unborn child, was a strong motivating factor for adherence to care. This finding aligns with the HBM, in that the benefit of reassurance, or confirmation of health, was noted to be stronger than the barrier(s) preventing them from seeking care services. Seeking confirmation and reassurance was validating, and greater in terms of motivation, than the fear of not knowing if a health risk was present. This finding directly aligns with the HBM theory in that the behavior of adherence was motivated by the assurance of health and well-being. Existent literature, however, differed in terms of patient reassurance as a motivating benefit of seeking care.

While the findings of this study indicated that adherent multiparous women are able to appreciate the reassurance of health and well-being at prenatal care visits, previous research aimed at understanding nonadherence found that multiparous women did not feel they needed care for reassurance (Heaman et al., 2014). Additional research has suggested that pregnant women who are most at risk are less likely to appreciate the risks of pregnancy (Lee et al., 2012), and that multiparous women are less likely to seek assurance by engaging in risk taking behaviors, including nonadherence to care (Okah & Cai, 2014). Research has also indicated that multiparous women are less likely to engage in care due to avoidance and disbelief (Haddrill et al., 2014). While previous literature may have differed from the findings of this study, it is important to note that the aim of previous research was to identify factors related to nonadherence, while the participants in this study had a history of adherent behavior. Additionally, the participants of this

study had not experienced losses. Therefore, the reassurance of health and well-being was found to be a significant motivator independent of previous outcomes which may have otherwise affected decision-making with regard to adherence.

Previous poor outcomes of loss may theoretically present as barriers to care by weakening the perceived benefit of care according to the HBM. Research based upon traits and circumstances among groups of women who were non-adherent was focused upon varied factors that influenced the ability or decision of women who did not, or could not, adhere to care. The multiparous women in this study were adherent. The participants in this study were seeking care as a benefit to health promotion, which aligns with the HBM theory in that perceived benefit(s) must outweigh the barrier(s) to implementing a health promoting behavior change.

**Theme 3: provider interaction.** The third theme of the research indicated the importance of patient-provider interaction in meeting patient needs and building upon a trusting relationship with patient-centered care and attention. Patients in this research recognized provider interaction and services to be crucial factors in health promoting behavior. This theme aligns with the HBM construct in terms of a perceived maternal benefit. Women who have established provider interaction are able to benefit from the experience. According to the HBM, benefits to care must outweigh the barriers to seeking and accessing care and care services. The ability to obtain advice, guidance, and desired information to direct their own care was recognized as a valued motivating factor in maternal participation of prenatal care services. The behavior of adherence was motivated by the ability to receive care, aligning with the HBM. Patients identified inclusion in care and decision making to be indicators of meaningful partnership. The HBM, as a social

theory to predict behavior, supports this finding by demonstrating that patients who recognize the benefit of care are more likely to utilize care as a health-seeking behavior.

The importance of patient and provider interaction was further evidenced to be a significant factor for those participants who chose to switch or leave their previous care providers' practice when provider attention, care, or interest was felt to be ineffective in meeting the patients' prenatal care needs and concerns. Rather than missing visits, or not adhering to care, participants in this research exercised self-care directed behavior by seeking out a different practice. The HBM explains this action in terms of the benefit of provider interaction to outweigh the barrier of seeking a new provider. The behavior of changing providers expressed the significant perceived benefit of interaction, and the underlying motivating or driving force of an internalized need to seek care. These key components of the HBM, in terms of motivated behavior and individually perceived benefit, effectively demonstrate the key role that provider interaction plays in influencing maternal decision-making as it relates to the prenatal experience.

The theme of provider interaction as a motivation for health promoting behavior directly aligns with the HBM theory in that provider interaction facilitates the opportunity for patients to understand their health risk and susceptibility, and how health directed behavior may be able to improve outcomes of health. The participants in this study appreciated the interaction with their providers as a motivating factor, or benefit, aligning with the HBM. A consideration of this study was that all participants reported that they had financial, social, and transportation support, hence accessing care was not a reported or identified barrier for them. The literature generally supports the findings of this study in terms of provider interaction and support as a motivating factor in seeking care,



particularly when the care is patient-centered (Aragon et al., 2013; Baldwin & Phillips, 2011; Olds et al., 2014; Tanner-Smith & Lipsey, 2012). The literature reinforces the findings of this study, noting that care with clinical and interpersonal processes is essential in patient engagement (Sword et al., 2012).

Conversely, literature has indicated that providers are challenged to address patient care related problems (Balaam et al., 2013), and that provider attitudes, care, and treatment, with resultant patient dissatisfaction, may be a barrier to care (Brighton et al., 2013). Barriers to care, when too great to surmount, may theoretically explain the inability for some maternal patients to focus on adherence. The HBM notes that understanding the need for change is not sufficient to motivate behavior change when the barriers to change outweigh the perceived benefits.

Research indicating that patients are less likely to seek care when they are dissatisfied with their provider (Brighton et al., 2013) differs from the finding in this study, where almost one third of the participants chose to seek a new provider, rather than to miss care visits. While the participants in this study reported adequate resources and an ability to access care, research that supports maternal decision-making indicates that some women choose to not seek care even within the context of socialized healthcare where care, transportation, and childcare services are without cost at the point of entry (Tough et al., 2007). The HBM is able to explain this discrepancy by understanding that the perceived benefit of care, may be outweighed by the presence of significant barriers (changing providers). Changing providers may be difficult, particularly for those with decreased ability to pay, lack of insurance, transportation concerns, and the concern that a new provider will not be an improvement. Within the context of the HBM, when the

barrier to change, or the barrier to seeking care outweighs the perceived benefit, the maternal patient may not derive the adequate motivation needed to create health promoting change by changing providers. From a social justice standpoint, women need options if they are unhappy with their care providers. A lack of resource(s) may limit a patient's choice in seeking the type of provider interaction or relationship that brings meaning to her prenatal experience.

**Theme 4: self-directed behavior.** The fourth theme was noted to be based upon self-care directed behaviors, or those services that promote healthy outcomes. The HBM suggests that behavior is motivated. The patients interviewed in this study were motivated to promote healthy behaviors in order to effect well-being. They identified eating well, exercising, managing stress, and taking prenatal vitamins to be important care behaviors. Likewise, the women who presented for prenatal care sought early and adequate prenatal care visits and services as a self-directed behavior. This finding aligns with the HBM in that the women interviewed were able to identify their increased need for care, as a cue to action, in relation to the perceived risk and susceptibility of not engaging in health promoting behaviors. Additionally, this finding supports the HBM in that the benefit of positive health seeking behaviors outweighed the barriers of not implementing positive change. When three of the women interviewed found their needs were not met by their former providers, they opted to change practices, rather than to miss visits. This finding contradicted previous research which indicated that nonadherence was a factor linked with patient dissatisfaction with providers. Three women interviewed in this study sought a different provider, as a self-directed care behavior, when they were dissatisfied with care. This directly links to the HBM theory in

terms of recognizing the importance of perception of benefit, barriers, and identified cues to action in maternal decision making and behavior. This theme is linked to the way in which women perceive the way prenatal care meets their individual needs, and how reassurance in provider capability and care directs maternal decision making.

The theme of self-directed care as a motivating behavior in adherence aligns with both the HBM and with research, particularly with regard to multiparous patients. Lee et al. (2012) notes that maternal decision-making and attitudes are influenced by previous pregnancy and the perceived value of care. Likewise, Olds et al. (2014) noted that support influences behavior and is effective in decision-making behaviors (Schaffer & Mbibi, 2014). Aragon et al. (2013) noted that self-care behavior is related to addressing patient needs. All of the participants in this study demonstrated self-care behavior through adherence, aligning with literature which supported decision-making influences of previous pregnancy and the perceived value of prenatal care (Haddrill et al., 2014).

