TONEY, TABITHA D., Ph.D. The Experience of Antenatal Hospitalization among High-Risk Pregnant Women. (2019).
Directed by Dr. Lynne P. Lewallen 224 pp.

Pregnancy is a multi-dimensional experience that affects a woman physically, psychologically, and socially, in which hopes and expectations for the pregnancy and becoming a mother are developed. However, when women experience a high-risk pregnancy, the hopes of a rewarding experience are shattered. These women could have difficulty with the mothering role after birth and their mental health or parenting ability could be impacted. If there are major discrepancies between maternal expectations and actual experiences, taking on the maternal role could be negatively impacted (Rubin, 1984).

The purpose of the study was to describe the high-risk pregnant woman's experience of antepartum hospitalization. Specific aims for the study were to discover how the hospitalized high-risk pregnant woman felt about her unborn baby and to describe how the hospitalized high-risk pregnant woman cognitively constructed her transition to becoming a mother. The study was conducted using a hermeneutic, phenomenological approach. Rubin's (1984) work on maternal identity was used to guide the study. Additionally, the philosophy of Merleau-Ponty (1945/2012) was used to understand the unique lived experiences of hospitalized high-risk pregnant women. Thirteen hospitalized, high-risk pregnant women, with an average age of 27.5 years (range: 20-38), were interviewed for the study. The average number of weeks gestation of the participants was 28.19 (range: 22 6/7-33 5/7 weeks gestation).

Thematic analysis of high-risk pregnant women's hospital experiences yielded the overarching theme, Doing Whatever It Takes, and four additional themes: Flooding Emotions from Hospitalization, Struggling with Uncertainty and Changing Expectations, Dealing with Hospitalization, and Anticipating Motherhood. Doing Whatever It Takes was expressed as a prominent way of dealing with the hospitalization and the unanticipated changes in their pregnancies, with many expressing the will to fight for their babies no matter the difficulties they faced. The initial response to the hospitalization caused a wide range of negative emotions, with some women grieving the loss of the idealized pregnancy, while others grieved missing out on the events of pregnancy (e.g., baby showers and preparing the nursery). Despite these difficulties, all women considered the hospital as a safe place for them, knowing they and their babies were close to care, if needed. Various ways of Dealing with the Hospitalization included holding on to hope, keeping a positive attitude, relying upon God, and feeling supported. Overall, most women expressed excitement for their babies and becoming a mother, with some already seeing themselves as mothers. Many women described their babies in the present tense and expressed their thoughts of what their babies would be like in the future (e.g., size and personality). However, not all women saw themselves as mothers "until the baby was born" or "hoping it would develop (being mother) after the baby was born." Some women described the relationship with their babies as close already, while a few stated they did not have a relationship with the baby yet, but expected it to form once the baby arrived.

Three new findings emerged from this study. First, the developing relationship between a mother and baby was described as growing stronger as the pregnancy continued. Second, the use of technology to stay connected to family and friends during hospitalization was reported as being helpful. Finally, previous studies reported deleterious physical effects of bed rest; whereas in this study, women described emotional effects, rather than physical effects.

THE EXPERIENCE OF ANTENATAL HOSPITALIZATION AMONG HIGH-RISK PREGNANT WOMEN

by

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A Dissertation Submitted to
the Faculty of The Graduate School at
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

Greensboro
2019

Approved by

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To my Lord and Savior, Jesus Christ, without whom my educational journey would not have been possible.

To my wonderful husband Jonathan, whom has given his unrelenting support throughout this journey. Thank you for your patience, support, and belief in me.

To my children, Justin and Caroline, whom have encouraged me every step of the way.

APPROVAL PAGE

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ACKNOWLEDGMENTS

I would like to express appreciation to my dissertation committee: Dr. Lynne P. Lewallen, Dr. Denise Côté-Arsenault, Dr. Esther M. Leerkes, and Dr. Gloria Walters. To my committee chair, Dr. Lewallen, thank you for your patience, expertise, and support through my dissertation journey. You are a remarkable nurse educator. Dr. Côté-Arsenault, I thank you for your guidance, expertise, and for challenging me to think like a true qualitative researcher. Dr. Leerkes, thank you for your commitment and dedication to helping me complete this project. Dr. Walters, thank you for being welcoming and eager to work with me on this project.

I would like to thank Dr. Tamra Shea and Dr. Murtis Worth for their friendship throughout this journey. Our times together will never be forgotten and you will always be my phuddies

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CHAPTER I

INTRODUCTION

Pregnancy is a life-altering, multidimensional experience that many women will encounter in their lifetime. The duration of pregnancy allows women an extended amount of time to develop hopes and aspirations for the pregnancy, childbirth, and becoming a mother to the baby. However, many women can enter pregnancy with preconceived notions of what motherhood will be like, suggesting that expectations can begin earlier than pregnancy onset. In fact, hopes and aspirations of becoming a mother can begin during childhood when little girls begin playing house. Many women enter the later stages of pregnancy with confident expectations of the experience (Ayers & Pickering, 2005). Some women's pregnancy expectations will mirror their actual experience, while others will not due to complications that arise during high-risk pregnancies, shattering the hopes of a rewarding pregnancy experience (MacDonald & Jonas-Simpson, 2009). The pregnancy experience can be further impacted when women are hospitalized for their pregnancy complications. Women whose expectations are not met could have difficulty with the mothering role after birth, and this can impact their mental health or how they parent their children. Accumulated knowledge surrounding the maternal role suggests that when there are major discrepancies between maternal expectations and actual experiences, taking on the maternal role may be negatively impacted (Emmanuel, Creedy, St. John, & Brown, 2011; Mu, 2004; Rubin, 1984).

High-Risk Pregnancy Explained

High-risk pregnancy complications occur in approximately 370,000 to 500,000 (6-8%) of all pregnancies each year (CDC, 2015). A pregnancy can be deemed high-risk for a variety of reasons, including, but not limited to: medical conditions that existed prior to pregnancy (e.g., diabetes and hypertension), medical conditions that develop during pregnancy (e.g., gestational diabetes and preeclampsia), problems experienced in a previous pregnancy (e.g., miscarriage and fetal demise), problems with the fetus in the current pregnancy (e.g., fetal growth restriction, heart anomalies, chromosomal anomalies, and placental problems), preterm labor, premature rupture of membranes, and multiple gestation (National Institute of Health (NIH), 2013). These complications can be serious and require special care, including hospitalization, to improve the outcomes of the pregnancy.

Most pregnant women find the diagnosis of a high-risk pregnancy stressful with high levels of uncertainty because of the unknown outcome of the pregnancy (Giurgescu, Penckofer, Maurer, & Bryant, 2006; Kemp & Page, 1987; Price et al., 2007). This stressful and uncertain experience can be detrimental to a woman's physical, psychological, and/or social status. Physically, a woman's health status could be negatively impacted because of the pregnancy, such as development of hypertension and/or type II diabetes beyond the pregnancy (Maloni, 2010). Psychologically, a woman might develop a change in mood and have negative thoughts or actions towards the baby (Schroeder, 1996). Also, a high-risk pregnancy is known to adversely affect a pregnant woman's self-esteem, leaving them questioning if they are to blame for the diagnosis

(Mercer, Ferketich, DeJoseph, May, & Sollid, 1988; Schroeder, 1996). A woman's social world can be disrupted due to a high-risk pregnancy, leading to altered family routines and social isolation (Mercer et al., 1988; Clauson, 1996; Heaman, 1992; Sittner, DeFrain, & Hudson, 2005; Leichtentritt, Blumenthal, Elyassi, & Rotmensch, 2005; Schroeder, 1996). These potential changes can be heightened in women who require bed rest, at home or in the hospital setting, for their high-risk condition (Schroeder, 1996; Stainton, McNeil, & Harvey, 1992).

Antepartum Bed Rest and Hospitalization

Antepartum bed rest is used to treat many high-risk pregnancy conditions and is prescribed for approximately 700,000 to 1 million women each year. Bed rest can range from a few days to months of the pregnancy depending upon the high-risk condition (Maloni, 2010; Maloni, 2011). The overall goal of bed rest is to reach fetal maturity and to have as healthy a baby as possible, without risking the health of the mother (Markovic, Manderson, Schaper, & Brennecke, 2006). In some instances, women may be hospitalized for bed rest to provide intensive monitoring of the mother and baby to ensure effective management of their condition (Kent, Yazbek, Heyns, & Coetzee, 2015). Hospitalized bed rest can impose many constraints on the mother, such as her ability to work or care for other children at home and separation from her family and/or support system (Maloni, 2010).

Bed rest can be used for many purposes in a high-risk pregnancy, such as to reduce the pressure of the baby on the cervix, increase the blood flow to the placenta (allowing increased oxygen and nutrition to the baby), decrease swelling, and improve

blood pressure (Johns, 2006). However, many healthcare experts disagree about the benefits of bed rest and studies have shown complications that can occur with extended bed rest during pregnancy (e.g., anxiety, depression, muscle atrophy, possible bone loss, increased risk of deep vein thrombosis, and cardiovascular deconditioning) (Maloni & Kutil, 2000; Maloni & Schneider, 2002; Maloni, 2010),

Given this controversy, new recommendations from the American College of Obstetricians and Gynecologists (ACOG) have been issued (McCall, Grimes, & Lylerly, 2013). Home bed rest or hospitalized bed rest is currently only recommended for acute and/or serious complications, including, but not limited to, active preterm labor with cervical change, incompetent cervix with cervical change, and extreme (unstable) hypertension (based on individual provider diagnosis) (ACOG, 2012). In other pregnancy complications (e.g., preterm labor without cervical change, premature rupture of membranes, and stable hypertension), bed rest has not been found to improve the pregnancy complication (McCall et al., 2013). However, despite the ACOG recommendations and lack of evidence that it improves obstetrical outcomes, bed rest remains one of the most commonly prescribed treatments to improve the outcomes in high-risk pregnancies (Biggio, 2013; McCall et al., 2013).

Degrees of bed rest imposed during pregnancy can vary depending upon the woman and her healthcare provider. However, most bed rest regimens include one or more of the following: frequent rest periods during the day, limited bed rest, bed rest with bathroom privileges, or complete bed rest (Johns, 2006). Mobility limitations imposed with limited or modified bed rest can vary, with some women being allowed to work

part-time, while others may not be allowed to work and must have extended periods of rest throughout the day (Johns, 2006). A woman experiencing limited bed rest can usually eat meals with her family, use the bathroom as needed, and take showers daily. Complete bed rest is often defined as only getting out of bed for bathroom privileges, or in some cases bathroom privileges are forbidden (Johns, 2006).

Background and Significance

The literature provides ample evidence regarding the impact of antenatal hospitalization on the expectant mother. Hospitalization for a pregnancy complication has been found to be associated with increased levels of stress, anxiety, and depression (Clauson, 1996; Gupton, Heaman, & Ashcroft, 1997; Heaman, 1992; Heaman & Gupton, 1998). Stress during pregnancy has been reported most frequently in women hospitalized for a high-risk complication, as compared to high-risk women at home and women without pregnancy complications, and can have a profound impact on these women, affecting physical and/or psychological health (Maloni, 2010; Mercer & Ferketich, 1988). Sources of stress reported during the hospitalized experience include separation from and concerns for family (Clauson, 1996), loss of control over the situation (Rubarth, Schoening, Cosimano, & Sandhurst, 2012), and uncertainty about the outcome of the pregnancy (Maloni, 2010).

Emotional and Psychosocial Concepts

Women requiring hospitalization during a high-risk pregnancy are faced with varying levels of stress (Mercer & Ferketich, 1988). Stress is a complex concept with many dimensions, and is elicited in response to daily problems or life events (Rice,

2000). Stress can impact the pregnant woman physically, psychologically, or both. Physically, stress can cause an increase in cardiovascular response (i.e., elevated heart rate and blood pressure) and/or an increase in stress hormones (i.e., adrenaline, cortisol, and norepinephrine). Psychologically, a stress response can elicit feelings of anxiety and depression (Rice, 2000). Stress response during pregnancy and throughout life can result in development of broader coping strategies, or on the contrary, the inability to cope, causing reduced functioning (Rice, 2000; Sittner et al., 2005). The inability to cope can be manifested by increased levels of anxiety and depression, which can affect the number of weeks gestation when the woman gives birth (Mulder et al., 2002). Maternal stress hormones and feelings of anxiety can interfere with placental blood flow, potentially causing preterm birth (Mulder et al., 2002; Texeira, Fisk, & Glover, 1999). Furthermore, constant or prolonged stress can contribute to long-term problems for the heart and blood vessels. The elevated levels of stress hormones and the ongoing increase in heart rate can take a toll on the body (American Psychological Association, 2017). By understanding a pregnant woman's response to a stressful situation, nurses can identify and possibly intervene if a woman is using unhealthy coping strategies that may put the baby at risk (Côté-Arsenault, 2007).

Anxiety during Hospitalization

Reports of anxiety during the hospitalized experience are prevalent in the high-risk pregnancy literature (Denis, Michaux, & Callahan, 2012; Gupton et al., 1997; Heaman, 1992; Heaman & Gupton, 1998; Leichtentritt et al., 2005; Maloni, 2010; Mercer et al., 1988; Rubarth et al., 2012; Stainton, Lohan, Woodhart, 2005). There is agreement

that women with pregnancy complications experience more anxiety than those who have uncomplicated pregnancies (Denis et al., 2012), including women who are prescribed home or hospital bed rest. In a study comparing women on hospitalized bed rest to women on home bed rest, Stainton et al. (2005) found that all women expressed anxiety regarding the progression of their pregnancies and the survival of their babies. However, a few studies have reported that the longer a woman is hospitalized and as the high-risk condition deteriorates, the anxiety over the unknown outcome continues to build (Heaman, 1992; Heaman & Gupton, 1998).

Difficulty in coping with anxiety has been reported in a few studies (Denis et al., 2012; Heaman, 1992; Heaman & Gupton, 1998; Zadeh, Khajehei, Sharif, & Hadzic, 2012). Women reported coping more easily with the physical restrictions of prescribed bed rest than with the feelings of anxiety (Denis et al., 2012). Those who relied upon avoidance coping strategies during the hospitalization versus those who used effective coping strategies (e.g., optimistic attitude, accepting the situation, setting goals, and use of prayer) reported greater anxiety levels (Heaman, 1992; Heaman & Gupton, 1998). Research indicates that women who are unable to manage anxiety in the antepartum period can carry the feelings of anxiety over into the postpartum period. Zadeh et al. (2012) assessed anxiety levels in postpartum women and found that 92.5% of women in the study who experienced a high-risk pregnancy reported severe postpartum anxiety, which could lead to postpartum depression, if not treated properly.

Depression Symptoms during Hospitalization

Women with high-risk pregnancies may already face anxiety and depression symptoms prior to hospitalization (Maloni, 2010). Admission to the hospital will likely increase these conditions with hospitalized women reporting predominant feelings of anxiety, loneliness, and depression, compared to those on home bed rest (Dagklis et al., 2016; Heaman, 1992; Heaman & Gupton, 1998). Dagklis et al. (2016) reported a depression prevalence rate of 28% among women who were admitted to an antenatal unit for a pregnancy complication with antenatal depression becoming more prevalent as gestation increases. Therefore, new recommendations from the American College of Obstetricians and Gynecologists (ACOG) (2012) suggest screening for anxiety and depression at least once during the perinatal period.

Negative Emotions

Hospitalization for a high-risk pregnancy condition is an emotional experience for many women that requires time to process and accept (Kent et al., 2015). Negative emotions, such as sadness, fear, grief, helplessness, hopelessness, and at times, ambivalence (Leichtentritt et al., 2005; Rubarth et al., 2012) have been reported. Some women can experience times of utter despair and sadness during the hospitalization (Kent et al., 2015), with constant fear of losing their unborn baby, giving birth early, and the unknown health of the baby (Leichtentritt et al., 2005; Rubarth et al., 2012). Fear is often experienced when the condition of the baby or mother becomes unstable as evidenced by contractions, bleeding, headaches, or leaking of amniotic fluid (Maloni & Kutil, 2000).

Grief is a common response when the wished for healthy pregnancy is now plagued with complications and bed rest, and is the same process of grief that a person experiences when dealing with a death of a loved one (Johns, 2006). Hospitalized bed rest can intensify these feelings of grief. The grieving process incorporates two modes of coping: loss orientation (adjusting to a loss) and restoration orientation (how to move on once the loss occurs) and are normal for the mother experiencing the loss of the idea of a healthy pregnancy (Johns, 2006; Stroebe & Schut, 2001). Anticipatory grief can occur in some individuals because they cannot predict the outcome of the pregnancy or if their baby will survive (O'Leary, 2009). Women who have experienced a previous pregnancy loss can also experience periods of intense grief in subsequent pregnancies (Côté-Arsenault & Denney-Koelsch, 2011).

Hospitalized women may feel helpless and hopeless which can lead to insecurities about the likelihood of loss and no hope for the continuation of the pregnancy (Kent et al., 2015). Some women even described the hospitalized experience as an "emotional roller coaster" (Rubarth et al., 2012, p. 401). In some instances, women can feel ambivalence towards the pregnancy and in one study feelings of ambivalence towards the unborn baby were found (Leichtentritt et al., 2005). The women loved their unborn baby and wanted to deliver as soon as possible, but still worried about the outcome and at the same time, resented the high-risk condition associated with the pregnancy (Leichtentritt et al., 2005).

Physiological Effects of Hospitalized Bed Rest

The experience of antenatal hospitalization has also been found to have physiologic side effects (Maloni, 2010; Maloni & Kutil, 2000) such as sleep disturbances and loss of stamina (Maloni, 2010). The effects of bed rest also affect other body systems such as problems with digestion, constipation, physical aches and pains, sore joints, mobility issues, weight loss, and loss of muscle tone (Gupton et al., 1997; Rubarth et al., 2012; Stainton et al., 2005). More serious physiological side effects such as muscle atrophy, possible bone loss, and cardiovascular deconditioning can also occur (Maloni & Kutil, 2000).

Coping with the Hospitalization

Women use a variety of different coping strategies to help with the experience of hospitalization such as keeping a positive attitude, accepting the situation, setting goals, and knowing that bed rest can help the baby (Clauson, 1996; Gupton et al., 1997; Heaman, 1992; Maloni & Kutil, 2000; Stainton et al., 2005). Women of faith use prayer and find reading the Bible helpful during their hospital stay (Giurgescu et al., 2006; Gupton et al., 1997; Sittner et al., 2005). Price et al. (2007) recognized that reliance on their faith was key to the health and healing of the high-risk pregnant woman. Study participants identified spiritual aspects that empowered them and their family to cope with the stress of their high-risk pregnancy experience, which they believed improved the pregnancy outcomes (Price et al., 2007). Gupton et al. (1997) found listening to the fetal heart rate, having reassuring ultrasounds, learning more about their conditions and the

possible outcome helped some women cope with the situation more effectively (Gupton et al., 1997; Stainton et al., 1992).

Social support is another common coping mechanism used among high-risk pregnant women (Gupton et al., 1997; Giurgescu et al., 2006; Kent et al., 2015; Lederman et al., 2013; Rubarth et al., 2012). Social support throughout the hospitalization from significant others, family, friends, and healthcare providers contributes important social contact (Gupton et al., 1997). Giurgescu et al. (2006) found that women with high levels of social support reported low levels of stress and uncertainty. Healthcare providers can also be a source of social support and have been found to help high-risk pregnant women with coping (Giurgescu et al., 2006; Gupton et al., 1997; Kent et al., 2015; Rubarth et al., 2012; Stainton et al., 1992). Women emphasized the importance of healthcare providers being kind, taking time to answer questions, and providing information regarding their conditions as a source of social support for them (Gupton et al., 1997).

Prenatal Attachment in a High-Risk Pregnancy

Prenatal attachment is a complex, dynamic relationship that develops between a pregnant woman and her fetus during pregnancy. Prenatal attachment was first referred to as the process of "binding-in" during pregnancy and was believed to play a significant part of developing a maternal identity (Rubin, 1976). The most frequently cited definition of prenatal attachment is "the extent to which women engage in behaviors that represent an affiliation and interaction with their unborn child" (Cranley, 1981, p. 282). The relationship between a mother and newborn is tremendously vital to the development

of the child, and this relationship begins during pregnancy when a woman begins fantasizing about and interacting with her unborn baby (Cranley, 1981; Rubin, 1984).

Prenatal attachment can manifest itself in the mother's behavior which validates her commitment to the unborn child, such as eating healthy foods, avoiding harmful substances, and/or home preparation for the upcoming delivery of the infant (Laxton-Kane & Slade, 2002; White, McCorry, Scott-Heyes, Dempster, & Manderson, 2008). Furthermore, attachment can include strong affectionate feelings towards the unborn baby. Prenatal attachment is influenced by the mother's week of gestation, perception of fetal movement, and if a pregnancy was planned or unplanned; suggesting that as the pregnancy continues, attachment towards the fetus increases (Laxton-Kane & Slade, 2002). However, this may not be the case in all pregnancies.

Researchers have investigated prenatal attachment among high-risk pregnant women and suggest that the attachment process can be affected and possibly weakened by an extended hospital stay (Condon & Corkindale, 1997; White et al., 2008). A link between attachment and depression scores may exist among some high-risk pregnant women. McFarland et al. (2011) compared maternal-fetal attachment scores between low-risk pregnant women who were suffering from Major Depressive Disorder and those women who were not depressed. In these low-risk women a significant relationship was found between depression and maternal-fetal attachment scores ($\beta = -0.006$, $SE = 0.003$, $p < 0.02$). This study was the first to find that depression during pregnancy negatively impacts maternal-fetal attachment. Pisoni et al. (2016) investigated the links between prenatal attachment and factors such as maternal depression, anxiety, and social support

among two groups: couples with a high-risk of premature delivery and couples with a low-risk of premature delivery. Depression and anxiety were found to be higher among the high-risk couples. Also, maternal and paternal attachment was found to be significantly lower in the high-risk group, compared to the low-risk group (Pisoni et al., 2016). Brandon and team (2008) reported that hospitalized women who reported high attachment scores reported fewer symptoms of depression. Understanding prenatal attachment and the developing maternal identity in women who are hospitalized for a high-risk condition is important because of its potential effect on the mother's well-being, engagement in certain behaviors that could impact the health of the baby, and the development of attachment to the infant in the postpartum period (Laxton-Kane & Slade, 2002; Lederman et al., 2013).

Maternal Identity in a High-Risk Pregnancy

The developing maternal identity is a personal and specific relationship between a mother and her child and is an important aspect of pregnancy, in which the pregnant woman begins to perceive her new life as a mother. Therefore, a maternal identity begins anew with each pregnancy (Rubin, 1984). A woman prepares for the role by visualizing herself as a mother, learning about the maternal role, and attaining skills for parenting (Rubin, 1984). If a mother experiences complications during the pregnancy, it could hinder or prolong the development of the maternal identity. Additionally, maternal complications during pregnancy may affect the woman's self-esteem and confidence in becoming a mother, especially in those hospitalized for a high-risk condition. However, few studies have investigated the developing maternal identity among hospitalized high-

risk pregnant women to fully understand the impact of the event (Lederman et al., 2013; Markovic et al., 2006; Mu, 2004).

Rationale for the Study

Over the last 30 years, multiple aspects of the experience of antenatal hospitalization in high-risk pregnant women with a variety of diagnoses have been well documented in the literature. However, many of these studies are 16 years old or older, leaving a gap in current knowledge applicable to today's hospitalized high-risk pregnant women. Due to the constant changes in pregnancy care, some research findings may no longer be relevant or applicable to the experience of hospitalization among high-risk pregnant women today. Furthermore, the characteristics of the high-risk pregnancy population have changed, warranting a reexamination of the hospitalized experience.

Since the 1990s, there has been an increase in the number of women facing complications during pregnancy. Pregnancy experts attribute the rise in high-risk pregnancy complications to advanced maternal age when having children, the rise in assisted reproductive technology treatments, as well as women entering pregnancy with obesity, diabetes, and/or high blood pressure (CDC, 2015). For example, the rate of hypertensive disorders in pregnancy has significantly increased over the past 20 years (57.3 per 1,000 births in 1994 to 86.5 per 1,000 births in 2013), causing more women to encounter complications during pregnancy that require intensive monitoring (CDC, 2016a). More women aged 35 to 44 are waiting to start a family, increasing the number of women in this age group having their first child from 2.3 per 1,000 births to 13.3 per 1,000 births in the past four decades (CDC, 2014). These women are at a higher risk of

encountering health complications during pregnancy than women who are younger, due to their age. Additionally, the number of women having assisted reproductive technology (ART) procedures has risen steadily since the 1980s. The rise in ART procedures has allowed more women who have had difficulty conceiving to become pregnant (Bauer, Victorson, Rosenbloom, Barocas, & Silver, 2010). Inherent in these pregnancies is the risk of higher-order multiples and advanced maternal age, potentially increasing the number of women encountering complications during pregnancy that require hospitalization and increasing the risk of premature birth (Bauer et al., 2010; Thoma, Boulet, Martin, & Kissin, 2014).

Because the demographic profile of high-risk pregnant women has changed, there is a need to reexamine the hospitalized experience (March of Dimes, 2016). By reexamining the high-risk pregnant woman's experience, it will provide a current picture of the hospitalized pregnant woman and a better understanding of how the experience may impact her mothering of this baby. It is important for nurses to understand the impact the hospitalization can have on these high-risk women. Nurses caring for these women could then anticipate negative triggers that may result from the pregnancy complication and/or hospitalization, provide meaningful support (e.g., physical, emotional, and social support) to these women, and intervene (e.g., with counseling) when it is necessary (Meyers, 2010).

Theoretical Framework

The theoretical framework for this study comes out of the work of Rubin (1975, 1984), who described the processes that occur in the pregnant woman's transition to

becoming a mother (maternal role attainment). Becoming a mother is defined by Rubin as a process of binding-in (i.e., prenatal attachment) and as a process of maternal role identity (e.g., seeing herself as mother and being comfortable in the role). According to Rubin (1984), the foundation of the maternal identity exists in the concepts of I, as mother, and you, as baby, which influence one another.

A maternal identity is formed through maternal behaviors, such as replication (mimicry and role play), fantasy, and dedifferentiation (introjection-projection-rejection) by the woman and repeated interactions with the baby during pregnancy and the postpartum period (Rubin, 1984). Mimicry allows the woman to take on characteristics of the mothering role and may include behaviors such as dress, gestures, or speech. Role play allows the woman to act out in ways that she expects the role to be. Fantasy involves dreaming or wishing about what it is like to be a mother. Dedifferentiation (introjection-projection-rejection) permits the woman to identify with other mothers and determine if she will accept or reject the other mothers' behavior.

Maternal tasks are also undertaken during pregnancy to achieve a maternal identity. Rubin (1984) identified four maternal tasks necessary in developing a maternal identity. The first task is seeking to ensure safe passage for the mother and baby. This task develops during pregnancy when the mother seeks protection for her child from the actual or potential dangers in the world by gaining knowledge of what to expect (possible and probable dangers) and how to cope with the potential dangers (Rubin, 1984). The second maternal task is others accepting the baby and accepting her as the mother. The family accepting the child motivates a mother to guide her child in learning the mother's

culture and the morals and values that are socially acceptable to those around her. The third task is binding-in or attaching to her unborn baby. Binding-in develops into the interpersonal relationship that the woman as a meaningful adult has with the child. The final task is giving of herself as mother. In giving of oneself, the mother recognizes the child is valued and proceeds to give of her time and energy to nurture and sustain the child. Although the tasks begin to occur during pregnancy, they are continued following delivery as the woman learns to be a mother to her baby and takes on her identity as a mother. However, if something interrupts the prenatal development of the maternal role, this could also disrupt the postnatal development. It is important to study hospitalized pregnant women with this in mind.

Purpose and Research Questions

The purpose of the study was to describe the high-risk pregnant woman's experience of antepartum hospitalization. Specific aims for the study were to:

- Discover how the hospitalized high-risk pregnant woman felt about her unborn baby
- Describe how the hospitalized high-risk pregnant woman cognitively constructed her transition to becoming a mother

Assumptions

Several assumptions were made in the development of this study. They are:

1. Pregnancy is a time of transition for the pregnant woman.
2. Antepartum hospitalization can compound the situational crisis of high-risk pregnancy.

3. Pregnant women are willing to discuss their experience of hospitalization.
4. Pregnant women can verbalize their experiences and communicate effectively.
5. Pregnant women are able to reflect upon their relationship with their unborn child.
6. There is an underlying process in the development of the relationship between a woman and her unborn child.
7. Maternal identity develops concurrently with prenatal attachment and each depends on the other (Mercer & Ferketich, 1995; Rubin, 1977).

Conclusion

The experience of hospitalization during a high-risk pregnancy can be a stressful event in a woman's life. Furthermore, the experience could have a significant and potentially disruptive impact on the psychological and social aspects of a woman's life (Rubarth et al., 2012). Pregnancy is a perfect time to educate and counsel women who could be vulnerable to negative postnatal attitudes, which could impact the proper development of a maternal identity and attachment to the infant. Therefore, more research is needed in the area of hospitalization during a high-risk pregnancy to understand its impact on pregnant women, so nurses can provide effective prenatal care (education and counsel). This study helped fill the gap in current knowledge about the hospitalization experience of today's high-risk pregnant women.

CHAPTER II

REVIEW OF THE LITERATURE

Some women face complications during pregnancy that require bed rest in the hospital setting. This experience can be stressful and life-altering. Within this chapter, relevant literature will be reviewed including Rubin's (1984) work on maternal identity and how it will guide the proposed study. Then, the concept of prenatal attachment and factors affecting attachment will be explored, followed by a review of research literature on high-risk pregnancy and hospitalization. Finally, the current state of the science in research on high-risk women hospitalized during pregnancy will be discussed.

Theoretical Framework

Rubin's work on maternal identity (1984) informed the current study by serving as a framework to assist in describing the processes that occur during pregnancy as a mother begins to attach to her baby and begins to display mothering behaviors. A description of the theory and studies that have used the theory will be presented.

Historical Context of Rubin's Work

Prior to Rubin's work, little was known about maternal behaviors and relationships. Rubin's work was groundbreaking for pregnancy research and spanned over two decades (Rubin, 1984). At the time, her work provided nurses and other healthcare providers with a basic understanding of the process of becoming a mother, which had not been previously explored, laying the foundation for subsequent studies of

pregnancy (e.g., maternal behaviors, maternal-child relationships, and maternal identity) (Gay, Edgil, & Douglas, 1988). Since Rubin's work, many aspects of pregnancy care have changed, especially in those women with high-risk pregnancies. For example, due to technological advances in pregnancy care, pregnancy complications are identified earlier than ever before (e.g., genetic testing and ultrasounds) and a larger number of non-pharmacologic and pharmacologic measures exist for the care of high-risk pregnant women (e.g., fetal fibronectin testing, cervical cerclage, medications to manage high-risk conditions, and surgical procedures for mother and baby), making high-risk care more complex. However, the basic principles of Rubin's work (1984) (e.g., maternal tasks and behavior) still remain pertinent in the exploration of maternal behaviors and relationships today and will be described in the following sections.