The HBM theoretical aspect of risk perception in pregnancy was noted to be present, with the cue to action to seek care, and the validation of confirmed pregnancy among the participants of this study. Lee et al. (2012) note that risk perception is an instrument to initiate patient self-care, supporting the theme of adherence (as a self-directed care behavior) based upon identification of risk perception. While one study indicated that self-care is compromised in pregnancy (Prathima, 2014), the population in that study did not focus upon adherent multiparous women. The participants in this study directed self-care. The HBM is able to explain this discrepancy in that the decision or ability to enact positive self-directed change (as a benefit), was not hindered by the barriers of social, transportation, or financial support. In comparison to the previous

literature, a factor of difference may be related to the demographics of the populations sampled. All of the women in this study reported adequate resources, which served as a HBM theoretical benefit.

**Theme 5: fear or concern of unknown outcomes.** The fifth and final research theme was identified to be based upon the fear or concern of unknown outcomes stemming from nonadherence as a motivating factor in seeking prenatal care visits and services. The HBM suggests that risk perception, susceptibility, and cues to action motivate positive behavior change when the perceived benefit(s) outweigh the perceived barrier(s). Of the maternal patients interviewed, the inability to identify, understand, and act upon potential problematic issues for either themselves or their unborn child, raised concern of unknown consequences and uncertain outcomes. This theme is correlated with the HBM theory in terms of a positive motivating factor of reassurance, susceptibility, perceived risk, and subsequent behavior motivation. It also relates to the self-directed theme of managing stress levels in pregnancy as a health promoting factor. Relying upon healthcare professionals to communicate in a trusting relationship, the maternal patients in this study recognized the intertwined factors that influence and direct their need for care. The patient-provider interaction, as a HBM perceived benefit, also strengthens M-F attachment, and guides decision-making regarding adherence to prenatal care visits and services. The behavior of adherence, then, is motivated by the cues to action which indicate the need for care, and the perceived benefit(s) of care that outweigh the perceived barrier(s).

The theme of fear or concern of unknown outcomes related to nonadherence to prenatal care visits differs from existent literature. This difference may be related to the

selected population, and demographic factors that have the potential to influence outcomes. Research has indicated that maternal decision-making regarding prenatal care is influenced by the perceived threat of pregnancy (Dako-Gryeke et al., 2013) and perceived powerlessness to control outcomes (Hamden-Mansour, 2014). Other research indicated that risk is not accurately perceived in pregnancy (Lee et al., 2012), and that multiparous women are more likely to engage in health compromising behavior with subsequent pregnancies (Okay & Cai, 2014).

The participants in this research recognized the risk and susceptibility of unknown outcomes to be inherent in pregnancy, aligning with the HBM. Furthermore, pregnancy provided the cue to action in seeking care, and was motivated by the perception of risk, a finding which supports the theoretical structure of the HBM. A significant factor in appreciating the difference of findings may be related to the participants in this research who, according to the demographics, all had a form of health insurance, and all reported adequate support systems. Additionally, all of the participants of this study had completed eleventh grade, and all were adherent to care when recruited into the study. Another point of differing outcomes was that in previous research, participants voiced an external locus of control, with an inability to change outcomes (Hamden-Mansour, 2014). The participants in this study noted self-directed care behaviors to be important in terms of determining outcomes, indicating an internal locus of control. Without a perceived ability to influence change (external control), the motivation for implementing behavior action is theoretically diminished. The HBM indicates that behavior is motivated through risk and susceptibility perception. Therefore, in the absence of accurately identifying and

acting upon perceived risk, or initiating behaviors directed at health promotion, the motivation for adherence is weakened or perhaps even nonexistent.

### **Implications for Education**

The HBM indicates that maternal patients who perceive the risk and susceptibility of pregnancy, and who understand the behaviors needed to reduce that risk, should theoretically initiate behavior measures to eliminate or reduce the threat of risk. This understanding provides an opportunity for healthcare practices to educate patients, based upon patient learning needs and abilities, to appreciate the effect of behaviors on health outcomes. According to the HBM, appreciating the benefit of reassurance may effectively motivate the behavior of adherence. Reassurance is a motivating benefit of seeking care, aligning with the HBM. Utilizing prenatal care visits as an opportunity to educate and reassure patients assists in identifying and meeting patient needs for care, and encourages continued adherence throughout the pregnancy. Care visits and services are valued as benefits of care, but also as important opportunities to assess risk and susceptibility, supporting the constructs of the HBM.

Education for healthcare providers to understand the link between M-F attachment and maternal adherence to care is significant. Healthcare providers who are able to recognize the unique and specific needs of their patients may be able to identify how their maternal patients perceive the significance of the care they receive. Patients present with varied needs and abilities to learn. Education aimed at meeting individual and changing patient needs may facilitate greater opportunity for patient directed care. The HBM indicates that patients need to appreciate the benefits to care, and to identify

ways to surmount barriers that prevent them from accessing the care they need. As care services and patient needs are varied, individual care is indicated.

Time invested in educational opportunities for patients is time well spent.

Educating patients to recognize the way in which they may utilize prenatal care services to enhance their experience, may be effective in increasing adherence rates.

Recommendations for change include education for healthcare professionals to recognize the current and changing needs of maternal patients, with regular reassessment to ensure the patient needs are being met. Ensuring patient needs are satisfied, and that all patients receive the education that they need and deserve to guide decision-making, is a professional, ethical, and social responsibility.

### **Implications for Practice**

Healthcare providers need to deliver personal care that includes the patient as a partner in her own care and decision-making. The participants of this study noted that provider interaction was significant as a motivating factor of adherence. The HBM theory suggests that the patient benefit derived from provider interaction outweighed the barrier(s) of seeking care. Participants felt that it was important for providers to spend time with them, ensure that their learning needs were met. In addition, patients expressed the need to be heard, establishing trust in their care, and to be a partner in decision-making. The HBM supports the patient provider interaction in terms of risk perception and susceptibility. Healthcare providers are poised to appraise patient health, and to potentially reassure patient well-being.

From a practice standpoint, healthcare professionals need to appreciate the reassurance that maternal patients derive from prenatal care visits and services. The

identified themes of this study have implications for healthcare practice. The HBM, as a theoretical construct, is able to explain and predict maternal behavior of adherence in terms of risk perception, susceptibility, cues to action, and the motivation of behavior change to influence outcomes. Additionally, the HBM explains the way in which perceived benefit(s) of behavior change are needed to outweigh the perceived barrier(s) to change. The outcomes and implications of this study, with the HBM as a guiding theoretical model, were able to demonstrate thematic findings with implications for practice change. The findings of this research indicate that women who do not have M-F attachment, as a HBM theoretical cue to action, may be less likely to perceive the benefit of care seeking behavior. Healthcare providers who are able to assess that M-F attachment has not established may be able to identify those maternal patients who are most at risk for nonadherence.

By developing and utilizing an algorithm of assessment at the time of verifying pregnancy, healthcare professionals may identify M-F attachment as an indicator to predict maternal behavior in terms of adherence. Healthcare professionals who are able to identify barriers to care, including unmet financial, transportation, and social needs, are poised to make indicated referrals and support M-F attachment for those at risk. According to the HBM, maternal patients who have reduced barriers to care, and are able to appreciate the benefits of care, are predicted to utilize care services, acting upon the cues to action. By identifying those most at risk, and meeting their needs to reduce barriers to care, healthcare professionals may increase maternal adherence rates and facilitate optimal outcomes.

From both a practice and educational standpoint, the HBM indicates that



healthcare professionals need to appreciate how patients perceive not only their risk and susceptibility, but their ability to create change. The HBM predicts that behavior change is motivated. Fear and uncertainty can be powerfully motivating, resulting in a range of responses from a positive directed change to avoidance and nonadherence. The HBM describes motivation in terms of risk perception and susceptibility. By understanding a patient's perception with regard to her ability to appraise her level of risk, healthcare professionals may provide patient-centered care to subsequently improve maternal and fetal outcomes.

### **Implications for the Executive Leader**

From a leadership standpoint, the ability of the healthcare provider to inspire and motivate patients in a shared goal of healthy maternal and fetal outcomes is important for adherence and utilization of care services. Leadership opportunity in terms of engagement, encouragement, and staying focused upon the goal of optimal health outcomes is potentially established and reinforced with each patient-provider encounter. According to the HBM, perception is a key motivator to implement health promoting behavior. As each patient has unique needs, interpretations of the prenatal experience, perceived challenges of pregnancy, and expectations for care, the need for services are individually defined. The HBM defines challenges in terms of patient perceived benefits and barriers to behavior change. Cultural, social, physical, psychological, and spiritual differences potentially shape perception according to the HBM in terms of patients' recognized need for care, risk perception, and susceptibility

Leadership in healthcare practice and education is needed to establish an algorithm for intervening at the onset of verifying a pregnancy to ensure that patient

needs are being met. The responsibility of leadership to enact the needed change in policy is shared among healthcare providers and governing organizations, including ACOG, which shape the healthcare environment and guide practice. Leadership is indicated to explore the implications and benefits of healthcare practice to create and support effective policy changes aimed at supporting M-F attachment, including provider reimbursement for patient adherence. Changing the global fee structure of reimbursement may motivate practitioner interest in patient adherence. Leadership in social justice of healthcare should be directed towards personalizing accessible care for patients.

Practice change that is patient-centered in identifying and meeting patient needs may enhance the pregnancy experience and increase maternal adherence. Leadership opportunity in motivating providers and patients in creating a shared vision for optimal outcomes is best achieved through a patient-centered approach by changing practice methods to accommodate patients, rather than expecting patients to conform to a structured system. In terms of social justice, creating productive models that allow providers to spend time with patients, in order to create authentic trusting relationships, is important. Patients need to understand how best to direct their healthcare needs, initiate positive health behaviors, and to be able to differentiate between expected and non-expected pregnancy signs in order to recognize and act upon health threatening situations. The HBM supports this finding as the perception of risk in motivating health behaviors.

From a leadership perspective, patients need to be encouraged to direct self-care behaviors, and to be empowered to act in ways that promote optimal outcomes. This ideal also highlights the importance of the patient-provider interaction as a trusted partnership in working toward the shared goal of maternal and fetal health. As a perceived benefit to

health, and cue to action, maternal patients should theoretically, according to the HBM, initiate self-care behaviors to improve health and outcomes. Leadership in healthcare practice requires understanding patients' needs, and guiding them in a shared effort of collaboration. From a social justice perspective, healthcare leaders need to empower patients to act. Providing resources, education, support, and encouragement to maternal patients may facilitate patient understanding. Increasing knowledge, and enabling patients to act upon that knowledge, may foster the motivation which is theoretically needed, according to the HBM, to prompt a behavior change.

A final consideration for the executive leader and policy involves recent initiatives to bundle healthcare costs for patient care and services. Bundling payments as a mechanism to contain and control rising healthcare costs, includes a single payment for an episodic care encounter. The trajectory of care includes all of the costs incurred between providers, settings, and over time, with varied reimbursement for the providers based upon the service provided. This fee structure, similar to the global fee payment currently made for obstetrical services, is built upon the premise of significant healthcare cost savings, particularly for readmission rates. A point of focus for the executive leader with regard to bundling healthcare costs is to consider how engaged providers may be in motivating patient adherence without the realized financial benefit incentive of a fee for service arrangement.

### **Implications for Research**

Further research is indicated to explore effective ways of identifying individual and changing patient needs throughout the prenatal period, using a patient-centered approach. While the sample size of this study was small, the implications regarding M-F

attachment in adherence were shown to be significant. Continued study to determine the significance of M-F attachment in maternal adherence, and ways to strengthen that bond, may provide new evidence, with the potential for effective practice change. Research is indicated to explore ways in which providers may engage patients in a shared and trusted relationship to increase motivation to prenatal care adherence, and to motivate self-care behavior among patients through education. Research opportunities exist in the exploration of how healthcare professionals may identify the effect of locus of control to enhance interaction, and to promote reassurance, ultimately motivating adherence to care.

### **Limitations**

Limitations of this research included the small sample size, and homogeneity among those who presented for care. Limitations were noted in terms of how the sample population demographics compared to those of the city, county, and state statistics. The small sample size and homogeneity had the potential to influence findings. Additionally, all of the participants had a history of adherent behavior, all had established M-F attachment, and all reported adequate financial, social, and transportation resources.

### **Conclusion**

There are three identified pillars of consideration with regard to effective prenatal care. Prenatal care must be regarded within the context of structure, process, and outcomes. Structurally, prenatal care is designed to meet the areas of assessment, measured change, surveillance, identification of early and emerging problematic occurrences, and to provide intervention as indicated to promote optimal pregnancy outcomes. The second pillar is one of process in considering how the care is delivered. Consistency in the delivery of care and services includes the interaction of the

practitioner and office in meeting the patients' individual needs and providing knowledge, guidance and support along the journey. It also includes the level of patient satisfaction and engagement. The final pillar is one of outcomes. This is the measured end result of effective and meaningful care in terms of discrete data with measured maternal adherence to care visits, maternal utilization of care services, and the overall statistics indicating maternal, fetal, and delivery outcomes in terms of morbidity and mortality rates, and financial strain. All pillars have implications for healthcare providers in practice, social justice and educational considerations, and leadership opportunity.

AAFP, ACOG, and AAP have structured guidelines with regard to care services and timing of the services, with provision and accommodation to be made at specifically determined intervals. The structure itself may in fact meet the needs of the majority of women, however, maternal patients present with differing, varied, and changing needs. According to the HBM, patient perception of need or risk is a motivating factor for behavior change. The process of delivering care is generally structured to meet the needs of women as a group, without consideration for individual perception, changing needs, abilities, and diverse learning challenges. Likewise, the opportunities for education and provider engagement are inconsistent and diverse among practices.

All maternal patients are unique with regard to their backgrounds, cultural identities, histories, experiences, expectations, and perceived levels of need and support. Additionally, multiparous maternal patients have a context for comparison in experience and expectation. The prenatal period is often a time of rapid change in personal, social, and family life. The inherent challenges of pregnancy are further magnified by unpredictable changes in relationships, mental and physical health, finances, social, and

spiritual dynamics. Maternal response to challenges and changes during pregnancy are often varied, erratic, and complex. Assessing maternal patients on a regular basis for changing and differing needs may be an effective method in providing patient-centered care, meeting individual needs, and increasing levels of satisfaction with care. Meeting maternal needs may facilitate improved rates of maternal adherence to prenatal care, and subsequently improve pregnancy outcomes.

**Applying the HBM.** The HBM, as a theoretical construct, suggests that behavior is motivated. Motivation is fueled by a perceived risk and susceptibility. Behavior change, according to the HBM, is signaled by a cue to action, or a prompting indicator. Understanding, and appreciating the need for change are not necessarily adequate. The HBM indicates that the individual seeking change must be able to appreciate the benefit of change, and to weigh that perceived benefit(s) against the perceived barrier(s). When maternal patients are able to appreciate the outcomes of prenatal care, they may be more likely to adhere to care services. Increasing the perceived need for care, and facilitating a meaningful experience is a benefit which theoretically, according to the HBM, should increase the behavior of adherence. By utilizing prenatal care to the fullest, maternal patients have an increased understanding and an appreciation of its importance. The research findings of this study indicate that healthcare providers need to assist maternal patients in recognizing the value of care, and the way in which care visits and services are able to meet their individual needs. The HBM indicates that in order to surmount barriers, health care providers and practices need to facilitate adherence by supporting and enabling women to appreciate the benefit of being proactive in seeking care that is meaningful and fulfilling for them.