According to Rubin, maternal identity is a personal and specific relationship between the mother and the child. "There is no carry-over and no transference of a maternal identity from one child to another" (Rubin, 1984, p. 38), therefore, a maternal identity begins to develop anew with each pregnancy. Rubin (1984) suggested a theoretical framework for the processes or tasks that a woman undertakes in her transition to becoming a mother. Although the tasks begin during pregnancy, they are continued following delivery as the woman learns to be a mother to her baby and takes on her identity as mother. The tasks of pregnancy include: 1) safe passage for the mother and baby, 2) acceptance of the baby by others (e.g., significant people in the mother's life) and acceptance of her as the mother to that baby, 3) binding-in to her unborn baby, and 4) giving of oneself (Rubin, 1984).

Maternal Tasks of Pregnancy

Seeking and ensuring safe passage is of great importance to the pregnant woman and begins early in the pregnancy. During this task, a pregnant woman seeks to protect the baby from actual or potential dangers in the external environment (Rubin, 1984). Ensuring safe passage is done primarily by seeking information about what to expect, how to cope with the pregnancy, and through prenatal care. This "data-gathering is continuous and cumulative" (p. 55). During the first trimester, the concern for safety is primarily related to herself, and not the baby, because at this point the mother is unable to feel fetal movement and the appearance of pregnancy is not yet evident. However, this was Rubin's finding given the time period of her research. With technological advances in pregnancy care today, pregnant women now have knowledge and evidence of the baby early on in pregnancy due to the availability of prenatal testing and ultrasound. During the second trimester, the woman becomes more aware of the baby and the focus is on the well-being of the baby. She begins to attach value to the baby and begins to become protective of the baby growing inside her. In the third trimester of pregnancy, the concern for safety is focused on the baby and self without separation. "What endangers one endangers the other" (p. 55). With the task of seeking safe passage, the less control a woman has in protecting herself and the baby, the more vulnerable she may feel.

The acceptance of the baby by others is important to the pregnant woman. The developing maternal identity and completion of the maternal tasks are influenced by the relationship with others, especially the woman's significant other. The family provides care, protection, and support that are necessary for the mother and her baby. Each family

member requires an awareness of the personal sacrifices that will be required for acceptance of the coming baby (Rubin, 1984).

The acceptance of the pregnancy and growing baby is a necessary part of the maternal tasks of pregnancy. However, this alone is not sufficient to develop a relationship with the baby. Rubin (1984) specifies that binding-in and formation of maternal identity "are interdependent coordinates of the same process" (p. 51), with the task of binding-in beginning to develop the interpersonal relationship between the woman and the baby. As long as the baby is thought of as imaginary, the motivation for becoming a mother is low and remains a distant reality. Fetal movement begins to transform the imaginary baby into a real, living baby and the mother begins to develop a reciprocal relationship with the baby. The fetal movement brings awareness and increases the mother's protectiveness of the baby. "The development of the maternal identity is directly related to and dependent upon the development of the child" (p.63). As the baby continues to grow during pregnancy, the mother continues to develop a relationship with the baby and dreams of what the baby will be like. When a baby is born early or born with a defect, the mother will mourn the loss of the idealized baby.

Giving of oneself is the most complex task of pregnancy. The physical, psychological, and social demands of pregnancy cannot be endured by the pregnant woman without purpose. Early in pregnancy, the demands are high and the benefits are debatable (Rubin, 1984). As the pregnancy continues, the benefits become more apparent and the demands are actively reduced by pursuing the maternal tasks "to ensure safe passage through the pregnancy, to ensure acceptance by others, and to allow

binding-in to the baby" (p.66). As all the tasks are attained, the pregnant woman "works at the essential and substantive meaning of giving" (p. 66). During this task, the woman recognizes the baby as valued and gives of her time and energy, nurturing the baby.

Maternal Cognitive Behaviors

Cognitive behaviors initially identified by Rubin (1967) that facilitate the development of the maternal identity during pregnancy and following delivery are mimicry, role play, fantasy, and introjection-projection-rejection (IPR). In later work, Rubin (1984) further described the behaviors as replication, fantasy, and dedifferentiation. Replication of societally valued qualities of behavior and attitude is a beginning point for pregnant women. This behavior is self-initiated by the woman and she actively searches for new and/or desirable qualities to be replicated. One form of replication is mimicry. In mimicry, the woman will mimic or copy a certain desirable behavior or action. Mimicry helps provide the pregnant woman with some level of certainty in "a stage of great uncertainty" (Rubin, 1984, p. 40). Also, mimicry allows the woman to take on the characteristics of the role of becoming a mother. The woman's own mother is often the dominant model used for the mimicry behavior.

Another form of replication is role play and is considered as "trying-on" the role as mother (Rubin, 1984, p. 42). Role play allows the woman to act out in ways that she expects the role to be. This acting out is often accomplished in situation-specific ways. For example, a primigravidous woman may offer to babysit or engage with children in their home environment, acting as if she were the child's mother. A multiparous woman may explore maternal behaviors in having another child, in addition to her current

children, by role playing with her current children and a child's playmate. Replication, through mimicry and role play, serves as a guide through the course of and in the situations that can arise in pregnancy. Also, replication behaviors are considered a "preliminary binding-in to a maternal identity" (p. 43).

Another maternal behavior used in developing a maternal identity is fantasy. Fantasy is the cognitive investigation of opportunities in situations and experiences of the woman as mother and the unborn baby (Rubin, 1984). Fantasy involves internalizing the role play and can include wishes, dreams, or even daydreams. The anticipation and preparation required during pregnancy involves fantasizing about how being a mother to their baby will be. While pleasant fantasies create hope, unpleasant fantasies create anxiety. According to Rubin (1984), fantasy is instrumental in binding-in to the baby and visualizing herself as mother.

After the woman has had time to assimilate some of the behaviors involved in replication and fantasy, dedifferentiation can occur. Dedifferentiation is an "examination and evaluation for goodness of fit with current self-image" (Rubin, 1984, p. 50). During dedifferentiation, there is a "trying-on" (introjection) of a new element and projection of the new element in action or appearance (p. 50). Then, the woman will make a decision to accept or reject the new element as a part of herself as mother. There is little dedifferentiation in the antepartum period, with most occurring in the postpartum period. Rubin definitively states that dedifferentiation of self immediately "precedes the establishment of a maternal identity" (p. 51). However, in a high-risk pregnancy, developing a maternal identity could occur earlier due to the risk of delivering a baby

prematurely, potentially causing the high-risk pregnant woman to begin to parent while pregnant (Côté-Arsenault & Denney-Koelsch, 2016). This notion could potentially contradict Rubin's idea of dedifferentiation and was explored in this study.

Literature using the Theoretical Framework

Maternal identity has been found to be, not surprisingly, influenced by many factors in a woman's life, such as maternal age, marital status, number of weeks gestation, family functioning, social support, stress, and the relationship between the mother and her significant other (Rubin, 1984). Differences on the basis of maternal age have been reported in studies investigating maternal identity, with older women demonstrating a greater number and better quality of maternal behaviors, greater parenting satisfaction, and greater commitment to the role as mother, compared to younger women (Mercer, 1986; Ragozin, Basham, Crnic, Greenberg, & Robinson, 1982). First time mothers can make the transition to motherhood with less confidence and more negative feelings than multiparous women because they have never experienced being a mother before (Rubin, 1984; Walker, Crain, & Thompson, 1986). Marital status may also affect the development of the maternal identity. For example, Rubin (1984) noted that women with more marital satisfaction had less difficulty in making the transition to becoming a mother. Social support can play a factor in the developing maternal identity, with greater social support, especially partner support, leading to more positive maternal attitudes and behaviors (Crnic, Greenberg, Ragozin, Robinson, & Basham, 1983).

Comparing maternal identity between high- and low-risk pregnant women has been the focus of a few studies. For example, Mercer and Ferketich (1994) examined if

risk status affected a woman's perceived maternal competence in the immediate post-partum period, 1 month, 4 months, and 8 months after birth. Self-esteem and a perceived mastery of motherhood were found to be predictors of maternal competence in both groups. No difference was noted between high- and low-risk mothers in maternal competence measures. This challenges Rubin's (1984) proposal that a maternal illness (a high-risk pregnant condition) may temporarily delay maternal role behaviors. However, in these studies which were all conducted postpartum, childbirth may have resolved some of the uncertainties surrounding the high-risk condition, the outcome of the pregnancy, and the health of the baby. Mercer and Ferketich (1994) also reported that while maternal competence was related to attachment (binding-in) in both groups, attachment was found to be stronger in the low-risk group.

Although a large body of literature exists that describes maternal identity, most studies are focused on the measurement of the maternal identity in the postpartum period with women who experienced no complications during pregnancy (Emmanuel et al., 2011; Mercer, 1986; Mercer & Ferketich, 1995; Özkan & Polat, 2011; Fowles, 1998; Walker et al., 1986). Some studies have completed longitudinal investigations on maternal identity, assessing the developing maternal identity during pregnancy and the postpartum period (Emmanuel et al., 2011; Fowles, 1998). Using a sample of 473 Australian, low-risk pregnant women, Emmanuel et al. (2011) examined the relationship between maternal role development, maternal distress, and social support over three time points (3rd trimester, 6 weeks postpartum, and 12 weeks postpartum). A significant negative relationship was found between maternal role development and maternal distress

at all three time points. Fowles (1998) examined the relationship between postpartum depressive symptoms and maternal role development over two time points (3rd trimester and 9-14 weeks postpartum). In a sample of 168 pregnant women with no pregnancy complications, recruited in the mid-western United States, a significant negative relationship was found between postpartum depression and all measures of maternal role development ($r = -0.20$ to -0.35, $p < 0.01$).

A few studies have focused on nursing intervention and support to help foster becoming a mother (Mercer & Walker, 2006; Mercer, 2006). There are a few studies that have been completed in the high-risk pregnant population (Lederman et al., 2013; Markovic et al., 2006; Mercer & Ferketich, 1994; Mercer et al., 1988; Mu, 2004) however, most of these have focused on the development of the maternal identity after delivery (Mercer & Ferketich, 1994; Mercer et al., 1988). Less is known about the impact of the hospitalized experience on the high-risk woman's developing maternal identity during pregnancy (Lederman et al., 2013).

Hospitalization for a high-risk condition can be stressful for a woman because the usual adaptation process to the pregnancy is disrupted. She must now cope with altered developmental tasks of pregnancy that have been created from the stress of her high-risk condition and hospitalization (Heaman, 1998). With any high-risk condition, alterations in the developing maternal identity may occur. However, for a high-risk pregnant woman hospitalized with a pregnancy complication, these alterations in the developing maternal identity may be heightened (Heaman, 1998).

Three studies have been identified that describe the experience of antenatal hospitalization among high-risk pregnant women and how the experience impacted the maternal identity (Lederman et al., 2013; Markovic et al., 2006; Mu, 2004). In each of these studies it was found that high-risk pregnant women revised their developing maternal identity as a consequence of the hospitalization. In a phenomenological study investigating women hospitalized for premature rupture of membranes (PROM) in Taiwan, Mu (2004) interviewed 13 married couples regarding their experiences. All expectant women were hospitalized for PROM and had experienced one to two weeks of bed rest. The women's age ranged from 26 to 35 (M = 29 years) and the men's age ranged from 26 to 41 (M = 32 years). The number of weeks gestation ranged from 20.5 to 34 (M = 27). Findings from the study revealed that PROM created a threat to the safety of the expectant woman and her fetus. A transition in the maternal role was described as the mothers adapted to the hospitalized experience. Four themes were identified in the maternal role transition experience: pending loss, concern for the safety of the fetus, identification of maternal roles, and the process of maternal role-making. Pending loss was described by the mothers as recognizing the potential threat to the baby's life and threat to the baby's long term health. With the experience of PROM, the woman had feelings of uncertainty about her own safety, control of the condition, and the overall safety of the baby. When the women were constantly concerned about the safety and health of the baby their emotional reactions changed according to the stability of the condition. The identification of the maternal role was described as the women perceiving that their personal activities and reactions directly influenced the health and safety of the

baby. When the women perceived the influence their behavior and condition had on their babies, they immediately tried to adjust and adapt their behavior to protect their babies and prevent further deterioration of their conditions.

In a qualitative study, Lederman et al. (2013) examined the ways that women's experience of hospitalization to prevent preterm birth impacts prenatal maternal development. A total of 41 pregnant women hospitalized to prevent preterm birth and confined to bed rest were recruited from a hospital in Southwestern United States. The women ranged in age from 18 to 43 (M = 28.17, SD = 7.5) and the majority were multigravidas (n = 31). Half of the participants were African American, while the others were closely divided between Caucasian and Hispanic. Reasons for the hospitalization included preterm rupture of membranes, preterm contractions, vaginal bleeding, early onset preeclampsia, cervical insufficiency, diabetes, and gestational hypertension. A semi-structured interview guide, containing 35 open-ended questions, was used for each interview and all interviews were audio-recorded. Five themes emerged during analysis. Theme one was acceptance of pregnancy, but with fears of the risk for self and baby. The women expressed that they wanted the pregnancy and baby. However, they feared losing the baby or something being wrong. Theme two was heightened identification with motherhood protector roles. Women reported their willingness to cope with everything and to do what the doctors asked them to do for the health of the baby. The third theme was renewal or deepening of the mother-daughter bond by the high-risk pregnancy. Some women expressed how the experience of hospitalization helped them get closer to their mothers. Theme four was increased support from and collaboration

with their significant other during the hospitalization. Women stated they felt closer to their significant others and that the pregnancy had brought them together. The fifth and final theme was accepting the responsibility to adhere to the prescribed bed rest and to accept help from healthcare providers. The women reported their bed rest experience as boring, lonely, frustrating, miserable, and tiring. However, many women stated that they tried to follow the healthcare provider's advice and to do whatever they could to maintain the pregnancy. The hospitalized experience was viewed as a burden to be endured to meet the goals of pregnancy. However, they found that the experience facilitated the developing relationship between the high-risk pregnant woman and her baby.

Although not guided by Rubin's theory, Markovic et al. (2006) studied the impact of individual and social factors that either assist or delay women's adjustment to the risks associated with pregnancy complications, using a grounded theory design. Twenty-seven high-risk pregnant women were recruited from a teaching hospital in Australia. The age range of the women was reported as follows: 18-25 (n = 7), 26-30 (n = 5), 21-35 (n = 10), and ≥ 36 (n = 5). Number of weeks gestation was: < 30 (n =14), 31-34 (n = 10), and 35 (n = 3). The pregnancy complications that warranted the hospitalization were antepartum hemorrhage (n = 8), premature rupture of membranes (n = 8), fetal growth restriction (n = 7), placenta previa (n = 5), preeclampsia (n = 3), and incompetent cervix (n = 3), with some women experiencing more than one complication. The women in the study described the sudden, unexpected and worrying signs of the pregnancy complications as causing an altered view of pregnancy, with the possibility of a threatened pregnancy. With the development of the complication, the women expressed a sudden transformation

from being pregnant to being sick in pregnancy, needing to adapt to the situation. The women described their experience of hospitalization as causing considerable distress and affecting their social network. The women expressed the lack of control over their pregnancy and experience. Being admitted to the hospital for the pregnancy complication led the women to an altered understanding of pregnancy as a "risky biological event" and to the development of a revised identity as a mother (p. 768).

While it has been documented that maternal identity is affected by maternal age, marital status, social support, and pregnancy risk status, it is less clear about how the experience of hospitalization can impact a woman's maternal identity. The hospitalized experience can cause the high-risk woman to alter or adjust her maternal identity in response to the hospitalization (Lederman et al., 2013; Markovic et al., 2006; Mu, 2004), but what occurs in this process is not well understood. Rubin's framework on maternal identity assisted the PI in understanding the normal processes that occur during pregnancy and how these processes may be altered in a high-risk pregnancy. Furthermore, this study used Rubin's work on maternal identity as a framework to help explain the maternal behaviors and tasks of pregnancy that exist in the hospitalized high-risk pregnant woman, with a primary focus on prenatal attachment (binding-in) and how the relationship between mother and baby may be affected.

Prenatal Attachment

Understanding prenatal attachment (binding-in) is important because if a mother does not become emotionally attached to her baby, the baby's health may be in jeopardy (may not thrive or survive). This emotional attachment influences the mother's behavior

and attitude towards the baby, which promotes the physical, mental, and social health of the child (Laxton-Kane & Slade, 2002; Pisoni et al., 2016). During pregnancy, there are opportunities for interaction or experience between the mother and baby to help shape the relationship following birth, such as feeling fetal movement, playing music for the baby, or reading to the baby. However, this type of interaction often lacks reciprocity. Therefore, prenatal attachment is likely to be most influenced by the mother's own experiences with attachment (e.g., previous experiences with other children and her relationship with her own mother), the effect of competing roles, and the amount of support available to the mother during pregnancy (Laxton-Kane & Slade, 2002).

A mother's feelings towards her baby during pregnancy (attachment) can have a substantial effect upon the quality of attachment to the infant following delivery and could result in a mother having difficulty attaching to her baby. Poor attachment to the baby following birth has been linked to fetal and child abuse (Pollock & Percy, 1999). Pollock and Percy investigated variables that could affect prenatal attachment and the intent to harm the unborn fetus. Forty Caucasian pregnant women, referred from a social services department in England and without pregnancy complications, were enrolled in the study. The mean age was 28 years, with the number of weeks gestation not reported. Attachment was measured using the Maternal Antenatal Emotional Attachment Scale (MAEAS) (Condon, 1993). Intent to harm the unborn fetus was measured using the Battered Fetus Scale (BFS) (Condon, 1987). Self-reported personality and symptoms of personality disorder were investigated using the Millon Clinical Multiaxial Inventory-2 (Millon, 1987). Additionally, a family attachment interview was completed with each

participant to examine self-reported previous and current relationships with family members. Negative prenatal attachment was predictive of an increased possibility of symptoms of anxiety, mood disturbance, depression, self-reported frustration with the fetus, and intention to harm the unborn fetus.

Concepts in Prenatal Attachment Studies

Studies of prenatal attachment have investigated a wide spectrum of variables. Demographic characteristics, such as maternal age and parity are commonly examined in attachment studies (Laxton-Slade & Slade, 2002). The effect of maternal age on prenatal attachment varies by study. Bloom (1995) investigated the development of prenatal attachment and attachment following birth by comparing adolescents with varying ages (early, middle, and late adolescence). Data were collected over four time points: 1) initial enrollment, 2) between 20 to 29 weeks gestation, 3) between 30 to 40 weeks gestation, and 4) within one week of delivery. At initial enrollment to the study, 79 low-income pregnant adolescents consented, or received parental consent, to enroll in the study. The majority of subjects (n = 68) were 15 to 19 years of age, while 11 were aged 12 to 14. Also, at initial data collection, 29 subjects were African American (60%), 18 were Caucasian (38%), one was Hispanic (1%), and one was not specified (1%). At each time point thereafter, subjects were lost from data collection with a total of 47 remaining at the final data collection point. Rubin's (1984) work on maternal identity formation was used as the theoretical framework for the study. Maternal-fetal attachment was measured at all three prenatal data collection time points using the Maternal-Fetal Attachment Scale (MFAS) (Cranley, 1981). Maternal attachment at the data collection time point following

delivery was measured with Avant's (1982) Maternal Attachment Assessment Strategy (MAAS) by observing specific maternal behaviors towards the infant. The results indicated a positive relationship between attachment in the third trimester and affectionate behaviors towards the infant following delivery in all age categories.

Age and parity of pregnant women have been investigated together to examine the effect of these two demographic variables on prenatal attachment. Berryman and Windridge (1996) examined if a woman's level of prenatal attachment to her unborn baby varies according to age, parity, and stage of pregnancy. Cranley's (1981) MFAS was completed in the second trimester by 104 women. Women aged 35 and older (26 nulliparas and 26 multiparas) were compared to women aged 20 to 29 in two equivalent groups. In the third trimester, 96 women completed the MFAS again (49 women aged 35 and older (23 nulliparous and 23 multiparas) and 47 women aged 20-29 (24 nulliparous and 23 multiparas). Significantly lower prenatal attachment scores in pregnant women over 35 years of age were seen compared to women aged 20 to 29 during the second trimester. However, during the third trimester, no significant differences were noted between the two age groups. Additionally, no significant differences in attachment were found between primigravida and multigravida mothers. The findings support Rubin's (1984) work on the maternal task of binding-in (as the baby continues to grow, the mother continues to develop a relationship with the baby) and typically occurs regardless of age and parity.

Psychosocial variables are commonly included in prenatal attachment studies with the most prominent being social support, self-esteem, relationships with others, anxiety,

and depression. Although many of these studies are dated, they still provide important background information to the current study. Social support and its influence on attachment have been investigated in a few studies. Koniak-Griffin (1988) examined the relationship between prenatal attachment and a combination of psychological and social measures, including self-esteem and social support. A culturally diverse sample of 90 adolescents aged 14 to 19 (M = 16.68, SD = 1.29) were recruited for the study from the western United States. The majority of subjects were Caucasian (36.7%), 26.7% were African American, 28.9% were Hispanic, 5.6% were Asian, and 2.2% were unspecified. The mean pregnancy gestation was 30.7 weeks, with only ten subjects reporting pregnancy complications, such as urinary tract infections, sexually transmitted diseases, and vaginal bleeding. Maternal-fetal attachment was measured using Cranley's (1981) MFAS, self-esteem was measured using the Self-Esteem Inventory (SEI) (Coopersmith, 1967), and social support was measured using Norbeck's Social Support Questionnaire (NSSQ) (Norbeck, Lindsey & Carrieri, 1981). A significant correlation was found between self-esteem and social support ($r = 0.93$, $p < 0.001$), suggesting that individuals with higher levels of social support have higher self-esteem. However, the findings of the study did not support a strong relationship between self-esteem, social support, and overall maternal-fetal attachment.

Another study sought to describe and compare differences in social support among African Americans, Caucasians, and Hispanic pregnant adolescents (Koniak-Griffin, Lominska, & Brecht, 1993). Additionally, comparison among these three groups investigated a relationship between social support and prenatal attachment. Subjects

were recruited from alternative schools and residential maternity homes in the western United States. A total of 161 subjects were enrolled (78 subjects from alternative schools and 83 subjects from a residential maternity home). The sample was composed of 41 African Americans, 60 Caucasians, and 60 Hispanics. Age of the subjects ranged from 12 to 19 years (M = 16.34), with a mean weeks gestation of 29.02. One hundred fifty-three subjects (95%) were unmarried and 155 subjects (96%) were experiencing pregnancy for the first time. The NSSQ was used to assess social support (Norbeck et al., 1981) among the three groups. Maternal-fetal attachment was assessed using Cranley's (1981) MFAS. No significant differences were found among ethnic groups for age, current educational level, number of weeks gestation, marital status, and number of previous pregnancies. A statistically significant difference was found between ethnic groups in total functional support ($F = 3.63$, $p < 0.05$), with African American adolescents reporting significantly lower scores than those of Caucasians, who reported the highest scores. Total functional support was defined by Koniak-Griffin et al. as the reflection of "emotional and tangible support" (p. 47). Also, a statistically significant difference was found in network size with African Americans reporting the least number of individuals in their network, whereas Caucasians reported the greatest number of individuals ($F = 3.41$, $p < 0.05$). Although statistically significant differences were found in the two categories (total functional and network size) between ethnic groups, there were no significant differences found in MFAS scores among ethnic groups. Furthermore, there were no significant correlations found between NSSQ scores and

MFAS scores for the entire sample or for any of the ethnic groups, indicating that social support does not influence prenatal attachment.

Unlike social support and self-esteem, a positive correlation has been found between prenatal attachment and relationships with a significant other or mother among various pregnant groups (Canella, 2005). Wayland and Tate (1993) examined the relationship between maternal-fetal attachment and the perceived relationships with the pregnant adolescent's mother and the baby's father. A convenience sample of 61 primiparous adolescents was recruited from a prenatal clinic in a southwestern city of the United States. The age of the subjects ranged from 14 to 20 years (M = 17.8), with the average weeks gestation of 31.5. Nearly half of the sample was Mexican-American (n = 29), 18 were Caucasian, and 14 were African-American. Maternal-fetal attachment was measured using Cranley's (1981) MFAS. The relationship with the subjects' mothers was assessed using a researcher-developed scale, the relationship with mother (RELMO) scale, consisting of five Likert-type items investigating various aspects of the adolescent's relationship with their mother (e.g., closeness before and during pregnancy and mother's caring nature). The relationship with the baby's father was assessed using a researcher-developed measure that addressed demographic information (e.g., age of first menses, pregnancy information, number of people who reside with subject, school enrollment, and employment status) and information about the baby's father and her relationship with him. A significant correlation was found between MFAS scores and the adolescent's perceived close relationships with her mother ($r = 0.37$, $p = 0.01$) and the baby's father ($r = 0.28$, $p = 0.05$), indicating that relationships with others can influence

attachment. Additionally, MFAS scores were higher and significantly correlated as gestation progressed ($r = 0.28$, $p = 0.05$) and in those who were married ($r = 0.26$, $p = 0.05$).

Bloom (1998) examined the perceived relationship with the baby's father and maternal attachment among pregnant adolescents. Data collection occurred over four time points: 1st, 2nd, and 3rd trimesters and following delivery. Seventy-nine pregnant adolescents attending one of four antepartum clinics for low-income women in the southeastern United States enrolled in the study. However, retaining all subjects throughout all data collection time points was challenging. The decreasing group size was reported as follows: 1st trimester = 79, 2nd trimester = 64, 3rd trimester = 54 and following delivery = 47. At the initial data collection time point, the mean age was 16.8 (range = 13-19) and the mean age of the baby's father was 20.3 (range = 14-34). Most subjects were unmarried (85%, n = 67). The majority of subjects were African American (60%, n = 47), 30 were Caucasian (38%), 1 was Hispanic (1%), and 1 was identified as "other" (1%). At the initial data collection, 56 adolescents (71%) reported being pregnant for the first time and the mean weeks gestation was 13.6 (Range = 7-18). Maternal-fetal attachment was measured using Cranley's (1981) MFAS. Following delivery, maternal-infant attachment was measured using Avant's (1982) MAAS. The adolescent's perceived relationship with the baby's father (FOBS) was measured using a researcher-developed set of questions on a 5-point Likert-type scale. The subjects reported a moderately close pre-pregnancy relationship with the baby's father (M = 2.88, SD = 0.55). Throughout the pregnancy, the subjects reported their current relationship

with baby's father to be relatively close (< 20 weeks: M = 4.14, SD = 1.21; 20-29 weeks: M = 4.02, SD = 1.25; 30-40 weeks: M = 4.02, SD = 1.23). Following delivery, the subjects reported a significant improvement in their relationship with the baby's father (M = 4.83, SD = 0.30, $p < 0.001$). Analysis of maternal-fetal attachment revealed that the subjects demonstrated attachment to their babies during pregnancy and this increased as pregnancy progressed (< 20 weeks: M: 3.07, SD 0.43; 20-29 weeks: M = 3.96, SD = 0.44; 30-40 weeks: M = 4.04, SD = 0.44). Observations of maternal-infant attachment in the 1st week after delivery revealed a wide variation in attachment among the subjects. Analysis of the correlation between scores on the FOBS, MFAS, and MAAS revealed several statistically significant correlations. In the 1st trimester, the closeness of the relationship with the baby's father was significantly correlated with MFAS scores ($r = 0.25$; $p < 0.05$), indicating that subjects who rated their relationship with the baby's father as close were more likely to take on maternal roles during pregnancy. In the 2nd trimester, a close relationship between the baby's mother and father was correlated with a higher MFAS score ($r = 0.36$; $p < 0.05$), as well as reports of more frequent interaction (e.g., talking to baby, reading to baby, and responding to fetal movement) between the mother and her unborn baby. In the 3rd trimester, no significant relationships were noted between the relationship with the baby's father and MFAS scores. Following delivery, only one aspect of the MAAS was found to be significantly correlated with the satisfaction of the relationship with the baby's father ($r = 0.34$, $p < 0.05$), indicating those that were more satisfied with the relationship were more likely to keep the infant closer to them during the observations.

Anxiety and depression are two psychological concepts often investigated together in attachment studies because of the importance in understanding how these concepts may affect attachment to the unborn baby. Pregnancy is a time of psychological transformation and the presence of anxiety and/or depression may negatively influence the relationship between mother and baby (McFarland et al., 2011). Hart and McMahon (2006) examined whether there was an association between antenatal mood (anxiety and depression) and psychological adjustment to pregnancy. Subjects for the study were recruited from low-risk obstetric clinic in Sydney, Australia. Fifty-three primiparous women ranging in age from 21 to 44 (M = 31.24, SD = 4.86) and in weeks gestation from 20 to 38 weeks (M = 29 weeks, SD = 3.62) participated in the study. Depression was measured using the Edinburgh Postnatal Depression Scale (EPDS) (Cox, Holden, & Sagovsky, 1987) and anxiety was measured using the State-Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970). Maternal-fetal attachment was measured using the MAAS (Condon, 1993). Attitudes towards childbearing were measured by the Childbearing Attitudes Questionnaire (CAQ) (Ruble et al., 1990) and maternal attitudes towards the experience of pregnancy were measured using the Maternal Attitudes Questionnaire (MAQ) (Warner, Appleby, Whitton, & Faragher, 1997). The scores for the EPDS ranged from zero to 16 (M = 6, SD = 3.93) with five women scoring 13 or above (cut-off score for major antenatal depression = 13). Trait anxiety scores ranged from 20 to 59 (M = 36, SD = 9.40) and 18 women (36%) scored 40 or above, indicating a high level of anxiety. State anxiety scores ranged from 20 to 57 (M = 34, SD = 10.31) and 16 women (30%) scored above 40. These three mood state scales were significantly

correlated with one another (all p values < 0.001, EPDS and trait anxiety: $r = 0.63$; EPDS and state anxiety: $r = 0.77$; trait and state anxiety: $r = 0.77$). Scores for the MAAS ranged from 63 to 92 (M = 77.83, SD = 6.67). Overall, results indicated that increased anxiety (state and trait) was related to higher levels of concern regarding the responsibilities of motherhood. Also, trait anxiety scores were significantly related to MAQ scores ($r = 0.371$, $p < 0.05$), indicating that with higher levels of trait anxiety, more maladaptive thoughts about motherhood were expressed. Higher trait and state anxiety scores ($r = -0.400$, $p = 0.004$; $r = -0.349$, $p = 0.01$, respectively) related to increased negative quality of attachment (i.e., less positive feelings of the baby). Furthermore, independent t tests indicated that the women with "low" attachment scores reported higher levels of anxiety and depression (Trait: $t = 2.73$, $p = 0.009$; State: $t = 2.42$, $p = 0.019$; EPDS: $t = 2.58$, $p = 0.013$).