Adherent multiparous women who utilize prenatal care visits and services appreciate the benefits of participation. Their perceived value of care should guide practitioners and health care providers in assessing how varied and changing needs, including the need for support and trust, affect maternal decision making and behavior. Perception of risk, as a motivating factor in behavior change, aligns with the theory of the HBM. While it is important to establish a baseline of needs through assessment at initial prenatal care visits, an algorithm should be established to periodically monitor for changing needs and maternal satisfaction with care throughout the pregnancy. As this study indicated that maternal patients have individual internal motivation to seek care through M-F attachment, providers should focus upon individual maternal needs and responses to pregnancy and life changes as they impact the pregnancy, and health of the patient. This action may serve to strengthen sustained adherence throughout pregnancy.

Healthcare providers are challenged to meet the educational needs of maternal patients as a vital responsibility in promoting optimal outcomes. The finding that adherent multiparous maternal patients seek care to meet their individually identified needs may present an opportunity to reach those who have decreased ability to utilize services. That benefit however, according to the HBM, must outweigh the barrier(s) that impede care seeking ability or behavior. All of the women in this study reported adequate financial, transportation, and social support. Satisfaction of need was determined by asking each participant if there was an unmet need for resources or referrals in financial, transportation, or social support. Ensuring that patients have adequate support resources in an ongoing assessment throughout the prenatal period increases the potential to face the multiple, varied, and changing challenges that accompany pregnancy.

Recommendations for practice change, based upon the findings and the HBM theory, are aimed at meeting maternal needs and expectations as they relate to M-F attachment, reinforcing the benefit of prenatal care visits, and reassessing patient needs to promote continued utilization of services. Regular assessment of maternal satisfaction and needs-attainment should be incorporated into scheduled prenatal care visits. Education and reassurance are important, along with opportunities for bonding within a relationship of trust. Assessment, education, and reassurance are benefits of care, theoretically capable of prompting health promoting behavior. Life changes impose challenges that require adaptation. In addition to the prescribed assessment of biologic and physiologic findings of pregnancy, M-F attachment, the changing emotional, psychological, supportive, bonding, and educational needs of maternal patients should be assessed and addressed. This action would support the predicted HBM theoretical motivation needed for behavior change. A final recommendation is to explore the barriers that hinder maternal ability to establish M-F attachment among those who are most at-risk for nonadherence based upon previous behavior, or decreased level of support. As the HBM suggests, barriers need to be surmounted through perceived benefit. Prenatal care services are most appreciated by those who utilize them.

The aim of this study was to identify perceptions of significance regarding prenatal care among multiparous women. Utilizing a directed content approach with the health belief model as a theoretical framework, a semi-structured qualitative study was conducted in a large obstetrical office in western New York. There were five emergent themes identified, in addition to one overarching theme. The overarching theme of pre-established maternal-fetal attachment (M-F attachment) was found to be present in all 10



of the maternal patients who were interviewed. In alignment with the theoretical framework of the HBM, M-F attachment was noted to be a significant cue-to action in seeking prenatal care. In addition, prenatal care visits were found to further strengthen M-F attachment, which facilitated continued adherence among the women in this study.

The first theme indicated that maternal adherence is based upon individual perceived needs and patient centered care. This theme aligns with the HBM theory and research (Appendix H). The importance of care to meet individual needs was demonstrated to include a focus on patient trust, satisfaction, experience, and the patient perceived need for prenatal care in the utilization of services (Aragon et al., 2013; Olds et al., 2014; Tanner-Smith & Lipsey, 2012). The theoretical alignment of the HBM is noted in terms of the perceived need for care with pregnancy as a cue to action.

The second theme of reassurance in maternal and fetal health as a motivating factor for seeking services aligned with the HBM theory, as a benefit of care, and as a cue to action (Appendix I). This finding aligned with research regarding the benefit of care, but differed from studies that linked nonadherence with a perceived decrease in maternal ability to control outcomes (Dako-Gyeke et al., 2013) and delayed care due to avoidance (Haddrill et al., 2014). This theme was supported through the HBM in terms of perceived benefit, but differed in terms of cue to action, and research which indicated that multiparous patients did not feel they needed care (Heaman et. al, 2014). Additionally, it aligned with the HBM in terms of the need for risk perception in decision making, but differed from previous experience results indicating that the perception of risk is altered in pregnancy (Lee et al., 2012). It also differed from existent research which concluded that multiparous patients are likely to engage in risk seeking behaviors, including non-

adherence (Okah & Cai, 2014). Though previous literature differed from the findings of this study, the previous literature was focused upon non-adherence, and did not explore whether M-F attachment had been established in the populations sampled.

Theme 3 indicated that provider interaction motivated patients to seek care, aligning with HBM theory (Appendix J). Provider interaction enabled patients to assess their level of risk and susceptibility. The HBM suggests that risk and susceptibility are motivating factors in behavior change. Provider interaction as a motivating factor in seeking prenatal care aligned with previous evidence regarding the importance of trust (Aragon et al., 2013) and also in terms of research which showed that supportive care to increase patient knowledge is empowering, and assists patients in accepting responsibility for their care (Baldwin & Phillips, 2011). The thematic finding of provider interaction as a motivating factor differed from literature linking provider dissatisfaction to non-adherence (Brighton et al., 2013; Heaman et al., 2014). Participants in this research sample chose to change providers rather than to be non-adherent to care. The difference may be seen in terms of the benefit of care related to M-F attachment, or as a personally identified need for care, outweighing the barrier(s) to seeking out and utilizing services from a provider who is more likely to meet their individual needs.

Theme 4 aligned with theory in that self-care behavior stems from the perceived level of risk and susceptibility as a motivating health promoting behavior, (Appendix K), directly linking it to the HBM. Additionally, pregnancy was noted to be a cue to action in the utilization of prenatal care. A cue to action, according to the HBM is a prompting signal for directed positive health behavior change. When compared to literature, the theme of self-care directed behavior as a motivating factor in adherence aligned with

literature, with the exception of research which linked pregnancy with compromised behavior (Prathima, 2014), and literature that demonstrated risk behavior increases among multiparous patients (Okah & Cai, 2014). The literature demonstrates, however, that support systems enhance self-care behavior, including adherence (Olds et al., 2014; Schaffer & Mbibi, 2014). Maternal support is significant in decision making, and potentially impacts upon a patient's ability to engage in care. All of the adherent maternal patients in this study were noted to have adequate support. The benefit of support, according to the HBM, outweighed the barrier(s) to behavior change. To that end, maternal patient supported the ability to engage in self-directed behavior by reducing barriers to behavior change.

The fifth and final theme indicated that the fear or concern for maternal and fetal outcomes was a motivating factor in seeking care. This theme aligns with the HBM theory, in that fear is an element in risk perception and susceptibility (Appendix L). Fear is also a cue to action in seeking care. This theme did not align with literature that linked non-adherence with patient perception that the provider had a greater influence on pregnancy outcomes (Hamden-Mansour, 2014), or that risk is not adequately perceived in pregnancy (Lee et al., 2012). Additionally, findings did not align with research which showed that the maternal decision-making process, regarding when to seek traditional versus non-traditional care, was dependent upon how the participants perceived the changing nature and type of threat to their pregnancy (Dako-Gyeke et al., 2013).

The overall comparison of literature and the HBM theory to the findings of this study indicated that all of the identified themes aligned with the HBM. Utilizing a directed content approach in both data gathering and in sample selection of adherent

patients may explain the consistent parallels. The differences in findings, when comparing previous literature to this study, may be related to the sample selection, which was limited to adherent women. The women in this study also consistently and individually confirmed that they had adequate financial, transportation, and social support which may have guided their decision making and ability to seek and utilize care. From a theoretical standpoint, according to the HBM, the barriers of inadequate support were low, allowing for the benefits to change. The overarching theme of M-F attachment was noted in all of the participants of this study, which may be a significant factor in the perception of value, significance, and identified need for adherence to care. In alignment with the HBM, the existence of M-F attachment served as a cue to action, prompting behavior change for health promoting behavior, including adherence to prenatal care.

### **Summary of Study**

The purpose of this study was to explore maternal perception regarding the significance of prenatal care among multiparous women. The aim of the study was to understand how adherent maternal patients perceive care. From a theoretical standpoint, the study was focused upon how the behavior of adherence is motivated in order to facilitate a meaningful experience in the way care is provided in practice. The ultimate goal of this research is to improve maternal adherence rates to prenatal care to subsequently improve maternal and fetal outcomes.

A review of literature found that maternal nonadherence is problematic, without an identified etiology or causation. Maternal nonadherence to prenatal care is multifactorial and complex. The literature indicated that differing factors, traits, and circumstances may increase the risk of non-adherent behavior. The literature findings

were found to yield conflicting results in an attempt to identify a cause and effect relationship between groups of women and nonadherence.

The design of this study was qualitative, with a directed content theory approach based upon the health belief model. The multiparous participants in this research study were noted to seek and value early prenatal care visits. While prenatal care services are offered in a generalized structured pattern in terms of testing, screening, and surveillance, the experience of pregnancy, and the perceived need for care, is individualized and varied. According to the theoretical HBM, patient behavior is prompted by perception of risk, susceptibility, cues to action, and the perceived benefit of change in order to surmount the perceived barriers to change.

The findings in this study indicated that participants had established M-F attachment, and had expressed a personal need or desire to be seen, and to receive care for themselves and their baby. M-F attachment, in accordance with the HBM, served as a cue to action, prompting care-seeking behavior and continued adherence. Prenatal care adherence was expressed as a way to meet individual needs, demonstrate bonding and care for the unborn child, reassurance, guidance in self-care directed behaviors, establishment of a trust relationship with providers, and as a partnership inclusion in care. It was appreciated in terms of the HBM, as both a cue to action, and as a benefit of care. Rather than limiting adherence to the utilization of directed care services, the women interviewed indicated self-directed care behavior as a partnership of inclusion. The motivation for seeking and participating in their care was individualized, multilayered, and complex, based upon perception of their needs and their previous unique pregnancy experiences.

This finding supports the HBM theory in that motivation is required for behavior change.

The first emergent theme of individual perception of need as a motivating factor for adherence aligned with the HBM and with the literature. The perception of need and recognized benefit guides self-directed behavior. The HBM indicates perception of risk and benefit are essential in health promoting behavior. Benefit was expressed in terms of variables such as supportive care, patient empowerment, satisfaction of previous experience, building a trusting relationship as motivating factors, and cues to the action of adherence. Cues to action, according to the HBM, prompt or signal the need for behavior change. Literature indicates that a patient centered approach is effective in patient satisfaction (Aragon et al., 2013), and that care-seeking is mediated by individual perception (Dako-Gyeke et al., 2013). Olds et al. (2014) and Tanner-Smith & Lipsey (2012) noted that meeting individual needs improves adherence and outcomes. Frohwirth et al. (2013) noted similar findings, using the HBM to demonstrate that diminished perception halts needed cues to action, and subsequently patients are less likely to initiate self-care behaviors.

The second emergent theme of reassurance and perception of individual risk as a motivating factor in adherence aligns with the HBM theory. The HBM indicates risk perception and cues to action as needed elements for change. Reassurance of maternal and fetal health as an indicator of risk and cue to action in this research was supported through previous research which indicated that understanding and perception increase utilization (Hamdan-Mansour et. Al, 2014). Findings contradict previous research which found that maternal patients have an altered ability to identify the level of risk (Lee et al., 2012). Findings also contradict research which indicated that the motivation to seek

prenatal care and adherence to visits was not based upon reassurance of maternal and fetal health, but sociocultural and spiritual factors (Dako-Gyeke, 2013). Additionally, findings contradict previous research which demonstrated that multiparous patients are more likely to be non-adherent due to disbelief or avoidance (Haddrill et al., 2014), the belief that they did not require care (Heaman et al., 2014), and the finding that multiparous women are more likely to engage in risk taking behaviors, including non-adherence (Okah & Cai, 2014). Differences in the ability to perceive risk and cues to action may have been influenced by the sample of this research. Additionally, the participants in this research had M-F attachment, and had resource support, therefore the benefit(s) of care, according to the HBM, were able to outweigh the barriers. Without the burden of inadequate social, financial, and transportation resources, the women in this study were theoretically, according to the HBM, able to surmount significant barrier(s) that potentially may impact upon M-F attachment.

The third emergent theme demonstrated that patient-provider interactions and relationships are motivating factors of adherence, aligning with the HBM theory and with previous research findings. Provider relationships and interactions are opportunities for increased knowledge which facilitates the perception of maternal and fetal risk and susceptibility. According to the HBM, risk perception and susceptibility are crucial in identifying and prompting behavior change. Modifiable variables of benefit with regard to meaningful provider interaction outweighed the barrier of seeking out a new provider for 30% of participants who were not satisfied with their obstetrical practice. This finding, likewise, aligns with the HBM.

The need for provider information, reassurance, guidance and advice were cues to

action and self-directed care behaviors. Cues to action are needed elements in prompting behavior change according to the HBM. These findings also align with literature which indicates that a patient centered approach increases satisfaction and adherence (Aragon et al., 2012), and empowers maternal patients to accept responsibility (Baldwin & Phillips, 2011). Findings further demonstrate supportive care and mentoring to meet patient needs and engagement are crucial to improved adherence and outcomes (Olds et al., 2014; Sword et al., 2012; Tanner-Smith & Lipsey, 2012). Findings contradicted previous literature which indicated that negative attitudes toward care providers, and dissatisfaction with care and treatment, led to non-adherence (Heaman et al. 2014). Participants interviewed in this study chose to change providers rather than to miss prenatal care visits when they did not perceive their interaction and relationship with their provider to be meaningful. Additionally, they had the resources to make that change, whereas others without adequate resources may have not been able to make that change. This aligns with the HBM in that benefit of change was not only greater than the perceived barriers to change, but due to the benefit of adequate resources, it was both a possibility, and a choice.

The fourth emergent theme of self-directed care behaviors, as a motivating factor in maternal adherence, was demonstrated in research to align with both literature and with the HBM theory. Participation in prenatal care was a self-directed action with identified needs to improve diet, take vitamins, manage stress, and participate in exercise. Additionally, seeking out a provider that meets patient needs was a self-directed care behavior identified among the participants interviewed. Pregnancy, with the growth and development of the maturing fetus is a cue to action for positive self-care behaviors,



including adherence, to improve outcomes. The HBM indicates that a cue to action is the stimulus for behavior change. The theme of self-directed care aligns with the HBM and research that indicates that risk perception is an instrument to initiate patient self-care (Lee et al., 2012), and that adherence is linked with individual behavior in decision making (Tough et al., 2007). The HBM predicts behavior change in response to risk perception as a motivating factor. Self-directed behaviors that promote positive outcomes are likely to be valued and repeated with subsequent pregnancies, as decision making guides future attitudes, and the patients' perceived value of care (Haddrill et al., 2014).