McFarland et al. (2011) sought to examine if pregnant women with major depressive disorder (MDD) differed in their level of maternal-fetal attachment compared to non-depressed pregnant women. A total of 161 subjects were enrolled in the study. Women who met the MDD criteria were included in the MDD group (N = 65). Women who did not meet the MDD criteria at any point in the pregnancy were enrolled in the nonMDD group (N = 96). The average maternal age was 28.31 (SD = 6.06) in the MDD group and 29.63 (SD = 4.61) in the nonMDD group, with the average weeks gestation not reported. The average number of women who experienced complications during pregnancy in the MDD group was 27.69 (SD = 18) and in the nonMDD group was 23.08 (SD = 15). Complications during pregnancy were identified as pregnancy-induced

hypertension, gestational diabetes, preterm labor, and vaginal bleeding. Data collection occurred at two time points: between 26 and 28 weeks gestation and between 36 and 38 weeks gestation. Data were collected using five different measures. The SCID-I/NP was used to assess for current and past history of depression according to DSM-IV criteria, using a semi-structured interview process (First, Spitzer, Miriam, & Williams, 2002). The TLFB interview was used to measure alcohol and drug use (Sobell, Brown, Leo, & Sobell, 1996). The HSRD was used to assess the severity of depression (Hamilton, 1960). Maternal-fetal attachment was measured using the MFAS (Cranley, 1981). Social status was measured by using the Hollingshead Four Factor Index interview, which assesses measures of income, living conditions, education, and occupation (Hollingshead, 1975). Pairwise comparisons of the MFAS scores discovered that the MDD group had significantly lower MFAS scores (M = 3.97) than women in the nonMDD group (M = 4.33; $p < 0.001$). A significant negative relationship was found between HRSD scores and MFAS scores ($B = -0.005$, SE = 0.002, $p < 0.001$). Also, a significant relationship was found between the MDD group, HRSD scores, and MFAS scores ($B = -0.006$, SE = 0.003, $p < 0.02$), suggesting that a diagnosis of MDD is related to significantly lower levels of maternal-fetal attachment.

Another study examined the influence of maternal depressive symptoms on maternal-fetal attachment in low-income women, using a mixed-methods design (Alhusen, Gross, Hayat, Rose, & Sharps, 2012). Pregnant women were recruited from three obstetrical clinics in Baltimore, Maryland, which serves a predominantly African American, low income population. One hundred and sixty-six subjects were enrolled in

the study, with a subsample of twelve women invited to participate in the qualitative portion of the study. The average age of the larger study sample (n = 166) was 23.3 (range: 16-39) and average age of the subsample (n = 12) was 24.3 (range: 16-29). The majority of subjects were African American (93% in larger sample and 100% in subsample). In the larger sample, 54 (32%) were primigravidas and 112 (68%) were multigravidas. In the subsample, 75 % were multigravidas (n = 9). Overall, the sample consisted of predominantly single, low-income women. For the quantitative portion of the study, four measures were used for data collection. A researcher-developed demographic and pregnancy background measure was used to gather demographic (e.g., age, race, marital status, etc.) and pregnancy history (e.g., number of pregnancies, number of live births, etc.). Maternal-fetal attachment was measured by the MFAS (Cranley, 1981). The Prenatal Psychological Profile (PPP) was used to measure a woman's perceived social support (Curry, Burton, & Fields, 1998). The EPDS was used to measure depressive symptoms during pregnancy (Cox et al., 1987). Semi-structured interviews were used for the qualitative portion of the study. The interviews began with an open-ended question inquiring about the subject's relationship with their baby. Specific questions were asked regarding mental health (e.g., social support, and depression). Over half of the total sample exceeded the EPDS cutoff score of >12 (n = 98; 59%). In the subsample, a larger portion of the sample exceeded the EPDS cutoff score (n = 9; 75%). Bivariate correlations revealed a negative correlation between depressive symptoms and maternal-fetal attachment (r = -0.79, $p < 0.001$). Additionally, a negative correlation was found between social support and depressive symptoms (r = -

0.81, $p < 0.001$). A positive correlation was found between social support and maternal-fetal attachment ($r = 0.73$, $p < 0.001$). A linear regression model revealed that social support and depressive symptoms were significant predictors of maternal-fetal attachment, accounting for 62.5% of the total variance in overall maternal-fetal attachment. Consistent with the quantitative findings, the women who participated in the qualitative portion of the study had higher depressive scores and discussed the lack of social support having a strain on their attachment to their unborn baby.

Prenatal attachment is an important aspect of the developing relationship between the mother and baby and can be impacted by many aspects of the pregnant woman's life. Although differences in age and parity status may affect prenatal attachment in the 1st and 2nd trimesters of pregnancy, no differences have been found in the 3rd trimester, suggesting that as the pregnancy continues, prenatal attachment becomes stronger regardless of age and parity (Bloom, 1995; Berryman & Windridge, 1996). While the relationship between social support and prenatal attachment have varied among studies (social support having no impact (Koniak-Griffin et al., 1993) to high social support leading to increased levels of prenatal attachment (Koniak-Griffin, 1988), a woman's close relationship to her significant other and/or mother has been found to positively influence the woman's attachment to her baby (Wayland & Tate, 1993; Bloom, 1998). Additionally, high levels of anxiety and depression have been found to negatively impact the mother's attachment to her unborn baby (Alhusen, 2008; Hart & McMahon, 2006; McFarland et al., 2011). Less is known about how a high-risk pregnancy may impact the

woman's level of prenatal attachment to the unborn baby because few studies have investigated prenatal attachment in this population.

Prenatal Attachment and High Risk Pregnancy

Few studies have investigated prenatal attachment in high-risk pregnancy and those are out-dated (Chazotte, Freda, Elovitz, & Youchah, 1995; Kemp & Page, 1986; Mercer et al., 1988; Curry, 1987). Each of these studies compared low- and high-risk pregnant women and found no significant differences in attachment scores between groups (Kemp & Page, 1987; Mercer et al., 1988; Chazotte, et al., 1995). A brief summary of each study is provided below.

Kemp and Page (1987) compared attachment in normal and high-risk pregnancies and identified key variables affecting the process of attachment, such as educational level, age, race, and whether the pregnancy was planned or unplanned. Fifty-three low-risk pregnant women and 32 high-risk pregnant women completed Cranley's (1981) prenatal attachment tool. No significant differences were found in the scores of both groups of pregnant women.

Mercer et al. (1988) conducted an investigation exploring maternal and paternal attachment in four groups: hospitalized high-risk pregnant women, their significant other, low-risk pregnant women, and their significant other. No differences in attachment scores were discovered between the low- or high-risk pregnant women or their significant others. However, women scored significantly higher on the attachment scale than their significant others.

Chazotte et al. (1995) investigated maternal depressive symptoms and maternal fetal-attachment in women with gestational diabetes. The Center for Epidemiological Studies-Depression Scale (CES-D) and the Cranley Maternal-Fetal Attachment Scale were administered to 30 women with gestational diabetes. These scores were compared with scores from two control groups: a group of 30 high-risk pregnant women at risk for preterm delivery and a group of 30 pregnant women with uncomplicated pregnancies. No significant differences for depressive symptoms or attachment scores were found between the three groups.

There is a growing body of literature investigating stress, anxiety, and depression and its impact on prenatal attachment (White et al., 2008; McFarland et al., 2011). It is possible that women with high-risk pregnancies could have increased stress and anxiety, even depression, due to their high-risk diagnosis (White et al., 2008). Furthermore, women experiencing pregnancy complications and hospitalized for their condition may experience stress and anxiety associated with their risk status. The usual adaptation process to pregnancy may be disrupted when a woman experiences complications of pregnancy and must cope with the uncertainty of a positive outcome (White et al., 2008).

A study investigating the relationships between pregnancy risks, coping, psychological well-being, and maternal-fetal attachment was conducted among 87 women hospitalized for complications during pregnancy in Belfast, Ireland (White et al., 2008). Most of the sample (90.5%) was either married or living with their significant other. The mean maternal age was 30 (SD = 5.6; range: 18-42), with the mean weeks gestation of 33.4 (SD = 3.79; range: 24–41). Thirty-four percent of women were

primigravidas, 55% had planned the pregnancy, and 35% had experienced one or more previous pregnancy losses. The mean length of hospitalization at the time of data collection was 3.8 days (SD = 3.6; range: 2–21). Reason for admission varied among the subjects, including premature rupture of membranes, vaginal bleeding, placenta previa, decreased fetal movement, intrauterine growth restriction, elevated liver enzymes, and high blood pressure. Demographic and medical history information was obtained by a researcher-developed questionnaire. Maternal-fetal attachment was measured using the MAAS (Condon, 1993), which assesses two dimensions: quality of attachment and intensity of attachment. Anxiety was measured by the State-Trait Inventory (STAI) (Spielberger et al., 1983). Depression was measured by the Hospital Anxiety and Depression scale (HADS), which identifies adverse anxiety and depression states in the hospital setting (Zigmond & Snaith, 1983). The subject's level of distress was measured by the Prenatal Distress Questionnaire (PDQ), which assesses concerns related to aspects of pregnancy: bodily changes, health of the baby, labor and delivery, parenting, and physical symptoms (Yali & Lobel, 1999). The subjects' coping ability with their experience and challenges of pregnancy were assessed by using the Prenatal Coping Inventory (PCI) (Lobel, Yali, Zhu, DeVincent, & Meyer, 2002). Social support was measured by the Short Form Social Support Questionnaire (SSQ6) (Sarason, Sarason, Sherin, & Pierce, 1987). The subjects' maternal risk appraisal was measured by researcher-developed single-item measures asking specific questions regarding the potential for harm to their current pregnancy. Each of the four questions had a five-point response scale (0 = not at all to 5 = extremely). Due to the lack of standardized measure,

the subjects' medical risk assessment was measured by a trained medical professional reviewing each subject's medical record. At the time of data collection, a pregnancy risk score was given by the medical professional (0 = low, 1 = intermediate, 2 = high). Findings suggested that a positive outlook on the pregnancy helps mediate the relationship between the maternal assessment of risk and maternal-fetal attachment. Implementing a positive coping strategy demonstrated a strong, positive relationship with the quality and intensity of attachment ($\beta = 0.421$, $t = 3.079$, $p = 0.003$; $\beta = 0.613$, $t = 4.822$, $p < 0.001$, respectively). Anxiety was found to be associated with intensity of attachment ($p = 0.036$), indicating the more anxiety reported, the poorer the attachment to the infant. Furthermore, anxiety was found to mediate the relationship between maternal appraisal of risk and maternal-fetal attachment.

Pisoni et al. (2016) sought to examine the links between prenatal attachment, depression, anxiety, and social support among women who were hospitalized for risk of preterm delivery (n = 43) and women with no pregnancy complications (n = 37), along with their significant others, in an obstetrics and gynecology ward in Italy. The mean age of the risk pregnancy group was 32.53 (range: 25-44) for the women and 36.72 (range: 25-54) for the men. The mean age of women with no pregnancy complications was 32.97 (range: 19-44) and their significant others was 35.16 (range: 20-48). The mean gestation weeks for the risk group and no risk group was 28.47 (SD = 3.18) and 31.46 (SD = 1.92), respectively. Depressive symptoms were measured using the Center for Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1997). Anxiety was measured using the State and Trait Anxiety Inventory (STAI) (Speilberger, Gorsuch, &

Lushene, 1970). Perceived social support was measured by the Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet, Dahlem, Zimet, & Farley, 1988). Maternal and paternal attachment was measured using the Maternal and Paternal Antenatal Attachment Scales (MAAS and PAAS) (Condon, 1993; Condon & Corkindale, 1997). Results demonstrated that women in the pregnancy complication group reported more depressive symptoms than the women without complications ($p < 0.001$), with 30.29% (n = 13) in the pregnancy complication group and no women in the no complication group reporting severe depression. Additionally, anxiety was higher in the pregnancy complication group in both subscales. However, statistical significance was only found in the State Anxiety Inventory ($p < 0.001$), with 23.3% (n = 10) of the pregnancy complications group and 2.7% (n = 1) of the no complication group reporting severe anxiety. There were no significant differences found in perceived social support in the two groups. Prenatal attachment scores were significantly higher ($p < 0.005$) in the group without complications (both men and women). A significant positive correlation was found between anxiety and depression in both groups. In the pregnancy complication group, social support was negatively correlated to anxiety and had a weak positive correlation to MAAS scores. In the group without complications, social support was found to be negatively correlated with depression and state anxiety. In both groups, the PAAS was related to the MAAS. In the complication group, PAAS scores were negatively correlated with the mother's depression scores (Pisoni et al., 2016).

The current state of the literature suggests that high-risk women may be at risk for low prenatal attachment. Many studies investigating high-risk pregnancy and prenatal

attachment are out-dated and found no significant differences in prenatal attachment in high-risk pregnancy (Kemp & Page, 1986; Mercer et al., 1988; Chazotte, et al., 1995). However, the experience of pregnancy has become increasingly more complex with more women facing pregnancy complications, which could cause increased levels of anxiety and depression. These increased levels of anxiety and depression could negatively impact women forming an emotional attachment to their unborn baby (an important process of developing a maternal identity), potentially altering the woman's developing maternal identity and the relationship between the mother and her baby.

With the increasing complexity of these high-risk conditions, there is a need to reexamine the developmental process of pregnancy, including prenatal attachment, to understand how these processes may be affected. Additionally, a better understanding of the psychological and physiological concepts (e.g., anxiety, social support, and relationship with a significant other) that shape the development of prenatal attachment is warranted because previous work has been exploratory in nature and not theory driven (Alhusen, 2008; Cannella, 2005), indicating the need for a well-developed theory (Rubin's work on maternal identity) to guide future studies of prenatal attachment. By using a phenomenological research approach, the PI aimed to discover the essence of the current hospitalized experience and describe prenatal attachment in these women.

Bed Rest during a High-Risk Pregnancy

Antepartum bed rest is used to treat many high-risk pregnancy conditions and is usually prescribed when a healthcare provider believes it will benefit the health of the mother and/or health of the baby (Johns, 2006). These pregnancy-related conditions

include, but are not limited to, premature rupture of membranes, placenta previa, incompetent cervix, fetal growth restriction, gestational hypertension, multiple gestation, and preeclampsia (Kent et al., 2015; Maloni, 2010; Maloni, 2011; Maloni, Kane, Suen, & Wang, 2002; Markovic et al., 2006; Rubarth et al., 2012). The treatment of bed rest is prescribed for approximately 700,000 to 1 million women in the United States each year and can range from a few days to months depending upon the high-risk pregnancy condition (Biggio, 2013; Maloni, 2010; Maloni 2011). The overall goal of bed rest is reaching fetal maturity without risking the health of the mother and/or baby (Markovic et al., 2006).

Bed rest at home or in the hospital has been prescribed for years to treat women with pregnancy complications (Johns, 2006). However, there is little evidence to support the efficacy of antepartum bed rest (Maloni, 2010). Some research suggests bed rest does help prolong a pregnancy, while other data show it makes no difference. Bed rest treatment can impact an already stressful pregnancy because it adds its own specific physical and psychological side effects (Maloni & Kutil, 2000). Data have accumulated regarding the adverse physical effects of prolonged bed rest, including muscle deconditioning, bone demineralization, cardiovascular deconditioning, venous thrombosis, and alterations in the endocrine and immune systems. Additionally, the financial burden from lost wages caused by the prescribed bed rest can have a deleterious effect on the family and may contribute to increased family stress. For the woman, the loss of family income and the possibility of losing her job can cause increased levels of anxiety (McCall et al., 2013).

High-Risk Pregnancy and the Experience of Hospitalized Bed Rest

In some instances, women may be hospitalized for prolonged bed rest to provide intensive monitoring of the mother and baby to assess their well-being and to ensure effective management of their condition (Kent et al., 2015). Hospitalization is likely to increase the stress of having a high-risk pregnancy because it indicates an increase in severity of the complication. This experience can further impact the physical, psychological, and social changes already influenced by the high-risk diagnosis and could potentially disrupt the usual process of adaptation to pregnancy (Kent et al., 2015; Maloni & Kutil, 2000; Maloni, 2010; Rubarth et al., 2012). Hospitalized antepartum bed rest has many effects on the mother, the fetus, and the family, including being unable to work or care for other children at home (Maloni, 2010). They are separated from their families and/or support systems and prevented from participating in many activities surrounding motherhood, such as baby showers, shopping for needed baby items, or decorating the nursery (Rubarth et al., 2012). Many women feel isolated and alone during their hospital stay.

Describing the experience of prolonged bed rest from the perspective of high-risk pregnant women was the goal of a focused ethnographic study by Gupton and team (1997). Pregnant women experiencing complications that required partial or complete bed rest at home or in the hospital were invited to participate in the study. Twenty-four women were recruited from two settings in Midwestern Canada: an antepartum unit within a tertiary-care hospital and a public health clinic that provided assistance to those women with home bed rest. The majority of participants were Caucasian and married.

Ages of the participants ranged from 18 to 36 (M = 29). The number of weeks gestation ranged from 26 to 39 (M = 32.5). Ten women were primigravidas and 14 were multigravidas. Diagnoses of the participants included placenta previa (n = 7), spontaneous premature rupture of membranes (n = 4), pregnancy-induced hypertension (n = 5), and preterm labor (n = 8). Twelve women had been on bed rest in the hospital setting only, three women had been on bed rest in the home only, and nine had been on bed rest in both settings. The number of days on bed rest ranged from 7 to 50 (M = 20), with only four participants experiencing a period of complete bed rest. Data were collected through interviews, participant diaries, and field notes. Interviews occurred at the participant's bedside and were audio-recorded. At the end of the interview, participants were asked to keep a diary of their bed rest experiences. Purposeful sampling was used until data saturation was reached across all themes. Themes that emerged from the data were related to various aspects of the stress process. Pearlin's (1989) three domains of the stress process (stressors, stress mediators, and stress outcomes/manifestations) were used to organize data. Themes related to stressors fell into three main categories: situational, environmental, and family. Situational stressors referred to the stressors created by the situation of experiencing pregnancy complications and being prescribed bed rest. These situational stressors included sick role, uncertainty, lack of control, concerns regarding fetus's well-being, and being tired of waiting. Environmental stressors referred to the stressors of being confined to their home or hospital, which included descriptions of feeling like a prisoner, being bored, and having a sense of "missing out". Family stressors referred to concerns about their children and the

role reversal that occurred between their significant other and themselves. Mediation of stress themes fell into two categories: social support and coping. Social support was received from the woman's significant other, family, friends, and healthcare providers. Having visitors was an important aspect of the experience. Healthcare providers were also identified as helping mediate the stress of bed rest. Coping was another mediator of stress and participants discussed using various coping strategies. Keeping a positive attitude was described as helpful. Another strategy identified was taking the situation one day at a time. Complying with the bed rest for the benefit of the baby was seen as a source of coping. Additionally, women of faith used scripture and prayer to cope with the bed rest. Manifestations of stress were displayed with emotional reactions, altered relationships with family members, and physical side effects. Participants described experiencing a variety of emotional reactions from the experience of bed rest including, anger, anxiety, depression, disappointment, feelings of shock and confusion, frustration, guilt, loneliness, and mood swings. Altered family relationships were another manifestation of stress. Families were described as playing a central role during the experience and their roles were altered during bed rest. Physical side effects of bed rest were described as difficulty sleeping at night, becoming tired easily, feeling weaker, problems with digestion and constipation, physical aches and pains, sore and stiff joints, weight loss, and loss of muscle tone (Gupton et al., 1997).

Heaman and Gupton (1998) examined bed rest from the perspective of high-risk pregnant women and compared perceptions of women on home bed rest with those on hospital bed rest, using an ethnographic approach. Twenty-four women, who had been

on bed rest for at least seven days, were recruited from an antepartum home care program and an antepartum unit of a hospital in western Canada. Data collection occurred through audio-recorded interviews and participant diaries. Twelve women were on bed rest in the hospital setting, three women were on bed rest at home, and nine women experienced bed rest in both settings (home and hospital). The women on bed rest in both settings were asked to compare both experiences. Fourteen women (58%) completed their diaries. Most women were Caucasian and married. Ages ranged from 18 to 36 (M = 29), with mean weeks gestation of 32.7 (range: 26 to 39). There were ten primigravidas and 14 multigravidas in the sample. Pregnancy complications that warranted the bed rest were as follows: placenta previa (n = 7), preterm labor (n = 7), pregnancy-induced hypertension (n = 5), spontaneous premature rupture of membranes (n = 4), and polyhydramnios (n = 1). Most women were on partial bed rest and allowed out of bed for short periods of time. The number of days on bed rest ranged from seven to 50 (M = 20). Findings from the study suggested that bed rest had a significant emotional and social impact on the women and their families in both settings. Hospital bed rest appeared to be associated with more sources of stress than home bed rest. Women experiencing hospital bed rest had to cope with separation from their family and home, lack of privacy, and hospital discomforts (e.g., lack of sleep and uncomfortable beds). Women experiencing home bed rest expressed concerns about role reversal with their significant other and temptations to do activities that were not recommended. Women in the study expressed certain stressors such as concerns about children, a sense of confinement, a sense of missing out, feelings of depression and loneliness, and a negative impact on relationships,

especially with their significant others. Although these stressors were expressed by women in both settings, hospitalized bed rest seemed to exacerbate these stressors.

A longitudinal, phenomenological study by Stainton et al. (2005) compared women who were prescribed care through pregnancy day stay units or in-hospital units. In Australia, care to pregnant women with complications is provided through outpatient day stay units or inpatient hospital units. The day stay units require admission for a few hours twice a week for monitoring of the high-risk condition. The inpatient hospital unit is reserved for those needing closer observation of any changes that may impact maternal or fetal health. Participants were interviewed every four weeks beginning at admission to high risk care until six weeks after delivery. A total sample of 18 women (n = 11 admitted to the hospital and n = 7 in antenatal day stay unit) was recruited using purposive, convenience sampling. High risk diagnoses for women admitted to the antenatal unit were antepartum hemorrhage (n = 1), premature rupture of membranes (n = 1), placenta previa (n = 1), preeclampsia (n = 4), preterm labor (n =2), incompetent cervix (n = 1), and multiple diagnoses (insulin-dependent diabetes, hypertension, and premature rupture of membranes) (n = 1). High-risk diagnoses for women receiving care from the pregnancy day stay unit were prolonged premature rupture of membranes (n =1), pregnancy induced hypertension (n = 3), preeclampsia (n = 2), and insulin-dependent diabetes (n = 1). Other demographic information (e.g., age, race, and weeks gestation) of the participants were not reported. Three dimensions of experiencing a high-risk antenatal situation emerged from women's descriptions in both groups: 1) impact on well-being, 2) relationship changes and 3) a disruption to life. The women's sense of

well-being was challenged by several aspects of the experience. All women and their families worried about the pregnancy and their babies. However, women in the pregnancy day stay unit voiced more anxiety about their health. These women felt that not being admitted to the hospital increased their stress. Women in the antenatal unit expressed feeling safer with closer monitoring and closer proximity to staff should they be needed. Physical effects such as mobility issues, pain, and fatigue were described by all women. However, women in the antenatal hospital unit reported more severe physical symptoms. While women in the hospital were worried about their significant other's ability to cope, the significant others of those women in the pregnancy day stay unit were anxious about the women being at home. Changes to relationships were expressed by both groups. The care required in high-risk pregnancy forced changes in roles and responsibilities for the family unit. Also, more reliance on others to perform roles and tasks ordinarily performed by the woman were required. All women expressed how the high-risk diagnosis disrupted their lives by causing an uncertain environment. Furthermore, all women described their experience as waiting. Women in the pregnancy day stay unit described their experience as time slowing down, while women in the antenatal hospital unit described their experience of waiting as a much greater temporal impact with the elongation of time controlling their experience.

The purpose of another study was to understand the lived experience of hospitalization during a high-risk pregnancy (Leichtentritt et al., 2005). The study involved phenomenological analysis of ten focus groups of Israeli women hospitalized for high-risk pregnancy conditions. Each focus group included seven to 11 members,

including a group facilitator, a physician, and a nurse. Fifty-seven married women aged 18 to 41 (M = 30) participated in the study. The participants were at various stages of pregnancy, ranging from 19 to 39 weeks gestation (M = 33) at the time of the focus groups. Additionally, the participants experienced a variety of complications and were hospitalized for different lengths of time, but specific information regarding these was not reported. Five themes emerged during data analysis. The desire to nurture and social pressure to do so theme referred to the participant's strong desire to become mothers (either for the first time or once again), to care for their baby, and nurture the maternal relationship. The theme of personal and social meaning of a family expressed the participant's perception of what family means to them and why family is important to them. Also, the participants described their understanding of the social system and the importance of adding more members to society by having children. Another theme, loss of normal experiences of life and childbearing, referred to the participants' perception of their pregnancy as different from pregnancies without complications. The perceptions were a loss of normal experiences of life, childbearing, and delivery. Participants perceived their lives being on hold, since the high-risk diagnosis and/or hospitalization, resulting in a sense of loss and grief towards the experience. The fourth theme, woman's needs versus fetus's well-being, referred to the constant concern for their own health and the baby's health. The participants reported feeling two forces competing for their attention, one force focusing on their own needs and the other force focused on the needs of their unborn baby. The final theme was sources of strength and stress. The participants reported various sources of strength that helped them cope with the

hospitalization, including faith, the involvement of family and friends, knowledge regarding the high-risk condition, and their own inner strength. Some participants' sources of strength were seen as a source of stress to others. For example, one woman expressed that she had read "too many books about the risks that are involved in pregnancy" and "it was a mistake" to do so. However, another participant stated "knowing what is about to happen organizes me". The last phase of the analysis for the study was to identify one essential theme, which was referred to as the "core" dimension of the experience of hospitalization for a high-risk pregnancy condition. The conflicting relationships expressed within and between themes pointed to ambivalence as the core characteristic, or essential theme of the hospitalized experience.

A descriptive study completed in England documented the experiences of hospitalized women who had been admitted for a pregnancy-related complication of hypertension (Barlow, Hainsworth, & Thornton, 2008). Data were collected through semi-structured interviews one to three days after hospital admission. The sample consisted of 12 women who had been admitted for a hypertensive disorder. The participants' age ranged from 18 to 37 (M = 29.5), with a mean number of weeks gestation of 28.9 (range: 24 to 36). Seven participants were married, while others reported either living with a partner or being single. Findings suggest that these women were searching for an explanation to make sense of their situation. Some women were admitted to the hospital, but had not experienced any symptoms. The admission left them searching for answers and feeling like they were "frauds". Some women expressed that bed rest and medication could be done at home because they "felt fine". A roller coaster

of emotions was reported by the women, depending upon the most recent information regarding their condition they received. Women compared themselves socially (in a negative or positive way) to other women who had delivered a healthy baby and to those who had inadequate social support. However, participants in this study reported adequate social support from partners, family, and friends.

A recent study also sought to describe the lived experience of women on hospitalized bed rest using a phenomenological design (Rubarth et al., 2012). Data were collected through either hand-written journals or online blogs. Eleven participants were recruited from three antenatal clinics in the mid-western United States. Eight of the participants chose to keep a handwritten journal of their experience, while two participants chose to use the online blog for their experience. One participant used a combination of a handwritten journal and an online blog. Each of the journal entries varied in length and frequency (daily for more than two months to infrequent entries for only two weeks), with the average journal length approximately three weeks. The average age of the participants was 30 (range: 22 to 36). The weeks of gestation ranged from 20 to 33 (M = 26.4). The participants were hospitalized for various reasons, including premature rupture of membranes (n = 5), vaginal bleeding (n = 1), preterm labor (n = 3), preeclampsia (n = 1), and premature cervical dilation with subsequent cerclage placement (n = 1). The participants described "fighting a daily battle for the lives of their unborn children" (p. 400). With their descriptions, three theme categories emerged: the war within; fighting each battle; and bringing in reinforcements. The war within theme described their internal wars within themselves, such as fears and worries,

being on an emotional roller coaster, and searching for meaning. The participants described their fears of losing their unborn baby and expressed concerns about their other children and family at home. Additionally, many of them wrote about worries surrounding financial issues (e.g., loss of pay and cost of hospital stay) and the outcome of their pregnancy. Some participants described the experience as an emotional roller coaster by describing a wide array of emotions such as anger, boredom, frustration, sadness, hopefulness, impatience, anxiousness, and stress. Some participants expressed grief over the loss of a normal pregnancy, while others described feelings of envy towards those who were giving birth on the unit. As the war within themselves continued, some participants describe coping with their emotions and worries by searching for meaning of the experience (e.g., why and how it had occurred). The second theme, fighting each battle, described the participants' daily struggles. Many wrote about their daily physical and mental battles with the restrictions of bed rest. Many participants described the physical symptoms of their high-risk condition. Another aspect of this theme was the passage of time and participants' marking of time by their number of weeks gestation. Mentally, the women expressed the feelings of being a prisoner in the hospital because of the restrictions of bed rest, often affecting their ability to cope. However, despite their restrictions, the participants expressed that they would do whatever it takes to prolong their pregnancies. In the final theme, bringing in reinforcements, the participants described the strategies used to win their battle. Several participants described that visits received from family and friends provided a distraction for them. Also, healthcare providers and the care provided were seen as a distraction

during the experience. Also, the use of prayer and relying upon their faith was used to help cope with the experience. Rubarth et al. (2012) described the essential structure of the hospitalized experience for these women as follows:

> for the women in this study, pregnancy was not the tranquil or joyous time they had hoped for. Instead of happily planning for a new baby, the women expressed that they were fighting a war against their high-risk pregnancy diagnosis (p. 403).

The support needs of high-risk pregnant women with prolonged hospitalization were the focus of another study (Kent et al., 2015). A qualitative, descriptive design was used to identify and describe the support needs of high-risk pregnant women hospitalized for more than five days. Participants were recruited from an antenatal unit at a private hospital in South Africa. Eleven high-risk pregnant women on bed rest five days or longer were interviewed. Audio-recorded interviews were used for data collection and lasted between 25 to 40 minutes. The ages of the participants ranged from 22 to 38 (M = 29.2) and the average weeks gestation was 26.4 (range: 20-31). The majority of participants were carrying a singleton pregnancy (n = 8), with two participants carrying twins and one participant carrying triplets. High-risk diagnoses consisted of antepartum hemorrhage (n =3), preeclampsia (n = 4), preterm premature rupture of membranes (n = 3), and twin-to-twin transfusion (n = 1). Three main themes emerged: 1) a need for social support, 2) improvement of the environment, and 3) assistance with emotional adaptation and acceptance of prolonged hospitalization. The need for social support was predominantly expressed by the participants in the study. Most women expressed feelings of loneliness and isolation. They felt socially disconnected from being separated

from family members and saw this as a negative consequence of hospitalization. Additionally, the women expressed that being hospitalized for long periods of time was very stressful and social support was needed to help them cope with their situation. Hospital staff was also seen as a form of social support. The findings suggest that the length of hospitalization may influence the specific support needs of high-risk pregnant women hospitalized for a high-risk condition. The environment to which the women were exposed impacted how they experienced hospitalization. Throughout the study, the women expressed that the environment was restrictive and lacked privacy. Admission to the hospital was an emotional experience for the participants. They expressed the need to process and accept their altered pregnancy state. All of the participants stated they felt depressed during their stay. Their depression stemmed from feelings of anxiety, sadness, helplessness, and the inability to control the situation. Some participants described moments of utter despair and delightful moments when their condition improved. Kent et al. (2015) concluded that prolonged hospitalization for high-risk pregnant women disturbs the usual adaptation process of pregnancy and these women develop specific needs during the hospitalization that must be addressed.