The fifth and final emergent theme of negative motivation was identified in maternal adherence to seeking out and adhering to care. The theme of motivation aligned with both the HBM theory and with the literature. The fear of adverse outcomes as a perception of risk and susceptibility was indicated to be a cue to action. Risk perception, perceived susceptibility, and cues to action are all motivating factors in behavior change, according to the HBM. Seeking care and adhering to prenatal care visits was seen as a benefit to outweigh barriers of negative outcomes. As a construct of the HBM, the perception of benefit(s) to behavior change needs to outweigh the perceived barrier(s) to change. This theme contradicts previous literature which indicates that patients may believe that the outcome of pregnancy is based upon a spiritual or cultural influence beyond their capability or control (Dako-Gyeke et al., 2013), or that the power to affect outcomes was most significantly controlled by the provider, as opposed to the fear of concern of outcome (Hamdan-Mansour et al., 2014).

Other literature indicates that adherence related to fear of unknown, risk, or adverse outcomes is not a factor in adherence due to decreased ability to understand or

appreciate the level of risk (Lee et al., 2012). This finding, however, would align with the HBM, in that level risk was not adequately perceived, and hence unable to provide adequate motivation for behavior change. Additionally, the threat of poor outcomes as a motivating factor for adherence was not identified by Okah & Cai (2014) who found that multiparous patients are at an increased risk to engage in health compromising behavior with subsequent pregnancies. The thematic findings of this study aligned with the theory of the HBM, while literature comparisons were varied. Differences in the literature may be explained by the participants included in this study, based upon their adherent behavior and positive health promoting action in seeking and utilizing prenatal care.

In each thematic finding of this study, the prompts for behavior change, whether risk or susceptibility perception, cue to action, or perceived benefit, were significant to motivate adherence, aligning with the HBM. Previous research was based upon attempting to understand causations for non-adherence. This research, in accordance with the HBM, sought to examine the positive motivating factors of care among adherent multiparous women, and to understand how they perceive the value or significance of care. Limitations of the study included the homogeneity of the participants who presented during the 11 weeks of data collection. The exclusion criteria of missed or spontaneous abortion limited the researcher from obtaining a more diverse sample population. All of the women in this study had M-F attachment regardless of marital status, employment, insurance type, gravida/para status, and age. M-F attachment was an identified cue to action, aligning with the HBM as a prompt to seek care. All participants had a history of adherence, and all stated that they had adequate transportation, financial, and social resources, which may have influenced their adherence and their ability to

establish M-F attachment, without the distraction of unmet needs.

The findings of this study are significant in understanding the importance of maternal motivation to value, seek, and utilize prenatal care. The HBM explains and predicts health promotion as a motivated behavior following a cue to action. Maternal patients with an established M-F attachment demonstrated the increased likelihood of utilizing prenatal care services, acting upon a cue to action. The other themes identified in this study stemmed from M-F attachment in meeting personal and individual patient needs, recognizing the importance of reassurance, building a trusting relationship with maternal patients, and encouraging positive self-directed behaviors. According to the HBM, risk perception, cues to action, and perceived benefits of care are pivotal to health promoting behavior. Prenatal care presents as an opportunity to support maternal needs, and to strengthen M-F attachment. By recognizing and identifying patients who may be at risk for nonadherence, healthcare professionals may initiate and direct action to facilitate and support the bond of M-F attachment.

Additional research should be aimed at ways to identify and address factors that impede M-F attachment, potentially impacting maternal adherence rates. Leadership action to create practice change, aimed at facilitating social justice in providing access to healthcare, upholds professional ethics, and provides improved health opportunities for maternal patients and for future generations. Additional research and practice implications are recommended to explore methods to strengthen M-F attachment, and the HBM in predicting health behaviors. Research aimed at practice change is indicated to increase maternal adherence, with the ultimate goal of improved maternal, fetal, and delivery outcomes.

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**Appendix A**  
**IRB Application**

**February 5, 2016**  
Susan Gustafson  
St. John Fisher College

**File No: 3510-121715-04**

Dear Ms. Gustafson:

Thank you for submitting your research IR proposal to the Institutional Review Board.

I am pleased to inform you that the Board has approved your Full Review project, "Perceptions of Significance Regarding Prenatal Care among Multiparous Patients". The Board considers your project adequate to protect the rights and welfare of human subjects as well as meeting the standards for informed consent.

As principal investigator, you are responsible for promptly reporting (in writing), through your department head, the following:

- The location where the signed consent forms will be kept on file for a period of three years.
- Progress reports of the research will be sent to the Board annually. If the research is not concluded within a year's time, you will need to petition the Board for a one-year renewal.
- Any injuries to human subjects.
- Any unanticipated problems that involve risks to the human research subjects or others.
- Changes in a research activity.
- Changes in research during the period for which the Board approval has already been given shall not be initiated by research investigators without the Board review and approval, except where necessary to eliminate apparent immediate hazards to the subject. In such occurrences, the Board is to be notified as soon as possible.

Following federal guidelines, research related records should be maintained in a secure area for three years following the completion of the project at which time they may be destroyed.

On behalf of the Board, I wish you success with your research project.

Should you have any questions about this process or your responsibilities, please contact me at [irb@sjfc.edu](mailto:irb@sjfc.edu).

Sincerely,

*Eileen Lynd-Balta*

Eileen Lynd-Balta, Ph.D.  
Chair, Institutional Review Board

ELB:jdr

## Appendix B

### Data Collection Questions with Rationale Based upon Theory and Research

**1. Tell me what prenatal care visits mean to you.**

Theory: Perception of significance, benefits, barriers, and motivation

Research: Barriers and perception (Heaman et al., 2014)

Care-seeking behavior motivated by perception (Dako-Gryeke et al., 2013)

**2. What are the three most important things you can do for your health and your baby when you are pregnant?**

Theory: Perception of significance (value, importance) and cue to action

Research: Maternal perception (Hamdan et al., 2014; Heaman et al., 2014)

Learning and understanding (Atreja et al., 2005; Tough et al. 2012)

**3. How does your need for care compare to other women in terms of risks or problems?**

Theory: Susceptibility, individual risk perception

Research: Vulnerability (Frohworth et al., 2013; Heaman et al., 2014; Lee et al., 2012)

**4. What do you expect to happen when you come to your prenatal care visits?**

Theory: Expectation

Research: Vulnerability (Frohworth et al., 2013; Hamdan et al., 2014; Heaman et al., 2014; Kumbani et al., 2012)

**5. What do you expect will happen if you miss prenatal care visits?**

Theory: Severity, risk perception

Research: Altered perception and perceived need for care (Heaman et al., 2014; Lee et al., 2012)

Health compromising behavior (Okah & Cai, 2014)

Self-compromising behavior (Hamdan et al., 2014)

Communication (Atreja et al., 2005)

**6. Tell me how your need for prenatal care with previous pregnancies affects the way you feel about prenatal care with this pregnancy.**

Theory: Cue to action

Research: Health care behaviors (Okah & Cai, 2014)

Perception of risk and behavior (Lee et al., 2012)

Decision making influenced by previous pregnancy (Haddrill et al., 2014)

**7. What would make prenatal care visits valuable to you?**

Theory: Benefits, barriers, cues to action, learning and health care needs

Research: Provider attitude and influence (Brighton et al., 2013; Heaman et al., 2014)

Patient satisfaction (Aragon et al., 2013)

Cultural needs (Balaam et al., 2013; Dako-Gryeke et al., 2013)

Learning (Tough et al., 2007)

**8. Is there anything else you would like to tell me?**

## **Appendix C**

### **Site Approval Letter**

July 08, 2015

To Whom It May Concern,

Susan Gustafson has been my employee since 2005, functioning as a nurse manager in my office in Elmira, NY. Susan has been employed by Elmira College since January, 2013, while continuing to work part time in my office. In September, 2014, Susan began her doctoral studies at St. John Fisher College in Executive Leadership. Her commitment to improving maternal adherence to prenatal care has been exemplified in her professional nursing and leadership skills. Susan has completed the online NIH Protecting Human Research Participants Training program (attached).

Susan has indicated to me that she would like to conduct a qualitative research study in my office with one-to-one interviews of multiparous women to gain information on the perceptions of significance regarding prenatal care. I understand that Susan will be conducting her research on-site with patient permission, will assure the patients' confidentiality, and will safe-guard all information obtained to be utilized only for the purpose of adding to the body of existent knowledge. Given my commitment to my patients, research processes, and evidence based practice aimed at improving maternal, fetal, and delivery outcomes, I give my permission for Susan to conduct her research study in my office at the Twin Tier Women's Health Team in Elmira, NY.

Bruce A. Surosky MD, FACOG  
Medical Director/ Owner Twin Tier Women's Health Team, Elmira, NY 14901  
Phone (607) 7343960 Fax (607)7344554



## Appendix D

### Participant Information

Dear Expectant Mother,

January, 2016

You are invited to take part in a study of pregnant women to understand perceptions or thoughts about pregnancy care, and to partially fulfill the researcher's academic requirements for the Doctorate in Executive Leadership program at St. John Fisher College.

- Participation will involve an audiotaped interview of eight questions regarding how you feel about prenatal care.
- The interview will take about 20-30 minutes, no longer than 60 minutes.
- Information will be collected from your chart regarding the number of times you have been pregnant and delivered, your age, education, your employment, your race, if you have social, financial, and transportation support, insurance, and your marital status.
- Participation in this study is voluntary.
- Information collected will be kept confidential; your name will not be recorded. All information will be coded and secured under double lock and key for a period of up to three years, at which time it will be destroyed. Electronic data will be password protected
- If you are asked to participate, you will be asked to give written consent, but you may withdraw at any time without any penalty.
- There are no direct risks or benefits to you or your baby for participation.
- If you agree to participate, you will be given a \$20 gift certificate to Wegmans.
- Whether you accept or decline participation will be kept confidential and your choice to participate or not, will in no way affect your care or treatment as a patient of this practice.
- If needed, I may contact you for more information after the interview.
- If you would like to know the results of this study; I will send it to you.
- Information findings will be grouped with others, not as a single person or individual. If discussing your pregnancy experiences causes any painful thoughts or memories, or if you have pressing health concerns, I will use my professional expertise to make indicated care referrals beyond the scope of this study.

If you would like additional information regarding participation of this study, you may contact Susan Gustafson, RN, MSN at (607) 7351886. The Institutional Review Board (IRB) of St. John Fisher College has reviewed this project. For any concerns regarding this study, please call Jill Rathbun at 585-385-8012. She will direct your call to a member of the IRB at St. John Fisher College. Thank you for your time and consideration.

Susan Gustafson RN, MSN, BSN

Doctoral Candidate

St. John Fisher College

**Appendix E**  
**Participant Consent**  
**St. John Fisher College**  
**INFORMED CONSENT FORM**

Title of study: Perceptions of Significance Regarding Prenatal Care among Multiparous Women

Name(s) of researcher(s): Susan Gustafson, RN, MSN  
Faculty Supervisor: Dr. Dianne Cooney-Miner Phone for future information: 1-585-385 8012

Purpose of study: To understand how pregnant multiparous women perceive the significance of  
\_\_\_\_\_ prenatal (pregnancy) care \_\_\_\_\_

Place of study: Twin Tier Women's Health Team Length of participation: 30 mins  
- 1 hour \_\_\_\_\_

Risks and benefits: The expected risks and benefits of participation in this study are explained below:

\_\_\_\_\_ There are no direct risks or benefits to the participants of this study \_\_\_\_\_

Method for protecting confidentiality/privacy: All information will be kept secured and kept under lock & key in a locked cabinet in a locked office, in a locked building. All electronic data will be password protected. Data will be published in the aggregate; no persons' name or any individual identifiers will be attached to any of the data. All data will be destroyed after three (3) years.

**Your rights:** As a research participant, you have the right to:

1. Have the purpose of the study, and the expected risks and benefits fully explained to you before you choose to participate.
2. Withdraw from participation at any time without penalty.
3. Refuse to answer a particular question without penalty.
4. Be informed of appropriate alternative procedures or courses of treatment, if any, that might be advantageous to you.
5. Be informed of the results of the study.

I have read the above, received a copy of this form, and I agree to participate in the above-named study.

\_\_\_\_\_  
Print name (Participant)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Susan Gustafson, RN, MSN

\_\_\_\_\_  
Print name (Investigator)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

If you have any further questions regarding this study, please contact the researcher listed above. If you experience emotional or physical discomfort due to participation in this study, please contact the Wellness Center at 585.385.8280 for appropriate referrals.

The Institutional Review Board (IRB) of St. John Fisher College has reviewed this project. For any concerns regarding this study and/or if you experience any physical or emotional discomfort, you can contact Jill Rathbun by phone at 585.385.8012 or by email at: [irb@sjfc.edu](mailto:irb@sjfc.edu).

## **Appendix F**

### **Scripted Introduction**

Thank you for agreeing to participate in this research study. I would like to assure you that your agreement to participate or not is completely voluntary and that if you do agree, you may refuse to continue with this interview at any time. There is no penalty for choosing to not participate, and there is no penalty if you decide to not continue. Whether you agree to participate in this study or not, it will not affect or change the care, treatment, or services that you and your baby receive.

Any information you provide to me in this interview will be kept confidential. Your name will not be used, shared, or be directly attached to the information that you provide. There is no direct risk or benefit to you or to your baby for participating. Your time and your information is important and meaningful. I will be audiotaping your responses and taking notes during this interview. I will be giving you a \$20 gift certificate to Wegmans at the end of this interview for your effort. I will be asking you eight questions. Do you have any questions for me before we begin? Do you agree to proceed with the questions?

## **Appendix G**

### **Scripted Closing Statement**

Thank you for participating in this study. Your contributions are valued and important. I wanted to remind you that your information will be kept secured under lock and key for no more than three years, at which time it will be destroyed. Your information will never be shared with your name or personal identifying information. Your name will never appear in the paper, research, or any other format. If you have questions or concerns about participation, you may refer to the handout with contact information. If you would like to see the results of this qualitative study, and you provide a mailing address, I will be happy to share that information with you after the research is completed.

I am grateful for your time and information. While there are no direct risks, and you will not directly benefit from the findings of this research in this pregnancy, your time is valuable and I appreciate your participation. I am giving you this \$20 gift certificate to Wegmans in appreciation for your time. I wish you every happiness with your pregnancy.

## Appendix H

### *Grouping of Themes Aligned to Literature and Theory: Theme 1*

Theme 1	Data Points	Literature Link	Theoretical Link	Similarities/ Differences
<p><i>Individual perception of needs:</i> A motivating factor for adherence</p>	<p>181 (42%)</p>	<p><u>Aragon et al. (2013) US</u> Perception of care Meeting individual needs Focus on trust and patient satisfaction, experience and patient centeredness <u>Baldwin &amp; Phillips (2011) US</u> Patient centering and empowerment <u>Dako-Gyeke et al. (2013) Ghana</u> Care seeking is mediated by individual perception <u>Frohwrith et al. (2013) US</u> Decreased perception of susceptibility guides decision making and behavior that is not self-care directed</p> <p><u>Hamden-Mansour et al. (2014) Jordan</u> Perception of care affects utilization of services <u>Kumbani et al. (2013) Malawala</u> Perception influences utilization of care services <u>Olds et al. (2014) US</u> Individual care increases adherence</p> <p><u>Tanner-Smith &amp; Lipsey (2012) US</u> Meeting needs and supportive mentoring as a method to meeting patient needs was successful in improved adherence rates</p>	<p>Perception of risk and susceptibility (linked)</p> <p>Modifiable variables (varied and individual)</p> <p>Cue to action Benefit (based upon perception of need)</p>	<p><u>Aragon et al., 2013.</u> Similar perception of how needs are met <u>Baldwin &amp; Phillips, 2011</u> Similar-based upon patient need <u>Dako-Gyeke et al. 2013.</u> Similar <u>Frohwrith et al. 2013</u> Similar from Opposite Standpoint- Perception directs behavior Care is sought to meet need <u>Hamden-Mansour et al. 2014</u> Similar- <u>Kumbani et al. 2013</u> Similar <u>Olds et al. 2014</u> Similar- individual needs <u>Tanner-Smith &amp; Lipsey, 2012</u> Similar- Meeting personal needs</p>