Maloni and Kutil (2000) sought to identify the themes of discussion voiced during an antepartum support group of hospitalized high-risk pregnant women using a descriptive, exploratory qualitative design. Twenty-seven high-risk pregnant women who were hospitalized at a tertiary care center in a Midwestern state agreed to participate in the study. The women ranged in age from 16 to 38 ($M = 27.2$, $SD = 3.4$) and were largely Caucasian ($n = 23$). The majority of women were multigravidas ($n = 16$). The

high-risk diagnoses were preterm labor (n = 9), incompetent cervix (n = 4), placenta previa (n = 3), premature rupture of membranes (n = 4), and multiple gestation (n = 7). The range of the number of weeks gestation was 24 to 34. Thirteen weekly antepartum support group sessions were offered to the subjects, with 17 subjects participating once, six subjects participating twice, three subjects participating three times, and one subject participating five times. The findings revealed seven discussion themes: 1) coping activities, 2) family concerns, 3) negative emotions, 4) relationships with caregivers, 5) side effects of medical treatment, 6) psychosocial losses associated with bed rest, and 7) concerns for safety. The most commonly discussed topic was coping. Women in the group discussed methods that were used to help either themselves or other group members cope with issues of concern, including ways to cope with feelings of isolation, boredom, negative emotions, and family concerns. Family concerns were often discussed in the support group. Women expressed worries about their significant other, other children, finances, home management, and the family's response to the hospitalization. A major concern for the women was worry about managing child care and being missed by their children. A range of negative emotions was expressed during the support group sessions. These emotions included ambivalent feelings, anger, fear, guilt, loneliness, sadness, worry, and fear of "losing it." The women's relationships with healthcare providers was also discussed and focused on the negative interactions with healthcare providers. The women reported contradictions and inconsistencies in their care management. Physiologic side effects of various treatments such as bed rest, medication, and procedures were a concern for the women. They expressed various symptoms,

including dizziness, fatigue, weight loss, and weak legs. Losses associated with bed rest were expressed as isolation, loss of control, loss of roles, loss of a sense of self, and loss of their usual environment. Finally, women expressed concerns for safety (e.g., concern for the health of the fetus or their own health). Primarily, women worried about the baby's outcome (e.g., prematurity and need for intensive care). Some women in the group described being sent home prior to delivery as dangerous and envisioned the hospital as a "safe" place for them and their babies.

Hospitalization for a high-risk pregnancy condition is a stressful experience that can impact the woman physically, psychologically, and socially, potentially disrupting the usual process of adaptation in pregnancy (Gupton et al., 1997; Heaman & Gupton, 1998; Kent et al., 2015; Maloni & Kutil, 2000; Rubarth et al., 2012). Manifestations of stress stem from separation from family (Gupton et al., 1997; Heaman & Gupton, 1998), disruption of their normal daily activities (Stainton et al., 2005), loss of normal pregnancy experiences (e.g., preparing for baby and baby showers) (Leichtentritt et al., 2005), uncertainty and loss of control over the outcome (Heaman & Gupton, 1998), and concern for self and baby (Leichtentritt et al., 2005). Many women describe the hospitalized experience as an emotional roller coaster (Barlow et al., 2008; Rubarth et al., 2012), with many experiencing feelings of anger, fear, guilt, loneliness, sadness, worry, anxiety, and on occasion, depression (Barlow et al., 2008; Gupton et al., 1997; Kent et al., 2015; Maloni and Kutil, 2000; Rubarth et al., 2012). Social support during the experience is of great importance to the hospitalized woman, including support from their significant other, family, friends, and healthcare providers and is relied upon as a way of coping with

the situation. Other coping mechanisms used during the experience are keeping a positive attitude (Heaman & Gupton, 1998), use of prayer and reliance upon faith (Heaman & Gupton, 1998; Leichtentritt et al., 2005; Rubarth et al., 2012), learning more about their high-risk condition (Leichtentritt et al., 2005), and complying with the prescribed bed rest for the benefit of the baby (Heaman & Gupton, 1998).

Although the findings from these studies add to the body of knowledge surrounding the hospitalized experience, some data were collected through the participants' journaling about their experience (Gupton et al., 1997; Rubarth et al., 2012), with some women journaling inconsistently (i.e., one to two entries), while others journaled daily, leaving questions of what aspects of the experience were still unknown. Also, some data were collected through focus groups (Leichtentritt et al., 2005; Maloni & Kutil, 2000), with the majority of women participating in only one focus group session, potentially missing key aspects of the experience due to some women being hesitant to discuss their thoughts and/or feelings surrounding their hospitalized experience in this type of setting. Many of the studies lacked the use of a theoretical framework to guide them, leaving questions surrounding the theoretical foundation of the studies. In this study, women were interviewed separately in a private room, providing a quiet environment and allowing them the opportunity to share their pregnancy story. Also, the theoretical work of Rubin was used to guide the study and provided a framework in which to analyze the data collected.

Studies Focused on Stress during Hospitalization

Studies investigating the impact of antepartum hospitalization have found significant displays of stress in these women (Clauson, 1996; Gupton et al., 1997; Heaman, 1992; Heaman & Gupton, 1998; Maloni, 2010). Stress during a high-risk pregnancy has the potential to increase anxiety and depression to the extent that the woman's relationships are affected (Mercer et al., 1988). Some of the studies are out-dated, but still provide important knowledge to the current study.

A study by Heaman (1992) examined the relationships between the variables of stressful life events, mood disturbance, and social support among three groups of Canadian pregnant women: women with mild preeclampsia in an antepartum home care program, women with mild preeclampsia in an antepartum hospitalized setting, and women with no pregnancy complications. Sixty women in the third trimester of pregnancy were enrolled in the study. Non-probability sampling was used to obtain 20 subjects in each of the three groups. Group I subjects were women with mild preeclampsia that were admitted to an antepartum unit of an acute care hospital. Group II subjects were women with mild preeclampsia that were enrolled in an antepartum home care program. Group III subjects were low-risk pregnant women recruited from childbirth education classes. The majority of subjects were Caucasian (91.7%) and all subjects were married. The average age of the subjects was 28.2 (SD = 4.9; range: 20 to 42, with the average number of weeks gestation of 35.7 (SD = 2.2; range: 31 to 40). There were no significant differences between the three groups in age ($p = 0.627$), education ($p = 0.688$), or gestational age ($p = 0.078$). Forty-two women were

primigravidas and 18 women were multigravidas. The average number of days admitted to the hospital for Group I was 3.6 (SD = 1.9), while the average number days admitted to home care for Group II was 4.3 (SD = 1.7). Stressful life events were measured using the Life Events Questionnaire (LEQ), which allowed respondents to rate their perception of life events as "good" or "bad" that had occurred within the last year (Norbeck, 1984). Social support was measured by the Norbeck Social Support Questionnaire (NSSQ) (Norbeck et al., 1981). Mood disturbance was measured by the Profile of Mood States (POMS), which measures six identifiable mood states (tension-anxiety, depression-dejection, anger-hostility, vigor-activity, fatigue-inertia, and confusion-bewilderment) on a five-point scale from "not at all" to "extremely" (McNair, Lorr, & Droppleman, 1971). Findings suggest that there were no significant differences in negative life events, functional support, or network support among the three groups. However, there were significant differences ($p = 0.012$) in the total mood disturbance score between Group I (M = 38.11, SD = 31.27) and II (M = 16.06, SD = 20.19), and between Group I and III (M = 19.20, SD = 16.18). Additionally, Group I had significantly higher anxiety and depression scores than Group II and III ($p = 0.005$; $p = 0.004$, respectively). Moderate correlations were found between the negative life events scores and the total mood disturbance scores ($r = 0.491$), the anxiety subscale ($r = 0.427$), and the depression subscale ($r = 0.397$), indicating that stress was positively related to mood disturbance.

Clauson (1996) sought to describe how women hospitalized with high-risk pregnancy perceived the uncertainties and stress of their situations. A sample of 58 hospitalized antepartum women in two tertiary maternity hospitals in Canada were

recruited for the study. The subjects' age ranged from 21 to 39 (M = 30.3, SD = 4.4), with the average weeks gestation of 30.8 (SD = 4.4; range: 21 to 38 weeks). Sixteen of the subjects (28%) were primigravidas and 42 (72%) were multigravidas. The most commonly reported reasons for the hospitalization were: antepartum bleeding (32.8%), preterm labor (31.3%), premature rupture of membranes (8.6%), and hypertension (6.9%). The hospital length of stay for the subjects ranged from 2 to 42 days (M = 11.9, SD = 9.9), with the majority of subjects (67.3%) staying more than six days. Uncertainty and stress were measured using a researcher-adapted Uncertainty Stress Scale-High Risk Pregnancy Version (USS-HRPV). The scale was adapted from the Uncertainty Stress Scale (USS), which consists of three parts that measure the degree and stress of uncertainty (Hilton, 1994). The USS-HRPV was administered at two time points (48 hours after admission and prior to discharge). At 48 hours after admission, uncertainty scores were found to be low or moderate for 86% of the women, with 14% of the women reporting high uncertainty scores. The mean uncertainty stress scale score was 113.9 (SD = 38.5), with 53% of subjects scoring below the mean score. At the time of discharge, 91% of the subjects reported low uncertainty levels, while 9% reported high levels of uncertainty. The mean score was 95.7 (SD = 35.9), with 63% of women scoring below the mean score. Uncertainty at the second data collection point was found to be significantly lower ($t = 2.88$, $p = 0.006$) for the sample of women. There were no significant differences found in mean scores between primigravidas and multigravidas at either 48 hours after admission ($t = 0.65$, $p > 0.05$) or at time of discharge ($t = 0.77$, $p > 0.05$). There was a significant positive correlation between uncertainty and length of stay

($r = 0.23$, $p = 0.04$), indicating that women reported higher levels of uncertainty with longer hospital stays. Additionally, higher levels of uncertainty were positively correlated to higher levels of stress at both time points (Time 1: $r = 0.73$, $p < 0.001$; Time 2: $r = 0.71$, $p < 0.001$).

Mercer and Ferketich (1988) examined the effect of stress, social support, self-esteem, and mastery on anxiety and depression. High-risk and low-risk pregnant women and their mates were recruited for the study in the western United States. A total of 153 high-risk pregnant women (Group 1), 75 mates of the high-risk women (Group 2), 218 low-risk pregnant women (Group 3), and 147 mates of the low-risk women (Group 4) were recruited for the study. The mean age of each group were: Group 1: 28.65 (SD = 5.46, range: 18 to 45), Group 2: 31.08 (SD = 7.01, range: 20 to 61), Group 3: 28.56 (SD = 4.75, range: 19 to 42), and Group 4: 31.30 (SD = 6.29, range: 19 to 67). The groups did not differ significantly by socioeconomic status (SES), race, or marital status. The sample was largely Caucasian (74% in high-risk groups and 68% in low-risk groups). Preterm labor (72%) was the predominant diagnosis that led to hospitalization for the high-risk group. Stress was measured in two ways: perceived impact of negative life events and a pregnancy risk score. The perceived impact of negative life events was measured by Norbeck's (1981) Negative Life Events measure. Pregnancy risk was measured by Hobel, Youkeles, & Forsythe's (1979) measure to assess the woman's level of pregnancy risk. Social support was measured by Barrera's (1981) inventory of socially supportive behaviors. Self-esteem was measured by Rosenberg's (1965) self-esteem scale. Anxiety was measured by the State-Trait Anxiety Inventory (Spielberger et

al., 1983). Finally, depression was measured by the CES-D scale (Radloff, 1997). The mean pregnancy risk scores for Group 1 were 35.78 (SD = 19.19, range: 10 to 102) and Group 3 were 10.13 (SD = 8.47, range 0 to 49). High-risk women reported greater negative life-events such as stress (t = 2.40, p = 0.02), higher depression (t = 6.78, p = 0.001), and anxiety (t = 9.25, p = 0.001) than the low-risk women. Additionally, high-risk women reported receiving greater support than low-risk women (t = 2.35, p = 0.02). High-risk mates reported greater depression (t = 3.71, p = 0.001), higher anxiety (t = 0.42, p = 0.001), and less perceived support (t = -2.23, p = 0.03) than the low-risk mates. Gender differences were tested using two-tailed matched-pairs t tests. There were no significant gender differences found for stress from negative life events, self-esteem, size of network, and anxiety among high-risk couples. However, high-risk women did report higher received (t = 5.51, p = 0.001) and perceived support (t = 2.91, p = 0.05), lower sense of mastery (t = -2.74, p = 0.008), and higher depression (t = 3.10, p = 0.003) than their mates. In low-risk couples, there were no significant differences found for negative life events, self-esteem, perceived support, mastery, anxiety, or depression. However, low-risk women reported significantly larger support networks (t = 3.47, p = 0.001) and greater received support (t = 6.13, p = 0.000) than their mates.

Pregnant women who are hospitalized for their high-risk condition exhibit high levels of stress and uncertainty, with increasingly high levels of mood disturbances, anxiety, and depression (Heaman, 1992; Mercer & Ferketich, 1988). These high levels of stress can lead to not only psychological problems (e.g., anxiety and depression), but physical problems as well. Physically, stress can cause an increase in cardiovascular

response (e.g., elevated heart rate and blood pressure) and/or an increase in stress hormones (e.g., adrenaline, cortisol, and norepinephrine). These maternal stress hormones can interfere with placental blood flow, potentially causing preterm birth (Texeira et al., 1999; Mulder et al., 2002). Furthermore, constant or prolonged stress can contribute to long-term problems for the heart and blood vessels (Mulder et al., 2002). Despite the abundance of literature regarding stress during the hospitalized experience and how it affects women, there is a gap between what is known about stress and how it may affect the developmental processes of pregnancy and the woman's developing relationship with her baby. Clearly, women with high-risk pregnancies experience stress, and bed rest can increase stress. This important variable should be considered when studying the developmental processes of pregnancy in high-risk women, including the process of prenatal attachment.

Studies Focused on Anxiety and Depression during Hospitalization

Maloni, Park, Anthony, and Musil (2005) assessed depressive symptoms among women hospitalized for high-risk pregnancy using a longitudinal repeated measures design. Depressive symptoms were assessed with three measures at three time points: upon hospital admission, at the second week of hospitalization, and at the fourth week of hospitalization. The sample consisted of 89 women who had been admitted for partial bed rest at one of three hospitals in mid-western United States. At the second data collection time point, the sample size was reduced to 52 women, due to either delivery or discharge of earlier participants. At the final data collection time point (4 weeks after admission); the sample size was reduced to 37 women. Participants were primarily

Caucasian (82%) and married (66.3%). Ages ranged from 16 to 43 (M = 28.06, SD = 6.7). Most participants were multigravidas (82%) and currently had a singleton pregnancy (77%). Most of the women (69%) were admitted for treatment of preterm labor or preterm labor plus another diagnosis (not reported). Other diagnoses were placenta previa and preterm rupture of membranes. The number of weeks gestation at time of admission ranged from 21 to 33 (M = 28.3, SD = 2.9) and the number of days on bed rest ranged from 10 to 70 (M = 29.1, SD – 13.2). The mean prenatal Hobel Risk Score for severity of complications was 23.25 (SD = 10.57) (p. 20). Three depression instruments were used to measure depressive symptoms across the three time points. The CES-D (Radloff, 1977), the POMS (McNair et al., 1992), and the Multiple Affect adjective Checklist-Revised (MAACL-R) (Lubin & Zuckerman, 1999) were used to measure depressive symptoms across the hospitalization. The mean for each of the measures across all data collection points were: CES-D mean of 18.5 (SD = 9.01), POMS mean of 14.5 (SD = 10.54), and MAACL-R mean of 9.96 (SD = 7.41). The mean scores for depressive symptoms for the participants decreased from hospital admission to two weeks since admission (CES-D: M = 17.3, SD = 9.5; POMS: M = 11.6, SD = 8.7; MAACL-R: M = 8.35, SD = 6.9). At four weeks since admission, the women (n = 37) who remained hospitalized had a significant decline in depressive symptoms when measured by the POMS (M = 12.5, SD = 9.8, $p = 0.02$) and MAACL-R (M = 7.2, SD = 6.5, $p = 0.03$). There was no significant decline noted in depressive symptoms when measured by the CES-D (M = 17.4, SD = 9.1). However, despite the significant decline

in scores, all depressive scores (assessed by all three measures) remained high after four weeks of hospitalization.

One study investigated whether maternal anxiety in the third trimester of pregnancy was associated with an increased uterine artery resistance index, potentially causing an impaired blood flow to the unborn baby (Teixeira et al., 1999). Women were recruited from childbirth classes in England. One hundred women agreed to participate in the study, with no demographic information reported. However, women were excluded from the study for the following reasons:

> 1) any medical disease, including preeclampsia or antepartum hemorrhage, 2) being a smoker, 3) previous adverse obstetric outcome, such as preterm delivery and small for gestational age baby, 4) assisted reproductive technology (ART) conception, 5) abnormal volume of amniotic fluid or abnormal velocity waveforms from the umbilical artery, 6) known small for gestational age fetus on a previous ultrasound scan, and 7) multiple pregnancy (p. 154).

Prior to a Doppler ultrasound being completed, subjects were asked to complete two questionnaires. The first was a simple researcher-developed questionnaire to determine the subjects' history of emotional problems, major life events within the last 3 months, and alcohol consumption. The second questionnaire examined state and trait anxiety using the STAI measure (Spielberger, 1970). Cut-off scores for the STAI were set at > 40 for state and trait anxiety. Doppler ultrasounds were completed on each of the subjects. A color Doppler ultrasound was used to identify the main branch of the uterine artery and blood flow velocities were obtained. Waveforms were recorded from uterine arteries, the fetal middle cerebral artery, and umbilical artery. The resistance index for the uterine arteries and the pulsatility index were derived from five consecutive uniform

wave forms. The state anxiety scores (Median = 28.5, range: 20-61) were lower than the trait anxiety score (Median = 36, range: 20-67, $p < 0.001$). Fifteen women scored > 40 for state anxiety, with 32 women scoring > 40 for trait anxiety. A significant association was found between the maximum resistance index and both state anxiety scores ($r = 0.31$, $p < 0.002$) and trait anxiety scores ($r = 0.28$, $p < 0.005$). Also, a significant association was found between mean resistance index and both state anxiety scores ($r = 0.28$, $p < 0.005$) and trait anxiety scores ($r = 0.21$, $p < 0.03$). The groups were dichotomized by using the predetermined cut off point score of > 40 for anxiety scores. Women in the high state anxiety group (> 40) demonstrated significantly worse uterine velocity waveforms than those in the low state anxiety group (< 40), indicating that women with increased anxiety are more likely to have abnormal uterine artery blood flow than women with less anxiety.

Byatt et al. (2014) sought to assess the rates of anxiety and depression symptoms, changes in anxiety and depression symptoms, and the rates of mental health treatment among women hospitalized for a high-risk pregnancy condition. Women were recruited from an inpatient antenatal unit at a large tertiary care facility in central Massachusetts. A total of 62 women chose to participate in the study. The majority of subjects were Caucasian (n = 41, 66%) and married (n = 39, 63%). The average age of the subjects was 30.3 (SD = 6.6). The mean number of weeks gestation was 27.7 (SD = 4.1). High-risk pregnancy conditions included incompetent cervix (n = 22), preterm labor (n = 7), premature rupture of membranes (n = 15), vaginal bleeding/placenta previa (n = 7), and preeclampsia (n = 4). The length of hospital stay ranged from 1 to 99 days. Subjects

completed all questionnaires every week throughout their hospital stay, with the number who completed subsequent surveys decreasing with time due to delivery or discharge. The EPDS was used to measure depression during pregnancy and those with a history of depression outside of pregnancy (Cox et al., 1987). Anxiety was measured by the Generalized Anxiety Disorder-7 (GAD-7), a self-administered seven-item tool used to screen for and assess the severity of generalized anxiety disorder (Spitzer, 2006). The 12-Item Short-Form Health Survey (SF-12), a shorter version of the Medical Outcomes Study 36-Item Short-Form Health Survey, was used to measure quality-of-life (Ware, Turner-Bowker, & Gande, 2002). A statistically significant decrease in EPDS and GAD-7 scores was noted throughout the course of hospitalization. However, there were no statistically significant changes in the SF-12 scores throughout the hospitalization. Women with a history of mental health diagnosis (n = 14) demonstrated higher mean EPDS scores (M = 9.9, SD = 4.5, $p < 0.001$) than women (n = 38) without a history of mental health diagnosis (M = 5.3, SD = 4.1). Also, the mean EPDS scores were higher in women (n = 14) with a history of mental health diagnosis (M = 8.6, SD = 4.0, $p < 0.001$) than women without (n = 45, M = 6.3, SD = 5.0). The mean GAD-7 scores were higher in women with either a history of mental health treatment or diagnosis. Twenty-seven percent of participants (n = 18) had symptoms of depression (EPDS $\geq$ 10) and 13% (n=8) had symptoms of anxiety (GAD-7 $\geq$ 10). Additionally, the history of mental health diagnosis predicted depression symptoms [odds ratio (OR = 4.54; 95% CI: 1.91–7.17) and anxiety symptoms (OR = 5.95; 95% CI: 3.04–8.86)]. However, out of the 48 participants with no mental health diagnosis, ten (21 %) had an EPDS score $\geq$10.

Dysphoria among hospitalized high-risk pregnant women was the focus of a study by Maloni et al., (2002). Dysphoria was defined as a "composite of symptoms of negative affect across the antepartum and postpartum" (p. 92). The overall purpose of the study was to describe dysphoria and to identify the relationship between dysphoria and the length of bed rest and maternal and fetal/neonatal indices of risk scores. Sixty-three pregnant women admitted to the hospital for antepartum bed rest were recruited for the study. The subjects were part of a larger five year study regarding physical and psychosocial aspects of bed rest. Most of the subjects were Caucasian (88.9%) and married (68.3%). Eighty-one percent had a singleton pregnancy. The subjects' age ranged from 16 to 40 (M = 28.3, SD = 6.5), with an average weeks gestation of 28.7 (SD = 2.8, range: 21 to 33). The primary diagnosis for admission was either preterm labor (n = 17) or preterm labor combined with another diagnosis (n = 25) (i.e., rupture of membranes, abruption, multiple gestation, etc.). The length of hospital stay ranged from 8 to 70 days (M = 29.8, SD = 13.94). The mean gestational age at birth was 34.7 weeks (SD = 2.9, range: 27 to 40). Data were collected at six different time points: 1) at admission, 2) prior to delivery, 3) two days postpartum, 4) two weeks postpartum, 5) four weeks postpartum, and 6) six weeks postpartum. Dysphoria was measured using the MAACL-R (Lubin & Zuckerman, 1999). The MAACL-R has five scales (anxiety, depression, hostility, positive affect, and sensation seeking) and consists of 132 adjectives that refer to self-reported mood for that particular day. The Hobel and Creasy risk Assessments were used to measure the maternal and fetal/neonatal risk (Hobel et al., 1979; Creasy, Gummer, & Liggins, 1980). The Hobel risk assessment was used to assess

medical indicators of risk for mother and infant by healthcare professionals. A score > 10 indicates high risk. The Creasy risk assessment includes demographic and medical predictors of risk. The 42 items are averaged to obtain a total score. A score of 0-5 indicates low risk, 6-9 medium risk, and > 10 indicates high risk (Creasy et al., 1980). Dysphoria was found to be the highest upon admission and significantly decreased over time, from admission to postpartum ($F = 23.58$, $p < 0.001$, eta squared = 0.276). The positive affect of the subjects significantly increased across the antepartum and peaked at 2 days postpartum ($F = 53.16$, $p < 0.001$, eta squared = 0.462). There were no significant correlations between antepartum dysphoria and length of hospitalization. Also, antepartum dysphoria was not significantly correlated with fetal gestational age upon hospital admission. However, in the postpartum, dysphoria was correlated with gestational age at birth at all time points, suggesting the higher the gestational age at birth, the lower the dysphoria. At six weeks postpartum, the Creasy and Hobel risk scores were significantly correlated with postpartum dysphoria, but not at any other time. Overall, the Hobel and Creasy obstetric risk scores were very high and the two tools were significantly correlated ($r = 0.53$, $p < 0.01$).

Antenatal depression and anxiety have been associated with adverse outcomes of the mother and baby. Dagklis et al. (2016) investigated depressive symptoms and associated factors in hospitalized high-risk pregnant women. Subjects were recruited from a high-risk pregnancy unit in Greece and were admitted for treatment at the time of data collection. One hundred fifty-seven subjects agreed to participate in the study. The range of ages for the subjects was 14 to 47 (M = 30, SD = 6), with 71.3 % (n = 112) of

the subjects below the age of 35. The mean number of weeks gestation was 33 (SD = 3, range: 24–36). Reasons for hospitalization were threatened preterm labor (n = 65, 41.4 %), intra-uterine growth restriction (n = 42, 26.8%), rupture of membranes (n = 15, 9.6%), hypertensive disorder (n = 10, 6.4%), gestational diabetes (n = 8, 5.1%), and other (n = 17, 10.8%). The majority of the subjects were married (n = 134, 85.4%). The mean length of hospitalization was 5 days (range: 1-72 days). Depression was measured by the Edinburgh Postnatal Depression Scale (EPDS) and subjects with scores > 13 were considered to have a high probability of suffering from depression (Cox et al., 1987). The mean EPDS score was 9.85 (SD = 5.5; range 0–24) among the subjects. The prevalence of antenatal depression (EPDS scores > 13) was 28% (n = 44), with six subjects scoring positive on the suicide-screening question of the EPDS. Several factors were found not to be significantly associated with antenatal depression: reason for admission, maternal age, gestational age, body mass index before pregnancy, marital status, maternal education, employment status, family monthly income, relationship with the partner, and planned pregnancy. However, abortion thoughts ($p = 0.011$) and smoking ($p = 0.015$) were found to be associated with depression.

Another study investigated factors that moderated anxiety and depression in high-risk pregnant women (Denis et al., 2012). The overall purpose of the study was to evaluate anxiety and depressive symptoms and to examine the impact of self-esteem, social support and coping strategies on those symptoms in hospitalized high-risk pregnant women. Fifty-five women hospitalized for high-risk pregnancy agreed to participate in the study and were recruited from a hospital in France. The women were aged from 19 to

43 (M = 30.7, SD = 5.14). The mean weeks gestation was 27.4 (range: 8–36 weeks) and the average length of hospitalization was 29.6 days (SD: = 29.9 days, range: 1–120 days). In France, hospitalization for a high-risk condition can be in the hospital or home setting. Sixteen women (29%) were hospitalized in the antenatal unit and 39 women (71%) were supervised at home. Over half of the subjects were primiparas (52.7%). The two most common high-risk conditions that warranted hospitalization were cervical change (n = 25, 45.5%) and preterm contractions (n = 20, 36.4%). Depression was measured by the EPDS (Cox et al., 1987). Anxiety was measured using the French version of the High Risk Pregnancy Stress Scale (HRPSS) (Goulet et al., 1996). The HRPSS allowed the subjects to rate the degree of stress for different situations on a scale of 0 to 100. The Revised Prenatal Coping Inventory (Nu-PCI) was used to measure coping strategies (Yali & Lobel, 1999). Perceived social support was evaluated using the Questionnaire de Soutien Social Perçu (Perceived Social Support Questionnaire; QSSP) (Bruchon-Schweitzer, 2002) and self-esteem was evaluated using the 10-item Rosenberg Self-Esteem scale (Rosenberg, 1965). Overall, the subjects had an average EPDS score of 14.23 (SD = 5.45) with 32 subjects having scores $\geq$ 14, which is an indication of antenatal depression. The average HRPSS scores were 42.4 (SD = 16.48) for the 'Restriction' subscale; and 54.05 (SD = 17.09) for the 'Pregnancy' subscale. The average self-esteem score was 30.36 (SD = 5.26). Comparisons between groups (home vs. hospital) showed no significant differences on the EPDS, anxiety scores, coping strategies (planning/preparation, avoidance, & spirituality/positivity scale), social support (emotional support, material support, informative support, & esteem support) and self-

esteem. Because no differences were found between groups, all other comparisons were made as one group. Significant correlations were found between depression and self-esteem (Rho = –0.48; $p < 0.05$), avoidant coping strategies (Rho = 0.41; $p < 0.05$), total anxiety (Rho = 0.31; $p < 0.05$), and satisfaction with informational support (Rho = –0.28; $p < 0.05$). Additionally, anxiety symptoms were found to be correlated with self-esteem (Rho = –0.34; $p < 0.05$), avoidant coping strategies (Rho = 0.29; $p < 0.05$), and spiritual coping strategies (Rho = 0.27; $p < 0.05$). In the regression analysis, two predictors were found related to depression: self-esteem ($\beta = –0.33$; $p = 0.02$) and social support (providing information) ($\beta = –0.27$; $p = 0.02$). In a second regression analysis, two predictors were found related to anxiety: age ($\beta = –0.27$; $p = 0.04$) and EPDS score ($\beta = 0.28$; $p = 0.05$).

Two groups, a high-risk pregnancy group (i.e. medical problems in the mother or fetus) and a normal term pregnancy group, were used to examine the prevalence and risk factors of postpartum anxiety and depression (Zadeh et al., 2012). Four hundred women (200 in each group) were recruited from three postnatal clinics in Iran. The mean age of the subjects was 32 (SD = 3.78, range: 16-43 years). The following pregnancy complications were identified in the high-risk pregnancy group: diabetes, preeclampsia/eclampsia, preterm labor, renal diseases, and threatened abortion. Depression symptoms were measured by the Beck Depression Inventory (BDI) (Beck & Beck, 1972). The State-Trait Anxiety Inventory (STAI) was used to measure anxiety symptoms (Spielberger et al., 1987). The prevalence and overall severity of both anxiety and depression symptoms in the high-risk pregnancy group was higher than those in the

normal term pregnancy group ($p < 0.001$). Severe anxiety symptoms were reported by 92.5% (n = 185) of subjects in the high-risk group, compared to 79.5% (n = 159) of subjects in the normal term group. Furthermore, moderate to severe depression symptoms were reported by 52.5% (n = 105) of subjects in the high-risk group, compared to 31.5% (n = 63) of subjects in the normal term group. Additionally, the association between high-risk pregnancy and symptoms of postpartum anxiety and depression was found to be related to the following factors: age, desirability of the pregnancies, gravida, interval between pregnancies, and number of abortions. For instance, the older the woman was, the higher the rate of postpartum anxiety and depression.

High levels of anxiety and depression are prevalent among hospitalized high-risk pregnant women (Byatt et al., 2014; Dagklis et al., 2016; Denis et al., 2012; Maloni et al., 2002; Zadeh et al., 2012). Admission to the hospital for the high-risk condition can elicit high levels of anxiety and depression. Although these levels may decrease the longer the women are hospitalized, anxiety and depression levels still are higher in hospitalized high-risk women, compared to most pregnant women without complications (Maloni et al., 2002). Similar to stress, prolonged anxiety can increase the risk of preterm delivery due to increased uterine arterial resistance and decreased uterine blood flow (Teixeira et al., 1999). In addition to anxiety, high-risk women exhibit high levels of depression symptoms, with many reporting moderate to severe symptoms, compared to women without pregnancy complications. Although evidence of anxiety and depression in high-risk pregnant women exists, little is known about how these symptoms may affect the developing relationship between mother and baby.

Hospitalization and Its Impact on Family

Family support is a key aspect of the hospitalized experience. During hospitalization, many women rely upon their family frequently and worry about the strain it may have on them (e.g., more responsibilities at home and hospital visitations). Sittner et al. (2005) examined the psychosocial impact a high-risk pregnancy has on the family and identified family strengths that assist families to meet the challenges associated with the high-risk pregnancy. Participants were recruited from a Midwestern maternal-fetal medicine practice. Five women that were currently hospitalized for a high-risk pregnancy condition and three receiving outpatient high-risk care agreed to participate in the study. The high-risk diagnoses included multiple gestation, preterm labor, premature rupture of membranes, and fetal anomalies. The weeks of gestation ranged from 15 to 34. Seven participants were multiparas. The majority of women were married (n = 6). Audio-recorded interviews using open-ended questions were used. Three themes emerged: mixed emotions, adjustment and support, and informative care. The experience elicited an array of mixed emotions. Participants described their pregnancy as happy, scary, overwhelming, excited, difficult, and stressful. The majority of the participants stated that their family was adjusting and adapting positively to their hospitalization from the support that they had received from others. Also, their previous relationships with others had a big impact on their ability to cope with the changing circumstances that surrounded their high-risk pregnancy. Keeping the participants informed of their plan of care and having access to health information was important for these women. The second purpose of the study was to explore family strengths. Several family strengths

were described: the ability to manage stress and crisis, appreciation and affection for each other, commitment to the family, effective positive communication, enjoyable time with one another, and spiritual well-being.

Even with the increased responsibility at home, many families adjust and adapt positively to the situation, which helps the women in their ability to cope more effectively with the hospitalization (Sittner et al., 2005). However, these findings are from one study, and how the hospitalized experience affects the pregnant woman and her family has not been well studied. It is possible that some families may have difficulty adapting to the woman's hospitalization, potentially impacting how the woman perceives her experience and how she views the pregnancy.

Coping Strategies for the Hospitalized High-Risk Pregnant Woman

Women use a variety of different coping strategies to help with the experience of hospitalization. A positive attitude, accepting the situation, setting goals, knowing that bed rest can help the baby and praying are commonly used coping strategies (Clauson, 1996; Gupton et al., 1997; Heaman, 1992; Maloni & Kutil, 2000; Price et al., 2007; Stainton et al., 2005). Social support is another common coping mechanism used among high-risk pregnant women (Gupton et al., 1997; Giurgescu et al., 2006; Kent et al., 2015; Lederman et al., 2013; Rubarth et al., 2012). Social support can be obtained from significant others, family, friends, and healthcare providers. Having visitors and support throughout the hospitalized experience is important (Gupton et al., 1997). Healthcare providers can also be a source of social support and have been found to help high-risk

pregnant women with coping (Giurgescu et al., 2006; Gupton et al., 1997; Kent et al., 2015; Rubarth et al., 2012).

Giurgescu et al. (2006) investigated whether prenatal coping strategies mediated the effects of uncertainty and social support on the psychological well-being of women with a high-risk pregnancy, using a cross-sectional, descriptive, correlational design. The transactional model of stress and coping was used to guide the study (Lazarus & Folkman, 1984). Subjects were recruited from maternal-fetal medicine clinics at two university-based medical centers in the Midwest. One-hundred five women chose to participate in the study. The average age of the participants was 28, with the mean number of weeks gestation of 32 (SD = 3.4, range: 24-36). Most participants were African American (38%) and married (57%). Although none of the participants were hospitalized at the time of data collection, a mean of 2.17 high-risk diagnoses was reported (range: 1-6 diagnoses). The most prominent diagnoses were: pregnancy-induced hypertension or preeclampsia (n = 12, 11.4%), abnormality of tests (e.g., triple screen) (n = 10, 9.8%), and gestational diabetes (n = 8, 7.7%). Additionally, 51% of the subjects had problems during a previous pregnancy that placed them at risk during the current pregnancy. The most common previous problems were miscarriage (n = 30, 28.6%), preterm labor/delivery (n = 23, 21.9%), and pregnancy-induced hypertension/preeclampsia (n = 12, 11.4%). Four instruments were used to measure the variables in the study. Uncertainty regarding specific condition-related situations was measured using the Mishel Uncertainty in Illness Scale (MUIS) (Mishel, 1997). The MUIS contains 33 items assessing four dimensions (ambiguity, complexity,

inconsistency, & unpredictability) with a five-point Likert scale. The total score may range from 32 to 160, with higher scores indicating greater uncertainty. The Medical Outcomes Study (MOS) Social Support Survey (Sherbourne & Steward, 1991) was used to measure perceived support. Nineteen items assess four functional domains of social support (emotional/informational, tangible, affectionate, & positive social interaction) with a five-point Likert scale. All 19 items are summed and a total score ranging from 19 to 95 is possible, with higher scores indicating a greater perceived availability of support. The Prenatal Coping Inventory (Yali & Lobel, 1999; Yali & Lobel, 2002) was used to measure prenatal coping strategies for the high-risk pregnant subjects. Twenty-two items comprise the scale, with four subscales (preparation, avoidance, positive interpretation, and prayer). Higher scores on each subscale indicate greater use of that particular coping strategy. The Psychological General Well-Being Index (PGWB) was used to measure subjective well-being (Dupuy, 1984). Twenty items on a six-point Likert scale (0 = most distress to 5 = most well-being) composed six subscales: positive well-being, general health, vitality, depressed mood, anxiety, and self-control. The total score ranges from 0 to 110, with scores > 73 indicating a greater sense of well-being. Overall, the subjects reported low levels of uncertainty and high level of social support. Subjects reported using prayer, preparation for motherhood, and positive interpretation to cope with their high-risk pregnancy condition. Avoidance was the least frequently used prenatal coping strategy. In the study, 27.6% of the women reported having severe distress and 26.7% had moderate distress, with 45.7% reporting a positive well-being. Uncertainty was positively correlated with avoidance ($r = 0.43$, $p < 0.001$) and negatively correlated with

social support (r = -0.45, $p < 0.001$), positive interpretation (r = -0.30, $p < 0.001$), and psychological well-being (r = -0.48, $p < 0.001$), indicating that women with higher levels of uncertainty used more avoidance and less positive interpretation to cope. Additionally, the subjects reported less social support and greater distress. Social support was positively correlated with preparation (r = 0.25, $p < 0.05$), positive interpretation (r = 0.26, $p < 0.001$), and psychological well-being (r = 0.43, $p < 0.001$) and negatively with avoidance (r = - 0.27, $p < 0.001$), indicating women with more social support used more preparation and positive interpretation and less avoidance to cope with their high-risk pregnancy. Furthermore, positive interpretation of the situation was positively correlated with psychological well-being (r = 0.43, $p < 0.001$), while avoidance was negatively correlated with psychological well-being (r = -0.67, $p < 0.001$), indicating women who used positive interpretation had less distress. Women who used avoidance reported more distress.

Another study sought to discover the spiritual beliefs and practices of high-risk pregnant women hospitalized for pregnancy complications (Price et al., 2007). Twelve pregnant women admitted to an antenatal unit for pregnancy complications agreed to participate in the study. The age of the women ranged from 20 to 39 years and all were Caucasian. Of the 12 women, seven were affiliated with a Christian denomination and five claimed no religious affiliation. Half of the women (n = 6) had given birth previously to healthy babies, while two women reported a prior pregnancy loss. Pregnancy complications varied among the group and included preterm labor, premature rupture of membranes, bleeding, and twin-to-twin transfusion. Data were collected using

a naturalistic approach with face-to-face interviews and data were analyzed using thematic analysis. Four themes emerged during data analysis: high-risk pregnancy as a challenge, seeking a spiritual language, what makes you who you are, and everything will be okay. The women in the study expressed the challenges of a high-risk pregnancy. All women were hospitalized for their conditions, which separated them from their family, friends, and their communities. The women expressed worry and concern for their children at home, the health of their unborn baby, and the increased family stress caused by their pregnancy complication. What had been a positive experience for them and their families had now become a "daunting and detaching situation in their lives, leaving them feeling anxious and alone" (p. 66). The theme of seeking a spiritual language helped describe the women's spirituality during the hospitalized experience. It appeared that cultural and religious concepts both assisted and restricted many of the women in their search to understand and express their own spiritual experience. Many women with or without religious affiliations struggled to describe their experience outside of a religious context. Although the women found difficulty in clearly describing aspects of their spirituality, they found it easy and comfortable to discuss the importance of their spiritual beliefs in their lives. Women spoke of their inclination to pray, wish, or hope to what they hold as "sacred during their high-risk pregnancy experience" (p. 67). The final theme of "everything was going to be okay" described the women's relationship with their God (or the spiritual realm) during the stressful hospitalized experience. Many women described how prayer and their interaction with a higher being helped "calm their fears and alleviate their sense of aloneness" during the experience (p. 67). The results of

this study indicate that spirituality was an essential part of these women's lives and of the high-risk pregnancy experience.

Effective coping mechanisms are essential during the hospitalized experience and various strategies have been identified (e.g., social support, prayer, preparing for motherhood, and keeping a positive attitude) (Giurgescu et al., 2006; Price et al., 2007). Although many coping mechanisms have been identified, social support and spiritual beliefs are the most used coping mechanisms. Social support can lead to a positive interpretation of the experience and improve/maintain a woman's psychological well-being (Giurgescu et al., 2006). Additionally, hospitalized women rely upon their faith and the use of prayer to cope with the experience (Giurgescu et al., 2006; Heaman & Gupton, 1998; Leichtentritt et al., 2005; Rubarth et al., 2012; Price et al., 2007). Many women are inclined to hope, pray, and wish for a good outcome for the pregnancy, calming their fears (Price et al., 2007).

Physiological Effects of Hospitalized Bed Rest

The physiological side effects encountered by women hospitalized for bed rest have been studied (Gupton et al., 1997; Rubarth et al., 2012; Stainton et al., 2005). Sleep disturbances are common among hospitalized women due to changes in the sleep-wake cycle while in the hospital. Most women report loss of stamina while on bed rest and tire more easily than before (Gupton et al., 1997; Maloni, 2010; Rubarth et al., 2012; Stainton et al., 2005). Other side effects reported in the literature are problems with digestion, constipation, physical aches and pains, sore joints, mobility issues, weight loss, and loss of muscle tone (Gupton et al., 1997; Rubarth et al., 2012; Stainton et al., 2005). These

side effects of bed rest can have an impact on short and long term maternal health, both physically and psychologically. In a study investigating the efficacy and safety of antepartum bed rest, Maloni and Kutil (2000) reported more serious physiological side effects that can occur from bed rest, including muscle atrophy, possible bone loss, increased risk of deep vein thrombosis, and cardiovascular deconditioning. These serious complications can persist into the postpartum period. Often, serious symptoms are unrecognized by the healthcare provider and women are discharged home in a deconditioned state, unaware of the need to recover from both childbirth and bed rest (Maloni, 2000).

Maloni and Schneider (2002) assessed change in gastrocnemius muscle metabolism across antepartum bed rest and recovery during the first six weeks postpartum. Sixty-five women were recruited from antepartum units of three tertiary care hospitals in two Midwestern cities. Subjects were primarily Caucasian (63.1%) and married (60%). Ages ranged from 16 to 40 (M = 28.0, SD = 6.8). Most subjects were multigravidas (80%) and 18% had multiple gestation. The admitting diagnoses of the subjects were preterm labor (27.7%), preterm labor combined with another pregnancy diagnosis (33.8%), preterm rupture of membranes (18.5%), placenta previa (7.7%), placental abruption (3.3%), or a combination of unspecified non-preterm labor diagnoses (9%). The number of weeks gestation of the pregnancy upon hospital admission ranged from 21 to 33 (mean = 28.4; SD = 3.0) and the number of weeks gestation at birth was 34.1 (SD = 3.3, range: 24-40 weeks). The number of days hospitalized ranged from 5 to 70 (M = 24.77, SD 14.6). Additionally, 26 subjects (40%) were on bed rest prior to

hospital admission and enrollment in the study (M = 22.7, SD = 18.24, range: 2-89 days). Data collection for measures of muscle metabolism occurred upon hospital admission, at the end of the antepartum period, and at six weeks postpartum. Postpartum symptom data were collected at two days postpartum and weekly through six weeks postpartum. Muscle metabolism was assessed using a noninvasive dual wavelength hemoglobin/myoglobin (Hb/Mb) spectrophotometer. This device measures muscle metabolism by measuring oxygenation/deoxygenation of the muscles prior to and following a short three minute exercise program. Postpartum symptoms associated with muscle disuse were assessed with a researcher-developed, self-report Postpartum Symptom Checklist. The checklist consisted of 49 items, which assessed the influence of bed rest upon various organ systems. However, only symptoms associated with muscle disuse (n = 12) or mobility (n = 7) were reported. The length of time needed for the subjects' muscle to reoxygenate after exercise significantly increased from hospital admission through discharge (or delivery) ($t = 2.1$, $p = 0.05$). The length of time needed for postpartum muscle reoxygenation after exercise significantly decreased ($t = 0.83$, $p = 0.05$). Because some women experienced bed rest prior to hospital admission, the subject were analyzed in 2 groups, women who were not on bed rest prior to hospital admission (n = 39) and those who were (n = 26), to determine if there was difference in muscle reoxygenation. Muscle reoxygenation scores were found to be significantly higher for those who had previously been on bed rest ($t = 8.6$, $p = 0.05$), but scores were not significantly different at the end of the antepartum or postpartum period. The musculoskeletal deconditioning symptoms occurring from 2 days postpartum to six

weeks postpartum were reported as soreness in arm, back, neck, and leg muscles, fatigue, pedal edema, and shortness of breath. At six weeks postpartum, 45% of the subjects were still experiencing back muscle soreness and 21% reported persistent neck muscle soreness. Assessment of mobility during the postpartum period revealed that women experienced difficulty in all areas of walking and improved over six weeks postpartum. Support to walk was needed during the first week postpartum for a number of subjects with more than 40% needing help to sit. Most women (77%) began using stairs during the first week at home. However, for some women, stair-climbing difficulties and knee buckling continued until 6 weeks postpartum.

The physiological effects of hospitalized bed rest have been the focus of a few studies, with commonly reported side effects, such as sleep disturbances, loss of stamina, gastrointestinal issues, mobility issues, and weight loss (Gupton et al., 1997; Maloni, 2010; Rubarth et al., 2012; Stainton et al., 2005). Muscle atrophy, possible bone loss, and cardiovascular conditioning have occurred in some women and can lead to a prolonged recovery in the postpartum period (Maloni & Schneider, 2002), potentially negatively impacting the motherhood experience.

State of the Science in the Experience of Antenatal Hospitalization among High-Risk Pregnant Women

The experience of hospitalization during a high-risk pregnancy has been investigated using multiple types of research designs and has included women with various high-risk diagnoses. Various aspects of the hospitalized experience have been explored, including stress and adaptation (Clauson, 1996; Heaman, 1992; Heaman &

Gupton, 1998; Mercer & Ferketich, 1988), anxiety levels (Dagklis et al., 2016; Denis et al., 2012; Kent et al., 2015), depressive symptoms (Dagklis et al., 2016; Denis et al., 2012), family functioning (Clauson, 1996), maternal identity (Lederman et al., 2013; Markovic et al., 2006; Mu, 2004), physiological and psychological side effects (Maloni et al., 2002), and coping strategies (Giurgescu et al., 2006; Price et al., 2007).

Studies surrounding the hospitalized experience have examined stress and adaptation (Clauson, 1996; Heaman, 1992; Heaman & Gupton, 1998; Mercer & Ferketich, 1988) and it was overwhelmingly found that pregnant women hospitalized for a high-risk condition exhibit extreme levels of stress. Bed rest during a high-risk pregnancy is stressful physically (Maloni & Schneider, 2002) and psychologically (Clauson, 1996; Heaman, 1992; Mercer & Ferketich, 1988). Furthermore, women who are prescribed hospital bed rest experience more stress than those women who are prescribed home bed rest (Heaman & Gupton, 1998; Heaman, 1992).

Studies have investigated anxiety and depression in high-risk hospitalized women (Dagklis et al., 2016; Maloni et al., 2002; Zadeh et al., 2012) and found that these women predominantly exhibit symptoms of anxiety and depression, more than women with no pregnancy complications. In one study, 92.5% of high-risk women reported severe anxiety in the postpartum period, while 52.5% reported moderate to severe postpartum depression following their high-risk pregnancies (Zadeh et al., 2012). Additionally, high anxiety levels have been found to negatively affect uterine blood flow, potentially increasing the chance of a preterm delivery (Teixeira et al., 1999).

Social support and various other coping strategies, including the use of prayer were found to help with the psychological effects of the hospitalization (Giurgescu et al., 2006; Price et al., 2007). Women who have less social support exhibited greater levels of distress than women who reported a sufficient amount of social support (Giurgescu et al., 2006). The use of prayer and reliance upon a greater power was found to improve the high-risk pregnant woman's outlook on the hospitalized experience (Price et al., 2007).

The developing maternal identity could be affected in a high-risk pregnancy, especially in those hospitalized for a high-risk condition. However, few studies have investigated maternal identity in hospitalized high-risk pregnant women to fully understand the impact of the event (Lederman et al., 2013; Markovic et al., 2006; Mu, 2004). These studies have overwhelmingly found that hospitalized high-risk women adapt and adjust to the hospitalization, revising their maternal identity. However, less is known about how the developing maternal identity is revised and what occurs in the revision (e.g., changes to maternal tasks or behaviors). This study suggested viewing the hospitalization within the context of the maternal tasks and behaviors that occur normally in pregnancy (Rubin, 1984). By understanding these maternal tasks and behaviors, the PI hoped to better understand how they may be altered in a high-risk pregnancy.

The relationship between a mother and a newborn is tremendously vital to the development of the child and studies suggest that this relationship begins during pregnancy. During pregnancy, many opportunities exist for the woman to interact and begin a relationship with her baby that will continue to grow following delivery. Evidence indicates that prenatal attachment can be affected by many factors, including

anxiety and depression (Alhusen et al., 2012; Hart & McMahon, 2006; McFarland et al., 2011), and these same factors are evident in the hospitalized high-risk experience. However, little is known about how prenatal attachment may or may not be affected by a high-risk pregnancy. Few studies that have investigated prenatal attachment in high-risk pregnant women have found that the attachment process may be affected and possibly weakened by the hospitalization (Pisoni et al., 2016; White et al., 2008). Understanding prenatal attachment and the developing maternal identity in women who are hospitalized for a high-risk condition is important because of the potential impact on the mother's well-being, engagement in maternal behaviors that could impact the relationship with the baby during pregnancy, and the relationship with the infant in the postpartum period (Laxton-Kane & Slade, 2002; Lederman et al., 2013).

Over the last 30 years, the experience of antenatal hospitalization in high-risk pregnant women has been well documented in the literature. However, many of these studies are out-dated and do not take into consideration the increasing rate of high risk pregnancies today (CDC, 2016b), making the experience of a high-risk pregnancy more common. Therefore, there is a need to re-examine the hospitalized experience and how this experience can impact the process of becoming a mother, particularly the developing relationship with her baby. Rubin's (1984) work on maternal identity is a useful framework that enabled the researcher to examine the whole picture of high-risk pregnancy care and hospitalization, within the context of pregnancy as a developmental process and was used as a guide to understand the processes that occur and inform data

analyses. The study sought to understand the process of becoming a mother and how being high-risk and hospitalized could affect the process.

CHAPTER III

METHODS

A hermeneutic phenomenological design was used to explore the experience of high-risk hospitalized pregnant women. In this chapter, study methodology, data collection, and analysis procedures are described. The protection of human subjects and limitations of the study are also discussed.

Purpose

The purpose of the study was to describe the high-risk pregnant woman's experience of antepartum hospitalization. Specific aims for the study were to:

- Discover how the hospitalized high-risk pregnant woman felt about her unborn baby
- Describe how the hospitalized high-risk pregnant woman cognitively constructed her transition to becoming a mother

Methodology

Study Design

A hermeneutic phenomenological design was used to explore the lived experience of hospitalized high-risk pregnant women as informed by the philosophy of Merleau-Ponty (1945/2012), who believed that phenomenology is a rigorous science in search of essences. Essences are best defined as the meaning of something and uncovering them will lead to the lived experience, which comes through embodiment in the world

(Merleau-Ponty). According to Merleau-Ponty, life experiences are given meaning and understanding when a description of the human experience and behaviors are explored, as they are lived in the "lifeworld". He identified four dimensions of experience: time (temporality), space (spatiality), body (corporeality), and relationships (relationality), which are consistent with the pregnancy experience. Hermeneutic phenomenology provided an opportunity for high-risk pregnant women to share their unique perceptions of the hospitalized experience by focusing on their day-to-day lives while hospitalized. Rubin's (1984) notion of maternal identity and the maternal tasks of pregnancy informed the design of the study, the conduct of the interviews, and the analyses of the data

The dimension of time and space in pregnancy. Perceptions of an experience are often present in time and space, with space being revised and reorganized by time (Merleau-Ponty, 1945/2012). Time expresses a beginning and an end to an event and is often described in hours, days, or dates, limiting or placing boundaries around the event (Rubin, 1984). Pregnancy is a time-sensitive life event in which time is inherent in the experience and is often marked-off to coincide with the growth of the fetus in weeks or months (40 weeks or 9 months) or by the woman's due date. However, the dimension of time is conceptualized and perceived differently for each pregnant woman because of the interactions (past and present) with the world around her (Merleau-Ponty). In a high-risk pregnancy, the end or length of pregnancy is uncertain, potentially altering the dimension of time and influencing her perception of the pregnancy and the hospital experience. Some women perceive time as a way to cope by setting milestones to reach during the hospitalization (e.g., fetal viability and fewer symptoms associated with the high-risk

condition) (Rubarth et al., 2012), while others perceive time as slowing down or stopping during the experience (Schroeder, 1996). The woman's physical space is altered because she is no longer living in her home; rather, living in the hospital, unable to be with family and prepare for the baby's upcoming arrival. The hospital space is unfamiliar and different to the high-risk pregnant woman, causing alterations in her perceptions of the experience (Rubarth et al., 2012).

The dimension of body. With the extensive physical changes of pregnancy, there is a simultaneous production of images of the body. Initially, images are tentative impressions of what being pregnant will look like and originate out of images of others. As the body grows, images of the body stem from the woman's own mirrored reflection of herself. The growth of the woman's body can represent both positive and negative experiences (positive = growth of the unborn baby; negative = growth of self) and is an important aspect of developing a maternal identity (Rubin, 1984). The pregnant woman's body is not only changing physically, but is actively and continually involved with her environment, altering her current position in the world by becoming a mother to the unborn baby. The woman's body openly experiences pregnancy and does this through the ability to feel and sense the world around her, making her constantly in touch with her surroundings (Merleau-Ponty, 1945/2012).

The dimension of relationship. Relationships with others are a key aspect of the pregnancy experience and are characterized by a mutual interaction between individuals, including the interactions with the unborn baby. These interactions alter and shape the woman's perception of the experience (Merleau-Ponty, 1945/2012; Rubin, 1984).

Furthermore, the course of pregnancy and the transition to motherhood can be greatly influenced by the relationships the woman has with her significant other, family, and friends. The pregnant woman seeks support for herself and the baby during the pregnancy experience. Without support from others and their acceptance of the unborn baby, all the woman's relationships are affected, including the relationship with the baby, and her perception of the pregnancy experience may be altered (Rubin, 1984). In the hospitalized high-risk woman's experience, she is often isolated and alone during the stay, causing distress and potentially altering her perception of her relationships with others, including the baby (Rubarth et al., 2012).

Rationale for the use of Merleau-Ponty. Merleau-Ponty (1945/2012) embraced the thought that the world is perceived through whom we are alone and in relationship with others, guiding every conscious action. As individuals, our consciousness assigns meaning to the world and we cannot separate ourselves from our perceptions of the world. The high-risk pregnant woman's perception of her experience is no different. For that reason, Merleau-Ponty's dimensions of experience was considered to best inform and explain how hospitalization may have altered the perceptions of the current pregnancy experience, providing a lens in which to truly understand the hospitalized experience of the high-risk pregnant woman.

Setting

The study was conducted at a 921-bed tertiary-care center located in central North Carolina, which services the fourth largest county in the state (approximately 355,000 residents) (Novant Health, 2013). The facility is the preferred birthing center in the

region, which cares for women with significant high-risk pregnancy conditions in surrounding counties, and delivers approximately 6,000 babies per year. All participants for the study were recruited from the facility's antenatal unit, a 20-bed unit that provides care to women who are experiencing complications during pregnancy that require hospitalization. The average daily census for the antenatal unit is 12 high-risk women (J. Sherrill, personal communication, August 31, 2017).

Sample

A convenience sample of women with a high-risk pregnancy diagnosis who were admitted to the antepartum unit of the above described facility was the targeted sample for the study. Inclusion criteria for the study were: women who are English speaking, 18 years of age or older, 20 weeks pregnant or greater, experiencing prenatal complications, hospitalized for 48 hours or greater, expecting to parent the baby from this pregnancy, and willing to be interviewed.

Rationale for inclusion criteria. The American College of Obstetricians and Gynecologists' (ACOG) current definition for the age of fetal viability is 24 weeks or greater (ACOG, 2017). Although the inclusion criteria for this study (20 weeks or greater) does not meet the current age of fetal viability definition, the principal investigator (PI) chose to include these women because many women encounter complications prior to 24 weeks and receive hospitalized antenatal care, with the hopes of continuing the pregnancy and reaching fetal viability. The prenatal complications of women included in the study were defined as common high-risk conditions that could impact the mother and/or baby during pregnancy and/or following delivery with potential

long-term health effects and include, but are not limited to, gestational hypertension, preeclampsia, gestational diabetes, preterm labor, premature rupture of membranes, and intrauterine growth restriction. Women who have been hospitalized for 48 hours or greater may have difficulty in adapting to the high-risk diagnosis and/or hospitalization. Prolonged hospitalization could result in distancing of the mother from her baby, potentially impacting the developing maternal-child relationship (Schroeder, 1996), so therefore, these women would be better informants for the aims of this study than women hospitalized for a short period of time. Additionally, women included in the study were expecting to parent the baby after delivery and had developed a sense of what it would be like to be a mother to the baby (Rubin, 1984). Parenting is a developmental process that begins during pregnancy with the pregnant woman developing an attachment to and showing affection for her unborn baby, and evolves over time (Côté-Arsenault, Krowchuk, Hall, & Denney-Koelsch, 2015; Deave, Johnson, & Ingram, 2008). By including these women in the study, the overall goal was to assist nurses in better understanding the process of becoming a mother, so they can better identify and help hospitalized high-risk women attach more successfully to their unborn babies and potentially improve their parenting of the baby following delivery.

Exclusion criteria and rationale. Exclusion criteria for the study included women who were less than 20 weeks gestation and those who were pregnant with babies with a life-limiting condition. Women who experience pregnancy complications prior to 20 weeks may or may not receive treatment to prolong the pregnancy; this is at the discretion of the attending physician assigned to her care (ACOG, 2017). Women who

learn that their unborn baby has a life-limiting condition have an extremely different pregnancy experience (Côté-Arsenault et al., 2015). The diagnosis of a life-limiting condition for the unborn baby imposes a period of intense grief and shock when the woman realizes there will be no baby to parent, profoundly changing the pregnancy experience and potentially changing the developmental processes of pregnancy (Côté-Arsenault & Denney-Koelsch, 2016). In order to completely describe the high-risk pregnancy experience, women with a history of pregnancy loss were not excluded from the study. These women understand that sometimes pregnancy can end unsuccessfully, so they may approach pregnancy with heightened anxiety and a sense of vulnerability, possibly adding to the description of the high-risk pregnancy experience (Côté-Arsenault, 2007).

Based upon qualitative sample size literature, approximately 8 to 16 participants (Hagaman & Wutich, 2016) were likely needed to reach theme saturation for the study, but the exact number was unknown until data collection and analysis was underway (Sandelowski, 1995). The adequacy of the sample was determined when: new participants did not add anything new to the data, the participants' narratives became repetitive, data analysis revealed a clear understanding of the high-risk pregnancy experience, and the purpose of the study had been accomplished (Sandelowski, 1995).

All participants were recruited from the facility's antenatal unit. A total of 16 women agreed to allow the PI to provide more information regarding the study, participation requirements, and need for informed consent. Of these 16, 13 women agreed to participate in the study. For the three women who chose not to participate, the

reasons given were “I do not feel well enough to talk” or “I have changed my mind about participating.” After consent to participate was obtained, interviews were scheduled and conducted at times that were convenient for participants.

Recruitment Procedures

After receiving Institutional Review Board (IRB) approval from the University of North Carolina at Greensboro and the facility (Appendix A), a hospital liaison was identified to assist the PI in gaining access to the desired study population. Prior to beginning the recruitment process, a face-to-face meeting was scheduled with the identified liaison to discuss the purpose of the study, inclusion/exclusion criteria for the participants, and the recruitment process. A clearly written description of these requirements was given to the liaison for reference during the study. In addition, the PI met with the nurse manager on the antepartum unit to explain the research focus and how possible participants would be identified. Throughout data collection, the liaison was contacted via telephone at a mutually agreed upon time one to two times per week to inquire about possible participants for the study. Once possible participants were identified, the liaison briefly described the purpose of the study and asked if the woman would allow the PI to come and explain the study (Appendix B). If the woman agreed, the PI provided a description of the study and its purpose to the potential participants, allowing them the opportunity to decide whether or not to participate in the study without coercion (Appendix B). If the woman agreed to participate, consent was obtained (Appendix C).

Protection of Human Subjects

Prior to the start of any recruitment activities, IRB approval at the University of North Carolina at Greensboro and at the facility was obtained. A description of the study and its purpose was provided to the potential participants, allowing them the opportunity to decide whether or not to participate in the study without coercion. If the woman agreed to participate, consent was obtained. Once enrolled, the PI arranged a time to complete the interview at the participant's convenience. Demographic information and patient-reported information, including gestational age, number of days hospitalized, and high-risk diagnosis, were collected from the participant to eliminate the need for computer access of the patient's health information. All participants' names were changed to pseudonyms to ensure privacy and confidentiality throughout the study. All audio-recorded interviews, field notes, and transcribed interviews were stored in UNCG Box. Additionally, the PI used UNCG Box, which was password protected, to share data with dissertation committee members, with access restricted to the PI and the dissertation committee only. After a confidentiality agreement was obtained, a separate Box was created containing only audio files for the use of the transcriptionist hired by the PI. When the transcriptionist was finished transcribing an interview and the transcript was checked for accuracy, that audio file was removed from Box to which the transcriptionist had access. However, the audio file was kept by the PI in UNCG Box until analysis was completed.