## Appendix I

### *Grouping of Themes Aligned to Literature and Theory: Theme 2*

Theme 2	Data Points	Linked Literature	Linked Theory	Similarities/ Differences
Positive adherence motivation: Reassurance and perception of individual risk as a motivating factor in maternal adherence	119 (27.6%)	<p><u>Dako-Gyeke et al. (2013) Ghana</u> Care has spiritual and socio cultural meanings as opposed to reassurance benefit</p> <p><u>Hadrill et al. (2014) UK</u> Nonadherence is related to disbelief and avoidance.</p> <p><u>Hamdan-Mansour et al. (2014) Jordan</u> Understanding and perception increase utilization</p> <p><u>Heaman et. al (2014) Canada</u> Multiparous patients did not feel they needed care</p> <p><u>Lee et al. (2012) US</u> Perception of risk is subjective, based upon history. Inability to perceive level of risk</p> <p><u>Okah &amp; Cai (2014) Japan</u> Multiparous women are more likely to engage in risk taking behavior, including non-adherence to care</p>	<p>Perception of risk and susceptibility (linked)</p> <p>Modifiable variables (varied and individual)</p> <p>Cue to action Benefit (individual need and perception or individual risk)</p>	<p><u>Dako-Gyeke et al. 2013</u> Different-Motivation for care may not be based upon reassurance</p> <p><u>Hadrill et al. 2013</u> Different-The basis of care may be acceptance as opposed to reassurance</p> <p><u>Hamdan-Mansour et al. 2014</u> Similar-Appreciating benefit of care</p> <p><u>Heaman et al. 2014</u> Different-care is reassuring</p> <p><u>Lee et al. 2012</u> Similar and Different-</p> <p><u>Okah &amp; Cai 2014</u> Different-Valued care and adherence</p>

## Appendix J

### *Grouping of Themes Aligned to Literature and Theory: Theme 3*

Theme 3	Data Points	Linked Literature	Linked Theory	Similarities/ Differences
Provider and office interaction with information as a motivating factor	67 (15.5%)	<p><u>Aragon et al. (2013) US</u> Patient centeredness approach increases patient satisfaction and adherence</p> <p><u>Baldwin &amp; Phillips (2011) US</u> Patient centered and supportive care to increase knowledge empowers women to accept responsibility</p> <p><u>Balaam et al. (2013) Europe</u> Healthcare providers are challenged to address patient care related problems</p> <p><u>Brighton et al. (2013) Africa</u> Provider attitude may be a barrier to care</p> <p><u>Heaman et al. (2014) Canada</u> Non adherence is correlated with negative attitudes toward care and dissatisfaction with provider care and treatment</p> <p><u>Olds et al. (2014) US</u> Individualized care support with a nurse increases maternal adherence, and decreases morbidity and mortality</p> <p><u>Sword et al. (2012) Canada</u> Care with clinical and interpersonal processes is essential in patient engagement</p> <p><u>Tanner-Smith &amp; Lipsey (2012) US</u> Supportive mentoring to meet patient needs increases adherence and outcomes</p>	<p>Perception of risk and susceptibility (linked)</p> <p>Modifiable variables (individual and varied)</p> <p>Cue to action (need for interaction and relationship with provider)</p>	<p><u>Aragon et al. 2013</u> Similar patients trust, appreciate personal care</p> <p><u>Baldwin &amp; Phillips 2011</u> Similar- Expressed</p> <p><u>Balaam et al. 2013</u> Similar- by need and expectation</p> <p><u>Brighton et al. 2013</u> Differing</p> <p><u>Heaman et al. 2014</u> Different_ Dissatisfaction office change</p> <p><u>Olds et al. 2014</u> Similar personalized care met individual needs</p> <p><u>Sword et al. 2012</u> Similar Engagement with staff is valued</p> <p><u>Tanner-Smith et al. 2012</u> Similar- needs assessment and supportive care</p>

## Appendix K

### *Grouping of Themes Aligned to Literature and Theory: Theme 4*

Theme 4	Data Points	Linked Literature	Linked Theory	Similarities/ Differences
Individual self-directed health behaviors	37 (8.6%)	<p><u>Aragon et al. (2013) US</u> Addressing patient care needs may increase self-care behavior of adherence</p> <p><u>Haddrill et al. (2014) UK</u> Decision making guides future attitudes, influenced by previous pregnancy, and the perceived value of care <u>Lee et al. (2012)</u> Risk perception is an instrument to initiate patient self-care <u>Olds et al. (2014) US</u> Support influences behavior</p> <p><u>Prathima (2014) India</u> Self-care is compromised in pregnancy</p> <p><u>Schaffer &amp; Mbibi (2014) US</u> Support is effective in decision making</p> <p><u>Tough et al. 2007 Canada</u> Non-adherence is related to individual behaviors and decision making</p>	<p>Perception of risk and susceptibility (linked)</p> <p>Modifiable variables (individual and varied)</p> <p>Cue to action Benefit (pregnancy as a cue to action for directing health promoting behaviors)</p>	<p><u>Aragon et al. 2013</u> Similar and different Addressing patient needs increases varied self-care behaviors (advice and guidance) Patients value adherence</p> <p><u>Haddrill et al. 2014</u> Similar self-directed care in decision making, influencing future behavior <u>Lee et al. 2012</u> Similar- self-care behavior change is guided by perceived risk <u>Prathima, 2014</u> Different – participants initiate self-care behavior in pregnancy <u>Schaffer &amp; Mbibi 2014</u> Similar-advice guidance <u>Tough et al. 2007</u> Similar – adherence linked with individual behavior in decision making</p>



## Appendix L

### *Grouping of Themes Aligned to Literature and Theory: Theme 5*

Theme 5	Data Points	Linked Literature	Linked Theory	Similarities/ Differences
Negative Motivation for adherence	27 (6.3%)	<p><u>Dako-Gyeke et al. (2013)</u> The decision-making process regarding when to seek traditional versus non-traditional care, was dependent upon how the participants perceived the nature and type of threat to the pregnancy (Dako-Gyeke et al., 2013).</p> <p><u>Hamden-Mansour (2014)</u> <u>Jordan</u> patients believed that power to affect outcomes was most significantly controlled by providers (Locus of Control)</p> <p><u>Lee et al. (2012) US</u> Risk is not accurately perceived</p> <p><u>Okah &amp; Cai (2014) Japan</u> Multiparous patients are at increased risk to engage in health compromising behaviors with subsequent pregnancies</p>	<p>Perception of risk and susceptibility (linked)</p> <p>Modifiable variables (varied and individual)</p> <p>Cue to action Benefit (fear, concern, risk of the unknown as a motivating factor in seeking care)</p>	<p><u>Dako-Gyeke et al. 2013</u> Differing-all sought care regardless of threat Similar-fear of unknown risk was a factor</p> <p><u>Hamden-Mansour et al. 2014</u> Differing adherence due to fear of unknown wrong, risk, or complication</p> <p><u>Lee et al. 2012</u> Differing-Risk was not a motivator Similar-Patients were unsure of their level of risk</p> <p><u>Okah &amp; Cai 2014</u> Differing, patients were adherence and initiated self-care behaviors with less risk</p>