Data Collection

Individual interviews were conducted with participants using an interview guide with broad, open questions to elicit information about the experience. Each interview was audio-recorded. Prior to beginning the interviews, demographic data were collected using a PI-developed questionnaire with a Flesch-Kincaid reading level of 7.5, demonstrating readability for most participants in Forsyth County and surrounding counties (Appendix D). However, to alleviate any possible readability concerns, the PI asked questions orally and recorded the answers for participants. The interviews took place in the participant's private hospital room with only the participant and the PI present to minimize interruptions and provide privacy, with the exception of three participants who wanted their husbands to remain with them during the interview. The PI used an unstructured interview approach and began with an open-ended question: "Tell me about your experience in this pregnancy and what has led to this hospitalization." This open-ended question allowed for open conversation between the PI and participant. The PI-developed probe questions or statements surrounding the hospitalized experience (e.g., "can you tell me a bit more about…?" or "tell me about your baby") were used during the interview to allow for flow of the conversation and to better understand the participant's perception of the experience (Appendix E). During data analysis, it became evident that more information was needed from non-white participants, and to generate more detailed information about the hospitalized experience. To allow gathering of this information, purposive sampling was used to seek non-white participants with

preeclampsia, and the opening question for the interview was changed to "what is it like for you being here in the hospital?" See Appendix E.

Throughout the interview process, the PI assessed the ongoing consent of the participant by listening and watching for verbal and nonverbal cues (Richards & Morse, 2013). Following each interview, field notes were completed by the PI regarding her perception of the interview process, immediate personal reactions, and possible emergent codes. It was important for the PI to reflect upon the interview in relation to the study research questions, the overall interview process, and to determine if any aspect of the interview process could be improved to ensure collection of rich, contextual data (Braun & Clarke, 2014). The PI immersed herself in the data by using prior personal and professional experiences as an asset to better understand the language the participants used (Creswell, 2007).

During data collection, three participants requested their spouses to remain in the room during the interview. For these women, their spouses were an integral part of their hospital experience; therefore, the PI felt separating them would either alter the women's current experience or potentially cause them to refuse to participate. Although two of the spouses interjected their thoughts and ideas of their experience during the interview, data saturation was not achieved for these men and their data were not included in the analysis.

Data Analyses

Data analysis began simultaneously with data collection, beginning with the first interview. Recruitment and data collection continued until saturation of themes occurred

and the PI was confident that adequate data were obtained (Richards & Morse, 2013). All interviews were professionally transcribed and verified by the PI for accuracy. Data were analyzed within the philosophy of Merleau-Ponty and using the thematic analysis method of Braun and Clarke (2006). Braun and Clarke (2006) identified six phases of thematic analysis: 1) becoming familiar with the data (e.g., reading and re-reading data and noting initial ideas), 2) creating initial codes (e.g., coding interesting features of the data and grouping pertinent data to each code), 3) searching for themes (e.g., grouping codes into potential themes and organizing all data pertinent to the potential theme), 4) reviewing themes (e.g., ensuring that themes work with coded extracts), 5) defining and naming themes (e.g., ongoing analysis to improve specifics of each theme, glean an understanding of the overall story the analysis provides, and creating clear definitions and names for each theme), and 6) producing the report (e.g., selecting extract examples that provide a captivating story of the experience, final analysis of selected extracts, relating the analysis back to the research question and supporting literature, and writing the report of the analysis). This method of thematic analysis is used with all types of qualitative studies (including phenomenology), providing clear guidelines for the PI to follow, and allowing flexibility in letting the data guide the process of analysis (Braun & Clarke, 2006).

Analysis of data began with the first interview and continued throughout data collection, in order that initial analyses could inform subsequent interviews. For example, after interviewing two participants, it was noted that they expressed the need to stay positive throughout the hospitalization. Following those two interviews, a probe

question was added to inquire if staying positive was a typical response for them or if the hospital had influenced this change. Toward the end of data collection, a few areas were noted to be potentially missing from the interviews (i.e., non-white participants, women with blood pressure/preeclampsia issues, and women who were more articulate/talkative). The PI consulted with two dissertation committee members, who were well-versed in qualitative data analysis, and purposive sampling was then used to target the missing areas in the interviews.

Analysis was an iterative process through coding and theme identification (Creswell, 2007). The coding system assisted the PI in clustering data into themes and guided further data collection (Braun & Clarke, 2014). Transcripts were read multiple times to obtain an overall understanding of the words used to describe the hospitalized experience, and to begin noting initial ideas about the data. Then, the PI created initial codes of each transcript and began to group similar data to each code. During initial coding, data and codes were checked by members of the research team (i.e., dissertation committee members). Codes from each transcript were placed in a code book, along with the participant number and line number for supporting quotes. Initial codes were then collapsed into new, more comprehensive codes and were renamed. Significant phrases or sentences that pertained to the lived experience of hospitalized high-risk pregnant women were identified. Meanings were then formulated from these significant phrases or statements. Differences between participants were noted by comparing and contrasting each transcript. Codes were then grouped and organized into potential themes. While searching for the meaning of each grouping and how they could potentially fit within a

larger grouping, summaries of the data within each potential theme was completed. The potential themes were then reviewed to ensure that the themes were true to the codes within that theme category. The formulated meanings were clustered into themes, and, once this was completed, clear definitions and names for each theme were created. During this process, the PI continually analyzed the data to improve the specifics of each theme, gleaning an understanding of the overall story the analysis provided. The results were then integrated into an in-depth, exhaustive description of the phenomenon (Creswell, 2007).

During analysis, the PI would ask questions of the data to inquire if something was missing. For example, after interviewing nine participants, data collection was paused to allow the PI time to analyze each interview separately and then all interviews as a whole, seeking areas that had reached saturation and those areas that still needed more information.

A reflective journal was maintained throughout the research process, which included the PI's thoughts, questions asked of the data, communication with dissertation committee members, and tracked the progression of the analyses. The journal created an audit trail of decisions made throughout the research process to enhance the rigor of the findings.

Trustworthiness

Demonstrating rigor is an important aspect of qualitative research and must be present for the study to be considered trustworthy (Lincoln & Guba, 1985), with the overall goal of "accurately representing" the participants' experiences (Streubert &

Carpenter, 2011, p. 48). The following four elements are used in qualitative research to demonstrate trustworthiness: credibility, dependability, confirmability, and transferability (Streubert & Carpenter, 2011). To ensure rigor and trustworthiness in this study, the following steps were taken. First, probe questions were used, when necessary, by the PI to seek clarification of something the participant may have said during the interview (Lincoln & Guba, 1985). For example, during one interview, the participant described the hospital as a safe place. The PI then used the probe question of "tell me more about what you mean by a safe place", allowing a better understanding of what the hospital meant to her. Secondly, Rubin's (1984) work on maternal identity was used as a lens to capture the multiple voices or truths surrounding the hospitalized experience (Braun & Clarke, 2014). Rubin's understanding of the process of developing a maternal identity assisted the PI in understanding what was occurring with the women during this life transition. Additionally, throughout data collection and analysis, the PI met with dissertation committee members to validate the data itself, coding of the data, and the research process. Between meetings, the PI remained in contact with these members to ask questions and inform them of the research progress. Furthermore, an audit trail was created to provide evidence of the decision-making process, through general records of the research (e.g., audio-recordings, transcriptions, and field notes), research journal notes, and detailed notes of the data analysis. Throughout data analysis, the PI was immersed in the data by writing field notes, listening to interviews, reading and verifying transcripts, writing memos in the research journal, and coding of the transcripts. The audit trail assisted the PI in documenting the research process in its entirety. Memos

were used during reading of transcribed interviews and coding for any thoughts or general impressions about the data. Field notes were completed immediately following each interview to allow the PI to document any participant's facial expressions or hand gestures that could not be captured in the audio recording, the participant's room environment, positioning of the participant and PI for the interview, and the overall initial impression about the interview. All communication with dissertation committee members was also kept in the research journal, which was updated regularly. Furthermore, all decisions made about the data based upon the PI's thoughts and/or those of the committee members, including initial coding and theme development, were kept in the research journal. The PI remained close to the data throughout analysis to ensure the rigor of the findings by the ongoing validation of codes and themes, providing evidence of trustworthiness (Lincoln & Guba, 1985). Throughout data analysis, the PI returned regularly to audio-recordings, transcriptions, field notes, and the research journal to reflect upon the data to ensure that the findings was a true representation of the participants' experiences. The audit trail was kept organized in chronological order to detail all analytical decisions made throughout, so that this process would be clearly documented. The goal of qualitative inquiry is transferability, that is, usefulness of study findings to others in similar circumstances. Maximizing the transferability of this study's findings has been done through rich description of the setting, the participants, and the circumstances of their hospitalizations. While mother experiences are never identical, it is likely that the experience, challenges, and coping styles of study participants here will

inform nursing care in antepartal care of high-risk, hospitalized women in developed countries.

Conclusion

This cross-sectional, hermeneutic phenomenological study sought to describe the experience of antepartum hospitalization among high-risk pregnant women. The philosophy of Merleau-Ponty and Rubin's work on maternal tasks of pregnancy and maternal identity informed the study by providing a lens in which to understand the high-risk pregnant woman's hospitalized experience. Data collection and analyses remained consistent with the chosen study design.

CHAPTER IV

FINDINGS

Thirteen hospitalized, high-risk pregnant women were interviewed for this study. Data were collected from January 2018 to June 2018. A pause in data collection occurred from March to May to allow time for coding and analysis. During this time, a few areas were noted to be potentially missing from the data including non-white participants, women with blood pressure/preeclampsia issues, and women who were more articulate/talkative. Purposive sampling was used to target these missing areas in the data.

The interview guide was altered slightly in an effort to elicit more detailed descriptions of the hospitalized experience. Some interview questions were deleted from the original guide because they were: 1) confusing to the participants or 2) similar to other questions. For example, the open-ended question that was used at the beginning of each interview was changed to a broader question in hopes to elicit a more detailed response by the participants, allowing them to reflect more upon what the experience meant to them. The original question was "Tell me about your experience in this pregnancy and what has led to this hospitalization?" This question was changed to "What is like for you being here in this hospital?" Other interview questions were added: 1) How has the experience of hospitalization changed your view of this pregnancy?, 2) How does it feel to be the mother to this baby?, 3) How is being mother to this baby in

this situation different than before?, and 4) Is there anything you use the internet for while here in the hospital? The average length of an interview was 47 minutes, with a range of 24 to 65 minutes.

The PI

The PI has nearly 20 years of experience in maternal/child nursing, primarily in the area of labor and delivery. In caring for hospitalized high-risk pregnant women, the PI became curious about what the hospitalized experience was like for them. Because of this professional experience, the PI had ideas about the hospitalized experience. Many of the high-risk women the PI encountered during her clinical practice were separated from their families for an undetermined length of time. She noticed that these women's expectations about their pregnancy changed drastically in the course of a few hours; from a normal, full-term pregnancy to a pregnancy with unexpected complications. Many of these women were then faced with the possibility of having a medically fragile baby, with an unknown chance of survival. The PI noticed that these women would experience changes in moods (e.g., stress, anxiety, and depression) in relation to how things were going medically with their babies and themselves. However, few nurses and healthcare providers seemed to fully understand how the hospital impacted these women. These encounters left the PI with an unclear picture of what these women faced each day in the hospital, not only physically, but also mentally. The PI wanted to better understand what the hospital experience was like for these high-risk pregnant women.

Because of her experiences with high-risk pregnant women, the PI had some ideas about the difficulties of the hospitalization (e.g., separated from family, change in

expectations, and many emotions). In order to acknowledge these ideas, throughout data collection and analysis the PI added memos about her initial thoughts about women's words, considering both the actual interview process as well as the PI's previous experiences. Field notes were completed immediately following each interview, documenting any nonverbal expressions (e.g., smiling, eye contact, and hand gestures) exhibited by the participant and/or the PI, along with general assumptions, and initial thoughts. Throughout data collection and analyses, there was a constant comparison between different participants' data to understand the similarities and differences that were being discovered. As the PI had thoughts or reactions to the data, they were added to a research journal maintained throughout the study, which was shared with dissertation committee members for discussion. These memos were organized by concepts and reflected upon throughout data collection and analysis.

Rubin's (1984) work was reflected upon during data collection and analysis to understand the true meaning of the data. The PI had prior knowledge of Rubin's work and was concerned that she would have preconceived notions of the data, imposing her prior knowledge of developing a maternal identity. For example, while interviewing Kathryn, she stated that she felt that she and her husband had "became parents quicker than they had ever thought." The PI recognized this statement as similar to Rubin's notion of dedifferentiation. Nevertheless, the PI relied upon the data, research purpose, and women's words to guide interview questions and recruitment and strove to avoid reaching conclusions prematurely. Instead, ideas related to Rubin's work were placed in the research journal to revisit during analysis. During data analysis, Merleau-Ponty's

(1945/2012) life worlds provided the ability for the PI to understand the differences between participants in the study and previous literature.

Description of the Sample

All participants were female with an average age of 27.5 years (range: 20-38). The majority of participants were Caucasian (n = 9; 69.2%), with the remaining participants reporting their race as African American (n = 2; 15.4%) and mixed (n = 2; 15.4%). Eight participants were married, while 5 reported being single. Regarding education level, 7 participants reported having an associate's degree (n = 2; 15.4%) or higher (bachelor's: n = 4; 30.7%; master's: n = 1; 7.7%), while 4 participants reported having completed some college and 2 participants reported having a high school diploma. Nine participants worked full-time prior to hospitalization, while the remaining participants reported working part-time (n = 1; 7.7%), being unemployed (n = 2; 15.4%), or being a homemaker (n = 1; 7.7%). Six participants were primigravidas and 7 were multigravidas, with the average number of pregnancies being 2.2 (range: 1-6). Nine participants were carrying singleton pregnancies, with 3 carrying twins and 1 pregnant with triplets. Of the women who had children living at home, the average number was 1.4 (range 1-3). The average number of weeks gestation of the participants was 28.19 (range: 22 6/7 – 33 5/7 weeks gestation). The average number of days hospitalized at the time of interview was 9.46, with a range of 2-21. The pregnancy complications that prompted the hospitalization ranged from shortened cervical length to preeclampsia. For a complete list of pregnancy complications and other descriptions of the sample, refer to Table 1 and 2.

During data collection, three women requested that their spouses remain in the room with them during the interview because they were perceived as an integral part of their hospitalization experience. Although the women were always the first to respond to the interview questions, two of the men added to the women's responses, interjecting their own thoughts in response to certain questions, while the other man did not respond to any questions and was just a physical presence in the room. For example, when the question was asked "What is the most difficult thing about being in the hospital?", most women responded with "being away from family", "missing out on events of pregnancy", or "not knowing what to expect." However, the two men also responded with "not knowing how long we will be here", "having to rely on other people", or "not knowing what will happen to my wife and baby." These two men seemed concerned about both mother and baby, while the women's primary concern was for their baby.

It is possible that the men's presence altered some of the women's responses during the interview, but it was not apparent to the PI. However, the PI sensed that the couples had an open dialogue with each other and were sharing their true feelings about the hospitalization. For example, following the interview, Diane's husband stated that "it was good to talk about what they were going through." Diane agreed. Although the words of these men were included in the transcript of interviews, the data obtained from them were thin and did not contribute substantially to understanding the experience, so were excluded from the analysis.

Table 1

Demographics of the Sample

Participant	Pseudonym	Age	Race	Marital Status	Education	Work status
1	Rachel	33	Caucasian	Married	Associate	Full-time
2	Judy	21	Mixed	Married	Some college	Full-time
3	Kathryn	32	Caucasian	Married	Master's	Full-time
4	Barbara	38	Caucasian	Single	Bachelor's	Full-time
5	Kerry	20	Caucasian	Married	Some college	Unemployed
6	Piper	20	Caucasian	Single	High school	Unemployed
7	Dara	35	Caucasian	Married	Associate	Homemaker
8	Janice	23	Caucasian	Married	Some college	Full-time
9	Michelle	25	African American	Single	Some college	Full-time
10	Melissa	20	African American	Single	High school	Part-time
11	Kim	31	Caucasian	Married	Bachelor's	Full-time
12	Diane	29	Caucasian	Married	Bachelor's	Full-time
13	Elaine	30	Mixed	Single	Bachelor's	Full-time

Table 2

Pregnancy History of the Sample

Participant	Pseudonym	Gravida /Para	Complications with Other Pregnancies (Y or N)	Gestation	Reason Hospitalized	Number of Days Hospitalized
1	Rachel	G6 P2	Y	28	Shortened cervical length	8
2	Judy	G1 P0	N/A	22 6/7	PROM at 20 weeks; Twin to twin transfusion Twins	9
3	Kathryn	G1 P0	N/A	25 5/7	Shortened cervical length; PTL Twins	16
4	Barbara	G1 P0	N/A	30	PROM at 29 weeks	7
5	Kerry	G1 P0	N/A	33	PTL; 4 cm dilated	16
6	Piper	G2 P1	Y	25 5/7	PTL	6
7	Dara	G3 P2	N	30	PTL and Bleeding Triplets	6
8	Janice	G2 P1	N	30	PROM at 28 weeks	14
9	Michelle	G5 P1	Y	23 5/7	PTL; 3 cm dilated	4
10	Melissa	G2 P1	N	27	Shortened cervical length; PTL at 24 weeks Twins	21
11	Kim	G1 P0	N/A	33 5/7	Preeclampsia	7
12	Diane	G1 P0	N/A	29 6/7	PROM at 29 4/7 weeks; Preeclampsia	2
13	Elaine	G2 P0	N	28	Preeclampsia	7

Note. PROM = premature rupture of membranes; PTL = pre-term labor.

Description of the Setting

All interviews took place in the participants' rooms, which were located on the antepartum unit. The configuration of the unit was a T-intersection, with the nursing station located in the center. Each interview took place in the participant's private room. All rooms had cabinets for storage and a bathroom located just beyond the cabinets. The rooms were also equipped with the participant's hospital-style bed and equipment for monitoring her and baby. Two chairs, an armoire with a refrigerator, and additional drawers for storage were located on one wall in the room, with a television mounted above. On the far wall, a pull-out sofa was located under a large window. Family members were allowed to stay overnight with women, if desired.

For each interview, participants were dressed in their own clothes and seated or lying in their beds with the PI located to right or left side of the participant. During the interview, the door was closed to provide a quiet environment, minimizing any noises or distractions from outside the room. The hospital staff were aware of the interview in progress and kept disruptions to a minimum. Ten interviews took place with only the participant and PI present. However, as discussed above, three interviews were completed with the spouses present per the participant's request.

Analytic Findings

A hermeneutic, phenomenological qualitative approach was used to explore the aims of this study. Thematic analysis of the transcripts yielded five themes that reached saturation. The five themes are: 1) Flooding Emotions from Hospitalization, 2)

Struggling with Uncertainty and Changing Expectations, 3) Dealing with Hospitalization, 4) Anticipating Motherhood, and 5) Doing Whatever It Takes.

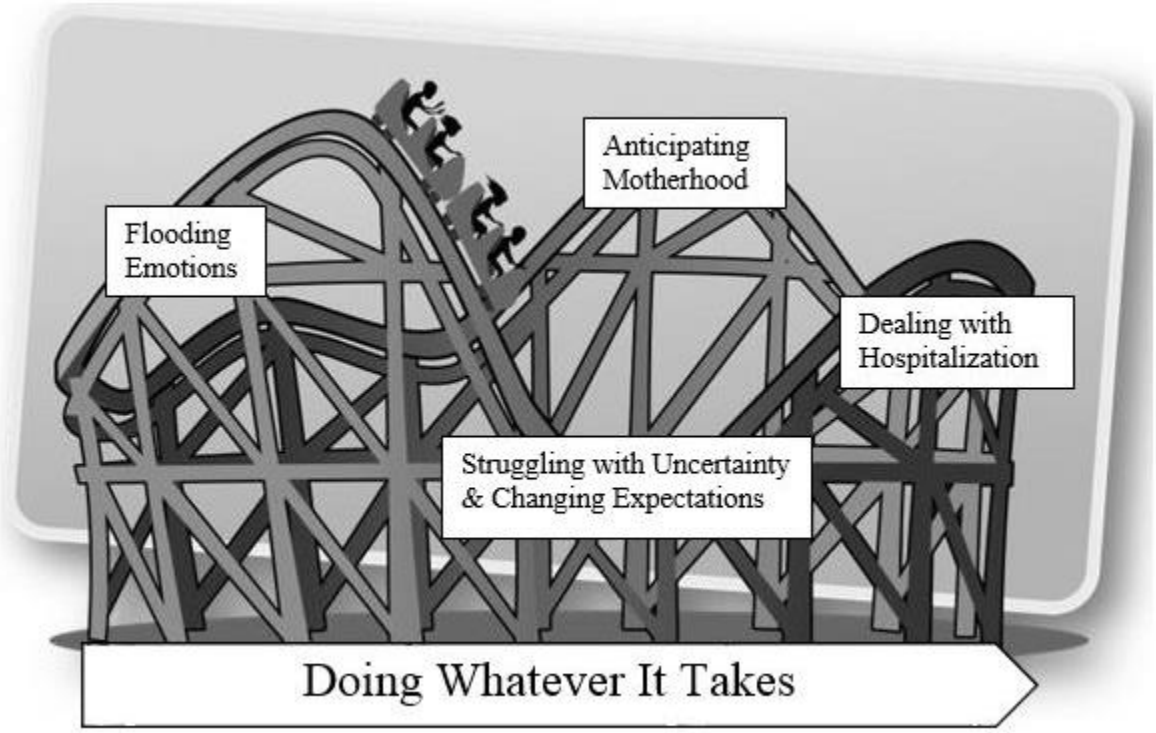
The initial response to the hospitalization caused a variety of emotional responses. Some of the women knew they were considered high-risk prior to the hospitalization, while others had no idea they were high-risk until they were admitted. Regardless, all women responded with many negative emotions (e.g., fear, crying, stress, anxiety, and depression) and struggled with the many unknowns of the hospital. Some women grieved the loss of how they had envisioned their pregnancy, while others grieved missing out on the events of pregnancy (e.g., preparing the nursery, baby showers, and maternity photos). Despite these feelings, all women envisioned the hospital as a safe place for them and their babies, knowing they were close to care, if needed.

The women described dealing with the hospital in a variety of ways, such as relying upon God, receiving support from others, and keeping a positive outlook. Some women employed multiple ways of dealing with hospitalization, while others only relied upon only one or two strategies. The women described their anticipation of becoming mothers to their babies. Overall, most women stated their excitement over being a mother and saw themselves as mothers already, while others could not see themselves as mothers until after the baby was born. Some women described their relationship with their baby as close, while others did not have a relationship with the baby yet, but envisioned that it would develop after the baby was born. However, all women spoke fondly of their babies and were willing to fight for their babies, dealing with any inconveniences of their hospitalization.

The hospitalization was found to be a major disruption to the women's pregnancies and everyday lives. Being hospitalized for their high-risk condition was seen as a shocking crisis that forced them to be reoriented to their 'new normal', causing adjustments in many aspects of their lives (e.g., caring for other children, work concerns, and pregnancy expectations). The experience could be likened to being on a roller coaster ride, in which the women experienced many ups and downs, struggling along the way (Figure 1). However, unlike a roller coaster returning to the station signaling the end of the ride, these women did not know when their ride was going to stop. However, despite the many ups and downs of the hospital, the one constant, that never wavered, for these women was their drive to fight for their babies and to do whatever it took to ensure the safety of their babies and themselves.

Figure 1

Identified Themes



Themes

The following is a description of the themes and sub-themes identified in the data. Supporting quotes will be used throughout to provide a vivid description of each theme.

Doing whatever it takes. As the women navigated through the ups and downs of the hospitalized experience, Doing Whatever It Takes was determined to be the overarching theme. Doing Whatever It Takes represented how the women coped or dealt with the unanticipated changes in their pregnancies. They wanted to "fight" for their babies and were willing to deal with any inconveniences of their stay in the hospital. Although being in the hospital was difficult and concerning at times, the women wanted

what was best for themselves and baby. Despite everything they were experiencing (i.e., Flooding Emotions of Hospitalization, Struggling with Uncertainty and Changing Expectations, Dealing with Hospitalization, and Anticipating Motherhood), these women were willing to do whatever they had to do to maintain the pregnancy as long as possible.

Although Rachel and Kim acknowledged the difficulties of the hospitalization (i.e., being away from home and family and changing expectations of pregnancy), they both spoke about doing whatever they had to do for the baby. Rachel discussed that being away from family was difficult, but she understood that her hospital stay was necessary for her baby and she "would rather be in the hospital longer than him." Likewise, Kim expressed similar thoughts "I would do anything for her…because that's what she needs."

Others expressed these same thoughts of "fighting" for their babies no matter what it meant for them personally. Kathryn stated "we're going to fight today…and ask God to keep these babies in me...me being here is the best way to protect them and fight for life…I'd hang outside a window if I had to", pointing to the window in her room.

Diane was willing to do whatever she had to to ensure her baby's safety "making sure that she's okay…and I just want to make sure that I'm doing everything to make her healthy."

Despite her not having much excitement for baby or a relationship with her baby, Elaine still discussed that her goal was to stay pregnant as long as possible "trying to keep her in as long as possible…as long as there's not any issues with her or me…so, just trying to let her bake a little bit longer."

Piper expressed how difficult the hospital was for her, but understood that being in the hospital was more about ensuring the safe delivery of her baby. Moreover, she spoke of her willingness to put her baby's needs in front of her own.

> Knowing that I have to do what I have to do as long as I need to, so it's best for her…it's really just putting her needs in front of mine…I don't want to be in a hospital bed…I don't want to have to depend on everybody else to get me things, but it's what's best for my daughter…so, I'm going to do what I have to do…no matter how much I don't like it…it's not about me anymore.

Michelle, who was dilated 3 cm, at 23 weeks, stated

> it makes me kind of even want it more, because it's like we're having to fight so hard for it…and it just makes me feel like it's so much worth it now…if I have to sit here…until my due date…I'm fine…I'm okay just as long as he is going to be okay…or he is going to survive…that's all I care about I'm doing this for my child…at the end of the day.

Flooding emotions from hospitalization. The initial response to the hospitalization caused a wide range of negative emotions and the participants struggled with the many unknowns that the hospitalization produced. At times, some women stated that the many unknowns from being in the hospital were overwhelming. Many women described the experience as extremely stressful because they were uncertain of what was going to happen to the pregnancy and/or babies. Some participants seemed to grieve the loss of the idealized pregnancy and felt they were missing out on events of the pregnancy (e.g., baby showers, preparing the nursery, taking maternity photos). However, despite these feelings in some participants, all of the participants reported feeling safe in the hospital setting because they knew that they were close to treatment, if needed. Three

sub-themes for Flooding Emotions from Hospitalization emerged: (a) Overwhelming Emotions and Experiences, (b) Understanding the Purpose of the Hospital Stay, and (c) Hospital Makes Me Feel Safe.

Overwhelming emotions and experiences. Although many had come to terms with being hospitalized, they also had emotional responses that were negative, such as "stress", "anxiety", "depression", and a "mental roller coaster". At times, stress dominated their time in the hospital, such as when Piper shared her reaction to being hospitalized unexpectedly "since I've gotten here, I stressed out really bad the first couple days I was here…just because of everything going on… having to be told I was going to be here for a while." Judy had a similar statement related to stress when discussing Baby B's membranes rupturing: "he (doctor) ended up confirming that it was the other baby's water that had broken which was another long stressful night."

In addition to stress, anxiety was the dominant emotion for several participants. Kathryn spoke of how she struggled with anxiety "then there's moments that anxiety can dominate…it just goes up and down…every time I go to the bathroom, it's anxiety provoking." Dara had a similar response to the emotional ups and downs of the hospitalization. She shared, as she motioned with her hands,

> so it was pretty, pretty surreal…it was very…I was okay at first…then I started getting anxious…then it started feeling surreal…but then when I got here, it's like I said, you know, that whirlwind of getting everything set in place.

Melissa and Kim spoke of how the hospitalization caused them to have symptoms of depression. Melissa described herself as typically "a positive, cheerful, happy person,

that's me…but this place is kind of depressing…especially, like, with getting all these needles and stuff…trying to just keep them in", pointing at her belly. Kim stated she felt "stripped down at this point" and was "more guarded" now. Kim also explained, as looked out the window of her room, that "some days, like, today's a really good day…I feel mentally good about everything... two days ago, I would probably be crying a lot right now…it's just however, however I am emotionally is how I'll handle it."

Sometimes depression was anticipated. Melissa spoke of her anticipation of her twins' birth and potential NICU stay, as she gently rubbed her pregnant belly "it's gonna make me cry and depressed…like it's my fault…but it's not gonna be my fault...that's why we're trying to keep them in there as long as possible."

Some participants described their admission to the hospital as a difficult and emotional day for them. For many of them, being diagnosed as high-risk occurred on the same day they were hospitalized. The uncertainty of what would happen to them and their babies dominated their thoughts. Kathryn spoke of her emotions as a mental roller coaster "I think it's the mental roller coaster of like not knowing…the unknown."

Kim and Diane had similar reactions to their hospitalizations. Kim stated "it was just back and forth, a constant back and forth…and trying to just be okay with it." Diane spoke about not knowing if she was going to deliver immediately or not, and described the experience as "pretty terrifying, because I thought it was going to happen right then."

Judy described her experience on admission to the hospital:

> They got us in a room pretty quick just to, I guess, check- and get everything checked out and stuff…and, they confirmed that…Baby A, which he sits real low….he sits on the bottom...his water has broken…and I was having very small contractions…that was a very emotional day.

Several of the participants described the experience as overwhelming and found it difficult to comprehend what was happening. Many of them went from a "normal" pregnancy to being told that they were being admitted for a high-risk complication. Barbara explained her hospitalization as "a shock...I imagined to go full-term." Judy had a similar reaction "when the doctor first told me…I broke down…I mean I was bawling…I was very upset."

Kathryn described her hospital admission as "we went from a normal OB appointment, and within an hour, having end of life conversations about my twin girls." She became tearful as she described the decisions she and her husband were having to make when she was hospitalized unexpectedly with twins

> Just very overwhelming…I remember just not wanting my baby girls to die…I wanted to give them a shot at life…we believe in allowing people dying with dignity rather than hooked up to machines…and we didn't want our daughters hooked up to machines for their entire short lives…we had to have those conversations to say would we rather get to be with our daughters for an hour, or whatever it would be, five minutes, rather than being intubated and down in the NICU and not really having a quality of life that we felt like was fair for them…those are really hard conversations to have and to think about.

Understanding the purpose of the hospital stay. Despite the difficulties that the hospitalization had caused, a few participants discussed the purpose of their hospital stay. They understood that it was necessary for the health and safety of their babies and themselves. Judy, Piper, Kim, and Elaine all had similar thoughts regarding the purpose

of the hospital stay. Judy's understanding of her need to be in the hospital focused on just the babies' needs "I know I'm here to keep the babies alive…so being in the hospital doesn't bother me." Piper understood the importance of being there "it's important…I'm bringing a life into this world."

While Kim and Elaine focused on both their babies and themselves. Kim said she understood her purpose for being there "because that's what she needs, and that's what I need." Although Elaine struggled with the idea of her being hospitalized until delivery, she still understood why she was there "considering that it's more so for both of our health, then I'm kind of dealing with it."

Hospital makes me feel safe. In spite of the many negative emotions experienced during the hospital stay, many participants saw the hospital as a safe place for them to be. They found peace and comfort in knowing that healthcare providers were just steps away from their hospital room, in case of an emergency. Many of them were comforted by this access to care and were thankful for being there. Several of the participants used the words "safe haven", "relieved", "access to care", and "best place" when describing what the hospital meant to them. Dara envisioned the hospital as a "safe haven…this is, you know, the place to go...we need to be here."

Kim had similar feelings "when they admitted me, I was relieved." Diane was also relieved when she was admitted "happy to be under care in case anything does go wrong…I can have something happen quickly here, rather than be at my house and have to get somebody to take me to the hospital."

Piper and Kathryn felt the hospital was the best place to be for their babies to have a "fighting chance" for survival. Piper chose the facility over a smaller facility in her hometown because "I feel like she would have a better fighting chance here than a small-town hospital."

Kathryn also saw the hospital as the best place for her to be because "me being here is the best way to protect them and fight for life", pointing at her belly. Kathryn went on to discuss the quick access to care she would have, if needed

> I think one of the major reasons I'm here is because if I were to go into labor right now, which is a possibility, the access…within five minutes I could be in the OR to C-section these babies out…or, like, versus if you're at home, it takes commuting here and all of that…I think I feel the access to the care that I potentially need is readily available.

Elaine found comfort in knowing that she was being monitored closely while hospitalized. She said "it (hospital) kind of takes some of the stress off knowing that they're monitoring everything versus if I was at home and something were to happen." Diane described the hospital as a blessing "it's definitely been a blessing to be here and to continue to have that support and that guidance, and, you know, to be able to ask the questions and everything."

Struggling with uncertainty and changing expectations. Struggling with uncertainty and changing emotions was the third theme identified. At some point in each of the participants' pregnancies, the expectations changed. None of the participants expected to be hospitalized during their pregnancy. However, two women with multiples, Kathryn and Dara, stated they knew their pregnancies were high-risk and had

the potential for home bed rest, but they did not expect to be hospitalized prior to delivery. Every participant expressed some level of difficulty dealing with their changed expectations of pregnancy and/or the struggles with the hospitalization. Eight sub-themes for Struggling with Uncertainty and Changing Expectations emerged: (a) Thoughts of Pregnancy Prior to Complication, (b) Change of Plans for Pregnancy, (c) Understanding Pregnancy as High-Risk, (d) Body Not Working Properly, (e) Loss of Control, (f) Not Knowing What to Expect, (g) Missing Out on Events of Pregnancy, and (h) Forced Restrictions of Pregnancy.

Thoughts of pregnancy prior to complication. Few participants envisioned the possibility of experiencing pregnancy complications. Those that knew complications were possible had either experienced a complication with a previous pregnancy or were carrying multiples. Participants developed their expectations of pregnancy in different ways: some were based on their own previous pregnancies, others considered friends and/or family members' experiences, and still others based it upon their preconceived notions of what pregnancy might be like. However, no one envisioned being uprooted from their lives at home to spend an unknown amount of time in the hospital.

Many of the participants expected a "normal" pregnancy without complications, until the unexpected happened. Judy first experienced problems at 20 weeks gestation when her membranes ruptured unexpectedly "It is my first pregnancy, I didn't think anything of my water breaking at 20 weeks".

Similarly, Kathryn, pregnant with twins, stated "so, I had a very uneventful, typical pregnancy with twins…I continued to exercise modified throughout up until 23 weeks…I mean, nothing out of the ordinary…that was uneventful [*sic*]."

The participants who had experienced previous pregnancies compared this pregnancy to the others. Janice, who had another child at home, stated "everything was fine, so I expected another pregnancy like that…it's going to be great…I didn't think this would happen…I mean, last time, last pregnancy, I had no complications."

Rachel, who had delivered her last child at term, reflected upon her thoughts of this pregnancy initially and "hoped this one would go that way and it was going good…everything seemed good."

Dara, who had three children at home, began having fears about the pregnancy the moment she discovered she was carrying triplets.

> When you expect to see one heartbeat and then all of a sudden there's three...I was completely floored and…shocked…we got back out into the waiting area to the see the physician, I just started crying…I was like, how am I going to do this?..What if my stomach doesn't get big enough…or what if my body can't take three babies?...so, those fears were already creeping in.

Change of plans for pregnancy. Hospitalization prompted the participants to restructure their previous thoughts about their pregnancies. Many women never imagined having complications that would cause them to be hospitalized. It caused them to change their plans for their pregnancy and envision it differently. Many discussed these changes of plans. Although Elaine did not envision being hospitalized during her pregnancy, she seemed to understand why it was necessary "I had to change…all my

plans for the baby shower and so forth…but…considering that it's more for both of our health, then I'm kind of dealing with it."

Kim never imagined being hospitalized during her pregnancy and had a difficult time adapting to the change in her plans "I didn't think that I'd ever be in the hospital prior to the baby being here, because that's just, that's not going to happen to me…and here I am." She planned on "having six or seven more weeks to get things done." Although she was excited about the upcoming birth of her daughter, Kim still seemed to struggle with the hospitalization and at times, questioned her decision to become pregnant

> I didn't think it was going to be like this…whenever you find out you're pregnant, it's not uncommon to have second thoughts and be like, what have I done?...I've definitely had more of those in the recent times…everything that's happened…I've still been like…I didn't sign up for this…I didn't think it was going to be like this…everywhere I turn there's intervention.

Two participants felt that being hospitalized had caused their lives to change in a negative way and were struggling with being separated from other children at home. Janice was hospitalized unexpectedly while visiting family, nearly two hours away from home, causing her to be separated from her son. She stated, with regards to the hospitalization, "just kind of had to change my life a little bit."

Another participant, Rachel, struggled with the changes in her pregnancy because it took her away from her other two children at home. She felt that her whole life had been put on hold for the baby and began to cry as she described what it was like.

> It feels like when you get put on bed rest that your whole life is jerked out from underneath your feet…because I'm used to working full-time, and taking classes full-time, and having two kids, and going to travel games and practices every night, and trying to find a way to cook supper…it's like if I get in bed by 11 o'clock every night, I'm doing good…so, it's like your whole life is given up for this baby.

Although Dara was not pleased with being hospitalized, she had a different outlook on her stay.

> I'm not very pleased that this happened, but at the same time, I think…I need to try to take this in stride the way I have everything else…this obviously happened for a reason…and if it's something that's going to help keep them safer and healthier and have a better outcome in the long-run, then absolutely, we'll stay here as long as we have to.

Understanding pregnancy as high-risk. The high-risk diagnosis came as a shock to most of the participants. The large majority of participants (n = 8) first discovered they were high-risk when they were admitted for the complication, while only five participants knew earlier in the pregnancy. Additionally, the point in their pregnancies when the high-risk diagnosis was made varied greatly among the participants. With these differences in mind, the participants described their high-risk status with varied levels of understanding. Most of the women understood the seriousness of their situation and that there were many uncertainties surrounding the babies (i.e., could be delivered early with many problems, have an undetermined length of stay, or not survive after delivery). Many of them knew the road ahead may not be easy and could be one of the hardest things that they ever had to face. Some described it as a "rough and long road ahead" and

a “waiting game”, while others described their situation as “a critical state”, “we could have died”, “I am in danger”, and “this is affecting me physically.”

Piper’s first pregnancy ended in a fetal demise at 21 weeks, so she understood that she was considered high-risk early in the pregnancy because of her history. At the time of her interview, she knew that she would be hospitalized for the duration of her pregnancy and it was not going to be an easy journey.

> I would be considered a high-risk pregnancy because of my first daughter…it’s not going to be as long as it has been, but there’s still a long road ahead…it’s not going to be easy by any means, but…you have to do what you have to do.

Similarly, Dara had knowledge of her high-risk status from the moment she discovered she was carrying triplets “you want to sort of know all your options…we knew that this (bed rest) at some point could happen.”

Kathryn understood the severity of her condition and what being high-risk meant for her and her twin girls “I understood the severity of my having twins, which is high risk…then what was going on with my body…I knew that going home was not an option…at all I’m just…kind of waiting.”

Diane discovered she was high-risk when she was diagnosed with preeclampsia and her membranes ruptured at 29 weeks “my water broke early…we went to the hospital and found out I had preeclampsia…then my water broke…so now, I’m high-risk.”

Some women understood the severity of their high-risk condition and discussed the uncertainties surrounding the health of themselves and their babies. Melissa began experiencing pre-term labor at 24 weeks with twins. At the time of the interview, she had

been hospitalized for three weeks. She understood the risk of complications for her twins were still high "babies can die…but I don't want to experience that."

Kim understood the severity of her preeclampsia diagnosis and the risks involved for her and her baby, often struggling with the hospitalization and her preeclampsia diagnosis on a daily basis.

> this is directly affecting me physically…I have to keep telling myself that everything's going to be fine, but it's also just knowing that I am in danger…we could have both died…and that's, that's something that you always think about, but you don't let yourself go there to think about it.

After being hospitalized for their high-risk condition, five participants spoke of how this diagnosis had changed their view of pregnancy. They realized now what a privilege pregnancy was and would no longer take anything for granted. After Diane was hospitalized for preeclampsia, she had a different perception of pregnancy "I don't want to take anything for granted anymore…I thought my pregnancy was very easy before…and now it kind of took a turn."

When she was referring to the uncertainty surrounding her twins' survival, if she delivered at this point, Kathryn stated,

> I would count it a privilege versus a right to get to be a long-term mother to them…I think there's things you take for granted. Baby showers. We aren't going to have a baby shower. Um, uh, maternity photos are not going to happen.

Dara counted her pregnancy as privilege and a gift from God.

> Obviously this was a decision that God made…he wouldn't have done if He didn't feel in some part that we were worthy on some level…you look at yourself and go…wow…he thinks me worthy of such an amazing thing

Body not working properly. A few participants perceived their bodies as not working properly, citing this as one of the reasons they were hospitalized. Envisioning that their bodies were the problem caused distress. Kathryn saw herself as "a ticking time bomb." She stated, as voice cracked, "I know my body is failing my little girls…you're in the hospital so you know your body's failing you… and you aren't in control of that is the hardest thing."

Melissa, who was pregnant with twins, believed that her body wasn't "meant to carry two kids." One participant, Kim, seemed to be fighting an internal battle. It seemed as if she was blaming herself for her body not functioning properly and she struggled with these thoughts, becoming emotional at times.

> I'm not enough because my body's not enough…I'm just not enough, and that's what it feels like…but at the same time, there's two sides of it where I tell myself that, but then I also have the other side that's telling me…okay…that's not what's actually happening…sometimes, it just, it depends on which voice is louder.

Loss of control. The loss of control over the outcome of the pregnancy was a hard realization for many of the participants. Prior to the high-risk diagnosis, many of the participants felt a sense of control over what would happen during pregnancy, during the delivery, and after delivery of the baby. Being hospitalized changed not only their perceptions of the pregnancy, but also changed their ability to be in control. This perceived loss of control was difficult for many of the women and they struggled with the

many uncertainties that it produced. When talking about her twins being delivered early, Melissa stated "it's not something that I can control, so if they come early, they come early." Dara felt that the triplets' delivery was out of her control and depended solely on when her babies decided to come. She stated it is "out of my hands."

Although the loss of control was difficult for Kathryn, it prompted a change in the way she and her husband viewed the pregnancy helping them see themselves as parents earlier than expected. This change gave her the courage to fight for the life of her babies, even though she knew ultimately she was not the one in control.

> My husband and I have felt like we have become parents much more quickly than we were ready for…the way we have felt a maternal instinct and a ferocious fight to keep them alive…even though that fight's really out of our control…really has surprised us and in some ways scared us a little bit…we never realized we could love these little girls we've never met before.

One participant, Kim, who stated that she normally like to control her decisions, struggled with the loss of control she experienced over her pregnancy. With her high-risk pregnancy and subsequent hospitalization, her control had to be relinquished, causing her to reimagine what her pregnancy would be like. She explained her difficulties with this loss of control.

> I know no one's pregnancy is picture perfect…but, I wanted it to be kind of what I wanted…and I want to get everything done the way I want to get it done…they were like, okay, well, the goal is now 34 weeks, I panicked…because 34 weeks is a preemie, and that's the NICU…I was trying to hold onto some sort of…part of my plan…and that destroyed that part of the plan…I'm not in control, but if I can control myself emotionally and just have my minute or two, or a few hours…and then just come back down to earth, I feel like I'm successful.

Not knowing what to expect. Along with the many difficulties associated with the hospitalization, not knowing what to expect was a predominant concern for many of the women. They were unsure of how long they would be hospitalized, when the delivery would occur, or what would happen to their babies. The uncertainty of not knowing was difficult for some, causing fear and anxiety. Michelle stated she was "so nervous…I don't know what to expect, because I never went through this."

Similarly, Diane said "it's just scary because I don't know when I'm going to deliver…and what's gonna happen…and I want to make sure I can keep her in as long as I can."

Elaine discussed her pregnancy as "day to day" since her hospitalization

> it's just more so initially…the uncertainty of whether or not I would be able to go home or not…or knowing exactly what the status was with everything…and everything changing from day to day.

With the many "unknowns" the hospital produced, Kim described, as she motioned with her hands, "the plan for now is blank…and that's really hard when you're the type of person that wants to know…what the plan is."

Kathryn and her husband sought out statistics about high-risk pregnancy outcomes to work through the unknowns that arose while hospitalized. However, there were few studies or statistics to rely upon for information. Kathryn stated

> you aren't guaranteed anything in pregnancy…and that's a reality of it…you just have no idea...not only were we unknown, but there was no statistics or research for us to grasp at for hope…or…an idea.

Missing out on events of pregnancy. Some participants discussed experiencing sadness over missing out on certain events of pregnancy, such as maternity photos, baby showers, and preparing the nursery. Janice and Elaine expressed that there was "no chance to nest." Leaning back on her hands, Kerry discussed what missing out on pregnancy events meant to her "I feel like I'm kind of missing out on my pregnancy just having to lay in the bed…hardest thing is I cannot prep…I don't really get to capture any memories, like the baby showers and stuff." Similarly, Diane struggled with the inability of being able to complete the task of preparing for her baby, when she stated "I can't even set up…finish setting up my nursery or anything like that."

Along with the many struggles and uncertainties that accompany the hospital experience, Kim discussed feeling robbed of a full pregnancy because she was missing out on her third trimester. She stated "I wanted to have those six more weeks of pregnancy to just try and enjoy the pregnancy…it's made me feel like I am being robbed of a full pregnancy."

Forced restrictions of pregnancy. Being hospitalized during pregnancy not only caused a wide range of emotions, many uncertainties, and struggles, but it also caused feelings of being restricted. These restrictions were described as being "confined" or "not being able to go anywhere." Most participants were missing family members that were unable to visit regularly because of the distance from the hospital or the imposed visitation restriction because of the flu at the time of the interview. Piper described the restrictions as feeling like a trap "it kind of does feel like a trap…you're just stuck and you can't go anywhere", while Elaine stated "I feel like I'm in jail."

Michelle spoke of the physical restrictions of bed rest while hospitalized. She stated, pointing to the bathroom, "when I first got here, I couldn't go to the bathroom by myself…I had to use the bathroom on a pail."

The most predominant restriction of pregnancy discussed by many participants was the inability to see family and friends regularly. Rachel discussed the difficulties of living so far away from the facility, preventing her children from visiting regularly. Also, not being there to help with her children's activities was hard for her "I think just being away from my family…my husband having to do everything…trying to schedule friends and family to come in and do things like clean our house and help with the kids."

Similarly, Barbara and Melissa lived a far distance from the facility which prevented family coming to visit during the week. Barbara stated that being away from her family was hard for her "you don't get to see your friends and family as much as you'd like to…especially if all of them live an hour or so away." Melissa's family lived "three and a half hours away" and she was unable to see her child or family.

Other participants were hospitalized during a facility-wide visitation restriction for children age 12 and under due to the flu. This policy restricted some of the participants' children from visiting them during their hospitalization, which was difficult. Dara was hospitalized during the enforced flu restriction policy and was separated from her three children at home. She discussed how she struggled each day because she could not be there for them. She communicated with her children by video chatting each day.

> I spend all day, every day with them…you know, we've got good family and good friends and they've done their best to distract them…but knowing they can't come here because of restrictions…and I can't leave…we try to Face-Time a couple of times a day.

Dealing with hospitalization. Seven sub-themes for Dealing with Hospitalization emerged: (a) Hope for a Good Outcome, (b) Thankful for Each Moment, (c) Staying Positive, (d) Reliance upon God, (e) Support from Others, (f) Setting Goals, and (g) Staying Informed. Many of the women held on to hope for the pregnancy and baby by keeping a positive attitude, relying upon God, and/or having support from their families. Keeping a positive attitude and holding on to hope were the predominant subthemes within this theme. Many of the women sought information about their condition and/or situation from healthcare providers, family members, and the internet. They found comfort in learning more about their situation and understanding the possibilities of what could happen.

Hope for a good outcome. Many women expressed feelings of hope both for the pregnancy and for the baby, wishing everything to be okay. Having hope helped them cope with their situation. Hope was expressed in a variety of different ways. A few womens' hope came from seeing other babies that were in the neonatal intensive care unit (NICU) born at the same approximate gestation as their babies and doing well, while others found hope in their stable physical status. Judy smiled as she described finding hope in seeing other babies, even a set of twins, in the NICU that were approximately the same age as her twins' gestation.

> They showed us a lot of babies that were born around where I'm at and have made it…they're around 29 weeks now and doing okay…they even had a set of twins…they were born around 23 weeks and they're about 29 now…to see that it is possible…helps.

Elaine crossed her fingers as she spoke of the weekly ultrasounds of the baby, hoping that everything looked fine "kind of hoping that everything does look good and nothing bad came out...going to keep our fingers crossed everything looks fine…she gets to stay in there another week or so."

As she rubbed her cross necklace, Dara described how her faith in Christ gave her hope "being a Christian…gives me hope and peace in this situation." Michelle really couldn't explain why she felt this way, but she stated "I feel that in my heart that if he was to come early, that he would be okay and that he would survive."

Although Judy spoke of hope when she visited the NICU, she also spoke of hope when she believed an ultrasound technician's opinion of baby B's ultrasound results, which contradicted the provider's medical opinion. She was holding on to hope that baby B's health was not in danger and the ultrasound technician's opinion gave her a glimmer of hope that things were improving for her baby's heart. Judy explained the baby's heart as having no "rest", which meant the heart was not able to fully relax between heartbeats. Overtime, she was concerned that the baby's heart would compensate by growing in size (hypertrophy), causing permanent damage to the baby's heart.

> The ultrasound tech...she was the one that did it the first time where she saw there was no…resting, and she knew it didn't look good…she said that it actually looks better…that gave us a lot of hope…the doctor said there was no change…he didn't see any change…there's still not any rest…but if you look at from what we saw…we saw a little bit…we saw that there was some resting…and even the ultrasound tech said that…there is some resting I'm keeping in my head what the ultrasound tech said…that helps a little bit more.

Thankful for each moment. The majority of the participants stated that they were "thankful" or "grateful" to still be pregnant at the time of the interview. Each day they remained pregnant meant another day for their babies to grow. Each milestone accomplished was met with a sense of gratitude and thankfulness, demonstrating these women's positivity. Kathryn explained that she and her family celebrated each day she remained pregnant.

> We're just grateful to be sitting in here right now with the babies still cooking in my belly…couldn't be more grateful for the care we've been receiving from physicians…all the way down to CNAs and housekeeping…and nursing…I feel much more privileged for every day that I get…I'm really grateful…every day feels like a gift that I get to be pregnant, because it means these girls are getting another shot to grow and develop.

Piper expressed similar thoughts. With her history of a fetal demise, she had set a goal of making it to 21 weeks "I was just kind of going with the flow…I just wanted to make it to 21 weeks, and I did…we're over halfway there…so, every day is a miracle."

Staying positive. Staying positive seemed to be a way that many women dealt with the hospitalization. They expressed the need to remain positive throughout the experience because they understood they served a greater purpose of seeking the safe delivery of their babies. Some women stated that being positive was their usual

personality, while others stated they were "forcing" themselves to remain positive. A few women expressed their reasons for staying positive, such as "only way to stay sane" and "situation is not always what it may seem."

Dara and Janice always saw themselves as positive individuals throughout their lives. The hospitalization was no different for them. Dara stated "I always try to find the good in everything…I think taking the moment to take a step back and try to see the big picture, rather than focusing on this little blip on the radar…really helps."

Similarly, Janice smiled when she spoke about how she viewed things in life "my whole life…I've always been a positive person…so, you just have to stay positive to keep moving forward…because if you view life negatively, it won't get you anywhere."

A few participants spoke of how they only allowed themselves to think positively because they feared that any negative thoughts would "cause" a poor outcome for their babies. Judy, who experienced premature rupture of membranes (PROM) at 20 weeks, discussed the difference between her usual personality (realist) and her current personality (positive).

> I'm normally not a…I'm more of a realistic person…but I've been very positive throughout this whole thing…I tried to stay positive and…keep the positive mind frame…but it was always in the back of my head…it was like…what if?...not putting any doubts in my mind that they're not going to come home…I know there's a possibility…I just don't think of it like that…that's the only way I'm going to keep myself sane.

Elaine felt that her positive outlook was necessary, in order for positive things to happen, while a negative outlook would cause negative things to happen.

> Remaining positive that everything's going to be fine whether she comes now or in a couple of weeks…if you think negative, then negative responses will come out…whereas, if you think positive, then you put more positive aura out there to surround the whole situation…we try to do that…'cause we found that when you do think that way more positive things do happen.

Reliance upon God. Five participants spoke of their faith in God and how it helped them through this time in their lives. They used prayer to help deal with the hospitalization and put their trust in God. A few of the women stated that their situation was in God's plan and He was in charge, trusting Him no matter the outcome. Overall, these statements show their complete faith and dependency upon a higher power was their way of dealing with their situation.

Kathryn discussed the importance of her faith in God and how it carried through her current situation. She expressed total dependency on God during her hospitalization and believed that her faith was one of the reasons she was surviving the ups and downs of the hospital. She said that she

> watched God do so much…in some ways a miracle…we believe in God and we believe that He gave us these babies and that He is the giver and taker of life…and so for us that really was what we pressed into as we sat in the unknown…because there's nothing to grip onto in the unknown except for whatever the core foundation of your life is built on…and for us, that's our faith in Christ…really was genuinely how we survived hell for five days in Labor and Delivery and walked through that…it ultimately pushes me to trust in God in a way that I've never had to before…for literally for two lives.

Similar to Kathryn, Dara described her faith in God as the cornerstone for her life. Her faith had gotten her through thus far and she knew that it would continue to carry her. She explained that being pregnant with triplets and her hospitalization was all in God's

plan. Just like Kathryn, Dara stated that she trusted that God would carry her through and she would continue to pray throughout her hospital stay.

> Knowing that this was something that God allowed to happen for us…it was for a reason…it's His completely and perfect plan, so however it goes…He's in charge…I was just doing everything I could just to kind of pray through it…I just said, "you know, I'm going to choose to trust God with all this."…He has a plan, and His plan is perfect.

Michelle had similar thoughts regarding her reliance upon God and knew that whatever happened with the pregnancy and her baby would be God's will. She seemed to be at peace with whatever happened.

> I'm a Christian…I truly feel that He won't put more on me than I can bear…I feel like if He wanted me to deliver, I would have already delivered, you know?...but that can always change, because I feel like it's in His hands…it's whatever He feels is best for me and how He wants to do this pregnancy…I just feel like if it's His will, then I will stay pregnant as long as He allows me to...and if not, he (baby) will come whenever my body allows him to.

Support from others. Nearly all of the participants expressed the importance of support while hospitalized. Support came from family, friends, and healthcare providers. Support was expressed as someone's physical presence in the room, by individuals doing things for them (i.e., housework and help with other children), talking or video-chatting with family/children, and confidence in healthcare providers (i.e., care provided and support of providers).

Kim discussed the support she received from her husband. At the time of the interview, she had been hospitalized for seven days. Throughout the interview, Kim

discussed the difficulties of being hospitalized unexpectedly, but the one thing that helped her the most was "talking with my husband."

Similarly, Dara spoke about all the support she had received from friends, including help with her children at home and visiting her in the hospital. She described her support as "we just have a lot of friends that are great."

Janice was visiting her in-laws, over two hours away from home, when she was hospitalized, causing her to move her child to her in-laws' home, while her husband continued to work in their hometown. She spoke of her support system during this experience "we had my mother-in-law…she's helping watching the baby while he goes to school…also, talking to my best friend every day helps."

One of the most important aspects of the hospital for Kathryn was her support system. She expressed that her family and friends had helped her deal with the many uncertainties that her hospital stay had produced. She grinned as she described them as her "tribe of people."

> My mom has moved up here and has done all the laundry at my home, cleaned our house, made all of our meals, provided for my husband so he can go back to work…I think support system for us and our community has transformed my hospital stay…we have a great tribe of people that love us and have been generous.

Several participants described the hospital staff (i.e., nurses and doctors) as helpful and supportive during their hospitalization. The hospital staff not only provided physical support (i.e., nursing care), but they provided emotional support as well. During the interviews, each participant shared about how the hospital staff provided support and

guidance during their stay. Judy spoke of how her nurse provided support when she was initially hospitalized "my nurse …when we got there, she was amazing…she was really sweet."

Since she lived so far away from the hospital, Janice had few people visit her while in the hospital. She spoke of how the nurses on the antepartum unit supported her each day "the nurses are awesome...they come in and they talk with you….they joke with you."

Kathryn described the nurses in labor and delivery as "saints" and felt that they were one of the reasons she made it through that time "our nursing staff were saints…they literally were…in some ways what kept us grounded and hopeful when we were in labor and delivery."

Although being hospitalized for preeclampsia was difficult for Diane, she saw the hospital as a blessing because of the support and guidance she received from the hospital staff "it's definitely been a blessing to be here and to continue to have that support and that guidance, and, you know, to be able to ask the questions and everything."

Setting goals. Several of the participants set goals for their pregnancy and themselves as a way to deal with the hospitalization. Some goals were short-term (i.e., hourly or daily goals), while other goals were weekly or long-term (i.e., 28 weeks and beyond). These participants described setting goals as something they could attain. Some women would set short-term goals and once obtained, would set another short-term goal. Each time they would reach the goal, they felt that they had accomplished another milestone in their pregnancy. Kathryn described how she set small, attainable goals on

hourly or daily basis. When she would reach this goal, she felt that she had accomplished something and would then set another small, attainable goal.

> We set little goals…I remember where the clock was in that room and had stared at it so much (when in Labor and Delivery)... whether they were 12 hour goals…whether they were get through this afternoon…ultimately, our greatest hope was to end up in antepartum…I never once said I want to go home…I never once said…those were never my goals…I used to call antepartum the "promised land" when I was in Labor and Delivery…because I knew if I got here…there was much more hope for my baby girls…that really was the ultimate goal…it was a big deal to hit the 24 mark…24-week mark…where viability and outcome really is a big change for preemies…it was once we hit 24 mark, we were full-court press of whatever it takes to save them, and whatever we can do during birth…that was a big day for us…our next big day is 27 weeks if God will let us get there.

Other women set long-term goals. Often times, these goals would represent a possible discharge date from the hospital, a milestone for her and/or baby (i.e., reaching 28 weeks gestation), or a predetermined delivery date. Piper was hospitalized at 24 weeks for preterm labor. However, her goal was to reach 28 weeks. If she reached her goal, there would be a possibility of being discharged for the remainder of her pregnancy "I would probably stay here until I was 28 weeks, at least, just to make sure everything would go okay."

Staying informed. A few participants discussed ways they stayed informed about their diagnosis, hospitalization, and impending delivery. Some participants found that using the internet to seek information about their diagnosis, what would happen to self and/or baby, and the overall outlook of their situation helped. Some women used technology to stay in contact with loved ones at home, helping them feel a continued connection with the outside world. Many of the women sought information about the

NICU and what would happen to their babies once they were born, providing encouragement and hope for them.

When Diane was hospitalized, she and her husband began searching the internet for what Diane's diagnosis meant for her and the baby. They both stated how this information "helped" them understand what the potential outcomes could be.

> We had an ultrasound and she's in like the 21st percentile…so we were looking up what that meant...just looking up how she's really going to do at this 29 weeks and six days if she was born right now...so, like, what the risk would be and what all could happen to her...it all depends on how her lungs are when she comes out if she would have the tube down…or if just the thing at her nose, or anything at all…he (doctor) couldn't really tell us exactly what we would see, but some of the things to expect.

Other participants sought information from the NICU on what to expect after their babies were born, by either visiting the NICU or having a NICU representative come to the room to speak with them. Overall, the participants expressed that the information "helped" them understand what would happen after delivery. However, Michelle found the information helpful, but she did not want to see her "baby have to go through all of that."

Rachel had experienced a NICU stay with her first child and understood what her current baby may face "if the baby's born early, which he most likely will be, and he goes to the NICU, they have everything to care for him."

Although Michelle and Melissa had other children, they had them at full-term and had no previous knowledge of the NICU experience. However, they found the information helpful and seemed to have a better understanding of what their babies may

experience following delivery. Michelle was hospitalized at 23 weeks for pre-term labor and knew the seriousness of delivering an extremely premature baby. She found comfort in knowing more about what the NICU had to offer her baby "it made me feel good just to know that they have stuff like that available that they can do…and try to make your baby feel as comfortable as possible…and do whatever they can do for him."

Michelle discussed her knowledge of the NICU and what her babies may face following delivery.

> A NICU nurse had came [*sic*] up here and talked to me…when I was 24 weeks…and she was telling there would be…breathing tubes…they'll have a feeding tube in their mouth because my son had that in my mouth…I told her he had that too…they'll check their brain for bleeding and check their eyes…'cause I don't think their eyes…like their eyesight would have been all the way developed or something…and depending on…how they adjust to life…living outside of the womb will depend on how long they'll stay in the NICU.

Anticipating motherhood. The final theme identified was Anticipating Motherhood. Overall, most women expressed excitement over being a mother and already saw themselves as a mother. A few women could not see themselves as mothers "until the baby was born" or "hoped feeling like a mother would develop after the baby was born." However, all of the women were anticipating their babies. For example, some women envisioned their baby the same way they did before the hospitalization, while others envisioned the baby differently (baby as smaller instead of larger) since the hospitalization. They described their babies as they envisioned them currently and how they would be in the future. Some women stated that they did not have a relationship with the baby yet, while others described their relationship as already close. Five sub-

themes for Anticipating Motherhood emerged: (a) Thoughts of Being a Mother, (b) Relationship with Baby, (c) Experiencing Baby during Pregnancy, (d) Concerns for Baby, and (e) Envisioning What Baby will be Like.

Thoughts of being a mother. All of the women that spoke of their babies and motherhood felt a sense of protection for their babies at the time of the interview and into the future. However, women varied in the extent to which they thought of themselves as mothers. When talking about being a parent, some women spoke about baby in the future, not the present, while others did not talk about being a mother or their baby much at all. Some participants saw themselves as a mother at the time of the interview, while others saw themselves as a mother after delivery (i.e., "confident to become a mother after", "hasn't kicked in yet", and "haven't put the picture together"). Some participants envisioned becoming a mother as transformative (i.e., "life is changed", "special gift", "no longer the person you were", and "can't think of just me now"), while others could not see themselves in that role at all until the baby was born.

When Kathryn realized that her twin girls could be delivered extremely prematurely, she felt like she became a "parent earlier than expected." Regardless of the outcome of her impending delivery, Kathryn already saw herself as mother to her babies and found it a privilege for the opportunity of being a mother.

> Whether we get 24 hours, 24 days, 24 years…whatever it is that we're given…I'll always be a mom and whether that's 24 hours or 24 minutes or longer, I feel really grateful…it's been…it's been one of the greatest privileges of my life already.

Like Kathryn, Diane already saw herself as mother. However, Diane began feeling like a mother early in pregnancy when she began to show. She had always dreamt of being a mother and had aspirations for her child as she grew older.

> I already kind of felt like a parent when my stomach started growing…I've always wanted to be a mom...it's one of my lifelong dreams…just raising a really good kid…we want her to be well in society, do something good for people, and just have a good, happy kid…healthy kid grow up.

At the time of the interview, Kim already saw herself as a mother. However, she feared that she would lose parts of herself once the baby was born. She envisioned becoming a mother as transformative; she would no longer be the same person as before delivery and grappled with the idea of having to give of herself once the baby was born.

> I'm a mother now, but at the same time, I'm also still…there's a lot of just me left that's not a mother yet…and once you have a child, you switch over and you don't think of yourself, and I know that…but I'm still holding on to parts of that…I can't even think of just me now…because you're just no longer that person that you were.

Several of the participants envisioned themselves as being a mother after the baby was born. They discussed many things they wanted for their children. Judy wanted to be able to provide her twin boys with "the support that they need", while Barbara just wanted to "be a good mother" and wanted "to give my kid a good life." Janice wanted similar things for her baby "just knowing that you're providing a healthy and safe environment…giving them all the love that they need…just raising a good, kind person is what I want."

Dara's thoughts of being a mother were based upon her religious views of child-rearing.

> Just encouraging them to do things that would grow God's Kingdom…I mean, obviously that's extremely important to our family…that's pretty important to us, that they would grow to love (hands on her belly) and fear the Lord and follow His will, and to be confident in His will…no matter what…it is because they're fearfully and wonderfully made.

Despite her concerns for her pregnancy and baby, Elaine could not picture herself as a mother during pregnancy. She discussed that being diagnosed with Sjögren's syndrome earlier in pregnancy had kept her guarded due to potential problems with the pregnancy. Because of this, Elaine was just focused on getting her baby here safely first and then she envisioned herself bonding with the baby after delivery "just trying to make sure she does get here…I feel like (being a mother) has not fully kicked in yet…I haven't fully put the whole picture together yet."

Relationship with baby. Eleven participants expressed some form of excitement for their baby's arrival. Comments regarding the excitement include "ready for baby", "can't wait to hold them or see them", and "can't wait to meet baby." Many of the women had some form of excitement for the upcoming birth of their babies. Kim stated she was "over the moon excited" for the delivery of her baby, as she glanced at her belly. Although her pregnancy was unplanned, Judy was still excited to start a family with her husband "I'm excited to start our little family…it might not be exactly how we originally planned…but, we're doing what we can and have the support that we need…I am excited."

Janice was excited to experience her relationship with her new baby "I'm excited to see how our relationship will be when she's older…I tell her how much I love her (smiling)…how I can't wait to meet her."

Two participants, Kerry and Elaine, did not express excitement about their babies. Kerry was hospitalized for pre-term labor at approximately 31 weeks, taking her away from her stepson and beloved dog. During the interview, she was focused more on herself and being reunited with those at home. Kerry was young, newly married, and had been responsible for caring for her step-son at home. Perhaps, she could not develop excitement for the baby because she was taken away from a part of her life that meant so much to her, her step-son. Elaine, on the other hand, had been diagnosed earlier in the pregnancy with an autoimmune disorder, Sjögrens syndrome, and she knew early on that she had a high-risk pregnancy. She stated that she had not gotten "too close to the baby", in case something did happen during pregnancy. Elaine's statement appears to be a self-protective measure by not allowing herself to develop a close relationship with the baby until after delivery.

Nine women discussed their relationship with their babies, with comments such as "feel connected to baby", "going to be a strong bond between us", and "felt bond early on." Many participants saw their relationship with their babies as building during pregnancy, becoming stronger as the pregnancy continued. Barbara spoke of how each week during pregnancy their relationship "became more real…the bond just felt stronger and stronger."

Piper envisioned a strong bond between herself and her baby.

> I feel there's going to be a stronger bond between us, since I lost my first daughter…I feel like we are going to be a lot alike…she's like my best friend…because she's there all the time…and she'll always be there all the time…I've loved her since the beginning.

Dara, who was carrying triplets, shared her thoughts regarding her relationship with her children at home and the babies she was carrying.

> I just think it's the best thing ever…it just seems like there's so much more love than before…not that we didn't love our children before…I just think that connection…when you first see that heartbeat, when you start to feel them, and when he (husband) talks to them, they go berserk…and so, even that kind of interaction between them and him taking place inside of me…I mean, that's like, I don't know…it makes me feel, like, whole.

Through her tears, Kathryn discussed her relationship with her twins and how it changed when she discovered that they could be born extremely premature.

> We never realized we could love these little girls we've never met before…as deeply as we do…I feel like that love builds when you're pregnant…but then the moment that we thought we were going to lose them…and realized even if we get a day or two with them…so, I think that's changed a lot.

Two women, Kim and Elaine, spoke of how they felt they were going to be close with their babies, but could not envision what their relationships would be like yet. They both explained their relationship with their babies "as not fully formed yet", but they were "getting to know them." Moreover, they imagined that their relationship would not be fully formed until after delivery. Kim stated "I don't know her", when discussing her current relationship with her baby. Perhaps, this is because Kim struggled with the idea

of losing part of herself when she became a mother, not allowing herself to fully build a relationship until after delivery. Elaine discussed her relationship with her baby as not being "fully formed yet 'cause I think part of it was me being in denial that she was there half of the time…so, we haven't fully snapped out of it yet…but it's starting to get there." As discussed earlier, this is believed to be a self-protective measure she used to protect herself from getting too close, in case something happened to the baby.

Four women did not speak of their relationship with their babies. Rachel and Michelle had previous pregnancy complications, perhaps causing some level of hesitation of getting too "attached" to the baby. They seemed more focused on how their other children were dealing at home, instead of the current baby. Judy and Kerry were first time moms and both were young. Judy spoke of her babies fondly throughout the interview, but didn't really know what to expect. Kerry focused more on herself and her step-son at home and could not envision herself as a mother to this baby yet.

Experiencing baby during pregnancy. Many women described feeling fetal movement, hearing their babies' heartbeats, seeing their babies on ultrasound, or interacting with them by talking to them. Some women described their babies as being "active", while others described their babies as "busy bodies." Barbara laid her hand on her belly as she stated that feeling movement made the pregnancy seem real "it makes it seem more real when you can feel."

Hearing her twins' heartbeats provided comfort to Judy because she knew that her babies were still okay "just because their hearts were still beating…that was fine with me….I was hearing them every four hours…I knew they were okay."

Similarly, Melissa found comfort in seeing her twins during her weekly ultrasound "every week I have an ultrasound…it's good to see them moving around in there."

Approximately half of the women spoke of their interactions with their babies, such as "talking to baby" and/or "talking about the baby to others." Kerry discussed how she talked to her baby during pregnancy "I'll talk to my belly…I'm like I can't wait for you to come out", pretending to whisper to the baby.

Piper expressed that her baby could hear her, so she talked to her about everything "I know she hears me, so probably say things that I shouldn't…but I tell her to cover her ears…I've talked to her about her sister."

Dara shared her excitement about how her children at home interacted with the triplets during pregnancy "it's been fun to see them wanting to interact with my bump…they want to get over there and talk to their sisters…and so, even just seeing that…has made it more fun."

Concern for baby. Ten women expressed some level of concern for the baby. The participants that expressed extreme concern were still early in their pregnancies (22-30 weeks gestation), with general worry about their babies and extreme prematurity being the main concerns. Comments included "don't want anything to happen to baby", "want the babies to stay in a little longer", "don't want them to come too early", "want everything to be okay", and "don't want the baby to have to fight."

Three participants expressed their fears of something happening to their babies. When Kathryn was hospitalized for pre-term labor at 23 weeks with twins, she feared that they may not survive, if born at that time. She stated:

> I don't think I fully understood what does 23 weeks mean…What does that mean for the viability of babies? What does that mean for twins? What does that mean life outside the womb? We are very passionate about…hospice…we believe in palliative care…and having a quality of life that we felt was fair for them…so we had conversations about our daughter's lives.

Barbara became tearful when she discussed her fear of losing the baby when her water broke at 29 weeks "for me, it just seemed like just each week that went by, it became more real…and it just felt like I didn't want to lose him."

Diane, who was hospitalized for preeclampsia and PROM at 29 weeks, discussed her fears surrounding her baby's possible premature delivery "I don't want anything to happen to her…I'm worried about her."

Possible twin-to-twin transfusion was a big concern for Judy. During her interview, Judy spoke of the concerns for baby B often, wishing for improvement of baby's B heart.

> They're saying it's probably twin-to-twin transfusion… baby B's umbilical doppler was not quite as strong as it should be…baby B's heart is showing on the doppler that there's no rest in between pumps…and it's causing his heart to stress…and they're worried about it thickening and stiffening up.

Other concerns for baby consisted of the struggles the baby may face, if born too early. This concern was expressed by Melissa, who was hospitalized for shortened cervical length at 24 weeks with twins. At the time of the interview, she had been

hospitalized for three weeks, with no possible discharge or delivery date scheduled. However, she was willing to stay as long as took "'cause I don't want them to come too early…because I don't want them to be in NICU…not for no long time [*sic*]."

Three participants did not discuss their concerns for their babies, however, they otherwise spoke fondly of the babies. Initially, the lack of concern for their babies was alarming and the PI was concerned that these women could be exhibiting problems with attachment to their unborn babies. However, two of these women had been pregnant before, one had a previous complication, and Kim was being induced. Perhaps the low level of, or absence of, concern was because they had already experienced a previous pregnancy, such as Janice, or a previous pregnancy complication, such as Rachel, knowing that "everything would turn out okay." Kim did not discuss any concerns for her baby; however, she was being induced the next day at 34 weeks and expressed that she knew "the baby would be okay."

Envisioning what baby will be like. Eight women talked about what they envisioned their baby will be like, including incorporating the baby into their family. Most participants spoke of the size of their babies, imagining them as "little", "small", or "petite." Interestingly, all of these women smiled when discussing what they imagined their babies to be like. Judy stated that she couldn't imagine big babies anymore, but thought of her babies as smaller "I thought of holding two big babies…normal-sized babies…now, I can't really picture them as big babies…I picture them as the small babies when they're born…I've came to the realization that they're gonna be little."

Other participants discussed how they envisioned their baby's personality, either currently or in the future, demonstrating they understood their baby as a real person with a future in their family. During the interview, Janice explained how active her baby was and often it was difficult for the nurses to obtain her heartbeat. Because of this, she knew "she's going to be a wild one."

Piper also could envision what her baby would be like.

> I feel like she's going to act like her dad…I don't know if that's a good thing or a bad thing yet…I feel like she's very independent…I feel like she might be a momma's girl… that acts just like her daddy.

A few participants envisioned how the baby would be incorporated into their families. Kim saw their family as being transformed and no longer "normal…"it'll never be normal…our old normal again…because we're going to have a whole new member of our family." Kerry saw her baby as just another member of a "very active family."

> I just feel like…if he's healthy and everything, he'll just be along for the ride with everybody else… my oldest son plays travel sports and my youngest one is in kindergarten…and we're a very active family…and we'll just make it work.

Conclusion

The purpose of the study was to describe the high-risk pregnant woman's experience of antepartum hospitalization. The overarching theme, Doing Whatever It Takes, and four additional themes emerged: Flooding Emotions from Hospitalization, Struggling with Uncertainty and Changing Expectations, Dealing with Hospitalization, and Anticipating Motherhood. The initial response to the hospitalization caused a wide

range of negative emotions, as the women struggled with the many unknowns of the hospitalization. Some women "grieved" the loss of the idealized pregnancy, while others "grieved" missing out on the events of pregnancy (i.e., baby showers and preparing the nursery). Despite these difficulties, all women stated feeling safe in the hospital setting because they knew that they, and their babies, were close to care and would receive needed intervention immediately, if the need were to arise. Various ways of Dealing with the Hospitalization included holding on to hope, keeping a positive attitude, relying upon God, and having support from their families. Overall, most women expressed excitement for their babies and becoming a mother, with some already seeing themselves as mothers. Many women described their babies in the present tense and expressed their thoughts of what their babies would be like in the future (i.e., size and personality). However, not all women had these thoughts, with a few women not seeing themselves as mothers "until the baby was born" or "hoping it would develop (being mother) after the baby was born." Some women described their relationship as close already, while a few stated they did not have a relationship with the baby yet, but expected it to form once the baby arrived. Although, the hospital experience was difficult for the women in this study, they all were committed to Doing Whatever It Takes, expressing the will to fight for their babies no matter the difficulties they faced.

CHAPTER V

DISCUSSION

The purpose of this study was to explore the lived experiences of high-risk pregnant women hospitalized for a pregnancy complication. Secondary aims of the study were to discover how hospitalized, high-risk pregnant women felt about their unborn babies and to describe how these women cognitively constructed their transition to becoming a mother. In this chapter, the findings of the study will be discussed in relationship to existing literature and to the theorists of Rubin (1984) and Merleau-Ponty (1945/2012). Additionally, limitations of the study, recommendations for nursing practice, and future research will be discussed.

Overview of Major Findings

The hospitalization was a major disruption to the women's pregnancies and their lives. The PI likened the experience to a roller coaster, in which the women experienced many ups and downs, constantly struggling with the changes that were occurring. Many negative emotions were expressed with the initial hospitalization and persisted throughout the entire experience. These women struggled with the many unknowns of the hospital, unaware of what might happen with them and their babies. They exhibited signs of grief over the loss of their idealized pregnancy and were constantly required to adjust their expectations, depending on the status of their condition. Despite all of this,

all women perceived the hospital as a safe place for them and their babies, knowing they were close to care, if needed.

The women responded to the hospitalization in a variety of ways, including relying upon God, support from others, and keeping a positive outlook. Moreover, women described their anticipation of becoming mothers to their babies, with many of them describing their relationships as already close. Regardless of the difficulties experienced during the hospitalization, the women's overall focus was ensuring the safety of their babies and themselves. They overwhelmingly expressed their drive to do whatever they had to do to ensure that their babies had every opportunity for survival, no matter what they themselves may have had to endure.

The hospitalized experience today is similar to that described in the existing literature in many ways. It has been consistently reported that women respond to the hospitalization with many emotions, with stress and anxiety dominating the experience at times (Clauson, 1996; Heaman, 1992; Heaman, & Gupton, 1998; Mercer & Ferketich, 1988). A variety of ways of coping by high-risk pregnant women dealing with the hospitalization are described, including support from others, reliance upon God, and staying positive (Gupton et al., 1997; Heaman & Gupton, 1998; Kent et al., 2015; Mercer & Ferketich, 1998; Rubarth et al., 2012). Challenges for these women come from their lost sense of control over the pregnancy and its outcome (Heaman & Gupton, 1998; Leichtentritt et al., 2005; Rubarth et al., 2012; Stainton et al., 2005). The many uncertainties surrounding the hospitalization, including what could happen to their babies and themselves (Clauson, 1996; Stainton et al., 2005). It has also been similarly noted

that the hospitalized experience can cause high-risk women to alter or adjust their maternal identities in response to the hospitalization (Lederman et al., 2013; Markovic et al., 2006; Mu, 2004).

Although similarities were found when compared to the existing literature, a few notable differences emerged from the current study. The primary focus for the women in this study was seeking safe passage for their babies and themselves. No matter the difficulties they faced, the women were willing to fight for the safety of their babies and themselves. Although this will to fight has been reported in previous studies, it was not found to be the primary focus of the high-risk women, instead the will to fight was reported as one of the many responses to the hospitalized experience (Gupton et al., 1997; Heaman & Gupton, 1998; Lederman et al., 2013; Markovic et al., 2006; Mu, 2004; Rubarth et al., 2012). Many women described their relationship with their babies as growing stronger as the pregnancy continued, differing from other studies that reported the relationship between mother and baby may be affected and possibly weakened by the hospitalization (Pisoni et al., 2016; White et al., 2008). Women in this study described the helpfulness of technology to stay connected to family and friends during hospitalization, differing from older studies where the use technology was not a prevalent avenue of communication. Additionally, the women described the emotional effects (e.g., boredom and isolation) of bed rest; whereas in previous studies, deleterious physical effects of bed rest were reported, in addition to emotional effects. This finding could be due to the change in bed rest recommendations (ACOG, 2012; McCall et al., 2013). In the past, complete bed rest was often prescribed. Today, intermittent bed rest

is used more frequently, potentially reducing the number of reported negative physical effects of bed rest.

Theoretical Perspectives

To better understand the hospitalized experience, Rubin's (1984) maternal identity and tasks of pregnancy were used as a lens to understand the processes that women experience during pregnancy and how these processes may be altered in a high-risk pregnancy. Although the PI had previous knowledge of Rubin's work, she relied upon the data themselves and strove to avoid reaching conclusions prematurely during data analysis. Merleau-Ponty's (1945/2012) life worlds were used as a lens in which to understand the hospital experience among the participants. His work provided the PI the ability to understand the differences between participants in the current study and previous literature. Additionally, the PI reviewed the existing literature after data analysis was completed to ensure that the literature did not influence the findings in the current study. Study findings and their relationship to Rubin's and Merleau-Ponty's work will be discussed below

Discussion of Themes and Existing Literature

Overall, the current findings provide a picture of the hospitalized experience for today's high-risk pregnant women. Being hospitalized is difficult and riddled with many challenges. However, these women were committed to doing whatever they had to do to ensure the safety of their babies and themselves. The following section will be organized by the overarching theme of Doing Whatever It Takes and other themes (i.e., Flooding Emotions from Hospitalization, Struggling with Uncertainty and Changing Expectations,

Dealing with Hospitalization, and Anticipating Motherhood) discovered through data analysis and described in Chapter Four. Each theme will be discussed in detail, along with comparison to the existing literature.

Doing Whatever It Takes

The ups and downs of the hospitalization elicited various reactions among the participants in this study. However, one reaction that was predominant among all women was the overarching theme of Doing Whatever It Takes. Despite the difficulties that the hospital caused these women, they still were willing to do whatever they had to for the safety of their baby and themselves. Doing Whatever It Takes was how the women coped or dealt with the unanticipated changes in their pregnancies because they were willing to fight for their babies, no matter the adversities they faced. Although being in the hospital was difficult and concerning at times, the women wanted what was best for them and baby, and were willing to do whatever they had to do to maintain the pregnancy as long as possible.

These women's willingness to do whatever it took to ensure the health of their babies and/or themselves can best be understood by looking at Rubin's work on the maternal tasks of pregnancy (Rubin, 1984). Rubin posited that a pregnant woman seeks to protect her baby from actual or potential dangers in the environment, ensuring safe passage for the baby. Ensuring safe passage is undertaken by seeking information about what to expect, how to cope with the pregnancy, and through prenatal care, with this data-gathering being "continuous and cumulative" (p. 55). Some women in this study

sought additional information regarding their conditions, with the ultimate goal of seeking safe passage for themselves and their babies.

Rubin (1984) stated that during the second trimester, the woman becomes more aware of the baby, with the focus being on its well-being. The pregnant woman begins to attach value to the baby and begins to become protective of the baby growing inside her. In the third trimester of pregnancy, the concern for safety is focused on the baby and self without separation. "What endangers one endangers the other" (p. 55). These notions of protectiveness were described by the women in this study. These women were willing to do whatever it took to ensure the safety of their babies and themselves. Rubin further states that as all the tasks are attained, the pregnant woman "works at the essential and substantive meaning of giving" (p. 66). During this task, the woman recognizes the baby as valued and gives of her time and energy, nurturing the baby and developing an attachment to the baby. With Rubin's task of giving of self, it is apparent that there is unwavering commitment of pregnant women to ensure the safety of their babies. During this task, women's behaviors can change to master the task of giving of self.

In this study, it was apparent that the women were engaged in Rubin's maternal tasks of seeking safe passage, binding-in, and giving of self. Although the women faced many difficulties associated with their high-risk conditions and hospitalization, they were willing to adapt to their situation for the safety of their babies, ultimately placing all of their difficulties aside. This demonstrates their unwavering commitment to their babies and their growing relationship. Similar to these finding of Doing Whatever It Takes, other studies have found that women were willing to adapt and adjust their behavior to

protect their babies and prevent further deterioration of their conditions (Gupton et al., 1997; Heaman & Gupton, 1998; Lederman et al., 2013; Markovic et al., 2006; Mu, 2004; Rubarth et al., 2012). However, in this study, the women described their willingness to do whatever it took for their babies and themselves as the primary focus of their hospital experience, rather than just a response to the hospitalization, as described in previous studies.

Flooding Emotions from Hospitalization

Similar to studies in the 1990s and early 2000s, women in this study reported admission to the hospital for a high-risk pregnancy condition as an emotional experience, prompting the need to process and accept their altered pregnancy (Kent et al., 2015; Rubarth et al., 2012). Emotions prompted by being hospitalized have been described as anger, anxiety, depression, disappointment, feelings of shock and confusion, frustration, guilt, loneliness, mood swings, and at times, an emotional roller coaster (Gupton et al., 1997; Rubarth et al., 2012). In the current study, women described having a variety of responses to being hospitalized unexpectedly.

Unanticipated hospitalization elicited several negative emotions (e.g., fear, worry, stress, and anxiety), leaving the women uncertain of what they and their babies may face. Some women seemed to grieve the loss of their once idealized normal pregnancy, while others were already aware that their pregnancy was considered high-risk prior to hospitalization. For both groups, however, the hospitalization altered their expectations of the pregnancy, causing feelings of stress, anxiety, and even in some women, depression. This transformation in pregnancy expectations occurred instantaneously

upon admission to the hospital, when women realized that their expected pregnancy would no longer be possible. For many women, this realization was difficult to handle, with the resulting emotions, such as stress and anxiety, dominating the experience.

The hospitalized experience can be compared to a roller coaster, with the many ups, downs, twists, and turns that occurred with these women's emotions. Some women described these emotional fluctuations as only occurring when their condition improved or worsened, while some women described these adjustments occurring daily, depending on their general mood that day. A similar finding was described by Rubarth et al. (2012), where women were seen as fighting an internal war with themselves, with the feeling of being on an emotional roller coaster. Additionally, some of the participants in Rubarth's study described moments of utter despair contrasted with delightful moments when their condition improved.

As stated previously, stress and anxiety were predominant emotions that stemmed from being hospitalized, with some women stating that these two emotions often dominated. These findings mirror those found in the current literature; i.e., pregnant women hospitalized for a high-risk condition exhibit extreme levels of stress and anxiety (Clauson, 1996; Heaman, 1992; Heaman & Gupton, 1998; Mercer & Ferketich, 1988), with some women experiencing periods of depression (Rubarth et al. 2012). Rubarth et al.'s (2012) participants felt depressed during their hospitalization, stemming from feelings of anxiety, sadness, helplessness, and the inability to control the situation. In the current study, participants expressed similar feelings of anxiety, with two participants expressing feelings of depression. One participant anticipated being depressed once the

babies were born because of all the things that her babies could potentially have to face, if born premature, while another participant battled her depression more frequently and described herself as "stripped down." She went on to describe how she handled each day depending on how she felt emotionally, with some days being extremely emotional for her and other days being more positive.

Some women in the study reported that their stress, anxiety and depression improved over the course of their hospital stay because they had adjusted to being in the hospital. This finding is similar to that of other studies which investigated depressive symptoms in high-risk hospitalized women, where a decrease in depressive symptoms was reported the longer they were hospitalized (Byatt et al., 2014; Maloni et al., 2005). Admission to the hospital for the high-risk condition can elicit high levels of anxiety and depression, and although these levels may decrease the longer the women are hospitalized, anxiety and depression levels still are higher in hospitalized high-risk women compared to most pregnant women without complications.

Although the participants experienced negative emotions, many understood that the purpose of the hospitalization was doing what was best for the safety of themselves and their babies. They were there to "keep the babies alive." The hospital was a necessity for them to ensure the health for their babies and for some, the health of themselves. Rubarth et al. (2012) similarly found that as women adjusted to the hospital, they began to search for the meaning (or purpose) of the hospitalization.

As women adjusted to being in the hospital and sought meaning for being there, many saw the hospital as a safe place. They found comfort in knowing that they had

quick access to care, if warranted. Interestingly, despite all the negative emotions associated with the hospitalization, many women said they were thankful to be in the hospital, knowing that care was available to them constantly. Although not predominant in the literature, two studies had similar findings, where women reported feeling safe in the hospital because of close monitoring and described being sent home prior to delivery as dangerous (Maloni & Kutil, 2000; Stainton et al., 2005).

According to Merleau-Ponty (1945/2012), perceptions of an experience are often present in time (temporality) and space (spatiality), with space being revised and reorganized by time. The woman's physical space is altered when hospitalized because she is no longer living in her home, where she is able to be with family and prepare for the baby's upcoming arrival. Rubarth et al. (2012) reported that the hospital space is different and unfamiliar to the high-risk pregnant woman, causing alterations in her perceptions of the experience. However, although the women in this study had an altered view of their pregnancy, they did not envision the hospital as a threat to their safety or the baby's safety. Instead, they saw the hospital as necessary to ensure the safety of themselves and their babies, providing them comfort in knowing that care was at close proximity, if needed.

Struggling with Uncertainty and Changing Expectations

For each of the participants in the study, the expectations for their pregnancy changed when they were hospitalized. Consequently, women struggled with the many uncertainties imposed by the hospitalization. Even women who were aware that their pregnancy was high-risk prior to the hospitalization experienced this change in

expectations and struggled with the unknown. Every participant expressed some level of uncertainty about their pregnancy caused by the hospitalization. Markovic et al. (2006) had similar findings, describing how the sudden, unexpected and worrying signs of the pregnancy complications caused an altered view of pregnancy, due to the possibility of a threatened pregnancy.

Many women imagined their pregnancy would follow the "normal" pregnancy path, without any deviations. They never imagined being uprooted from their everyday lives and separated from their families. Some women expected that this pregnancy would follow the same path as a previous pregnancy; while primiparas based their expectations for pregnancy on friends' or family members' experiences. These changes in plans for their pregnancy caused them to restructure their previous thoughts and envision their pregnancy differently. Many stated that they had to change all of their plans (e.g., baby shower, maternity photos, nursery, and other prepping for baby) but were adapting to the idea, while others really struggled with these adjustments. These variations in the participant's responses are best understood through pondering Merlau-Ponty's (1945/2012) notion of time and space. Merleau-Ponty believed that the dimension of time is perceived differently for individuals because of their interactions, past and present, with the world around them. With the high-risk pregnancy, these women were uncertain about length of their pregnancies, potentially altering and/or influencing their perceptions and the hospital experience. Perceptions were further altered for the women in this study because the hospital was an unfamiliar place.

Interestingly, some women in this study believed that the reason for their hospitalization was that their bodies were not working properly; blaming themselves or their bodies for the high-risk pregnancy. Only one other study in the literature reported a similar finding, Markovic et al. (2006) found that the women in their study expressed a sudden transformation from being pregnant to being "sick" in pregnancy upon the development of the pregnancy complication. Additionally, Merleau-Ponty's (1945/2012) body (corporeality) life world assisted the PI in understanding these women who envisioned their bodies as being the problem, causing their high-risk condition. Merleau-Ponty posited that individuals have a simultaneous production of images of their bodies with changes. During pregnancy, the body undergoes extensive physical changes and the women develop tentative impressions of what being pregnant will look like. As her body grows, the images of the body stem from the woman's own mirrored reflection of herself. The growth of the woman's body can represent both positive and negative experiences. In this case, these women experienced their bodies as negative because it could not perform effectively for her and the baby.

Although in reality, pregnant women have very little control over their pregnancy and delivery, regardless of risk status, women in this study found the loss of the sense of control over the pregnancy and its outcome difficult. Prior to being diagnosed as high-risk, many of the women reported feeling a sense of control over the outcome of the pregnancy. With the hospitalization, the women's sense of control was taken from them, causing them to struggle with the many uncertainties of what may happen. The literature echoes this finding; the loss of (or lack of) control is reported to be stressful for many

women (Heaman & Gupton, 1998; Leichtentritt et al., 2005; Rubarth et al., 2012; Stainton et al., 2005).

Not knowing what to expect was a concern of most women in the current study. There were many uncertainties surrounding the hospitalization, including how long it would last, when they would deliver, and what would happen to themselves and their babies following delivery. This finding was similar to many other studies, in which the women described their hospital experience as an uncertain environment laden with worry and waiting (Clauson, 1996; Stainton et al., 2005). Additionally, Clauson found that there was a significant, positive correlation between the level of uncertainty and length of stay, indicating that women reported higher levels of uncertainty with longer hospital stays. This finding varies slightly from the current study, where uncertainty was described by women with various length of stays (range: 2-21 days) and did not appear to differ in intensity. Although uncertainty was not measured nor the focus of this qualitative study, this difference could be attributed to the number of days hospitalized, with women in Clauson's study being hospitalized for a longer length of time (range 2-42 days).

The predominant challenge expressed in this study was the separation from family and friends, being unable to see them regularly. Some of this separation was due to the distance between hospital and home, and some was due to a facility-wide flu-restriction policy that was implemented during data collection for this study, which prevented children younger than 12 years of age from visiting. Women who were interviewed during the restricted visitation period did not seem to express more separation issues than

those not affected, possibly due to advances in technology and the ability to video chat with their children at home, easing the restriction and making them feel more connected. Maloni and Kutil (2000) also reported that women expressed worry over being missed by their children. Additionally, these women discussed losses associated with bed rest, such as isolation, loss of control, loss of roles, and loss of their usual environment.

Although the women in the current study did express feelings of loneliness and isolation, the ability to video chat with friends and family and connect through social media seemed to assist them in feeling more connected to their loved ones. This finding varies from another more recent study, which found that women who were hospitalized felt socially disconnected from family members and expressed feelings of loneliness and isolation (Kent et al., 2015).

Although previous studies have found deleterious physical effects of bed rest, this was not mentioned at all by participants. Earlier studies reported multiple physical side effects of bed rest such as difficulty sleeping at night, becoming tired easily, feeling weaker, problems with digestion and constipation, physical aches and pains, sore and stiff joints, weight loss, and loss of muscle tone (Gupton et al., 1997; Maloni & Kutil, 2000; Maloni & Schneider, 2002; Maloni, 2010; Stainton et al., 2005). Although the participants were not specifically asked about physical effects of bed rest in the current study, women described deleterious emotional effects of bed rest as "boredom" and "isolation", rather than actual physical effects. These differences in findings could be due to the changes in recommendations for bed rest (ACOG, 2012). Currently, bed rest is suggested for acute and/or serious complications (e.g., active preterm labor with cervical

change, incompetent cervix with cervical change, and extreme (unstable) hypertension) only (ACOG, 2012). With other pregnancy complications (e.g., preterm labor and/or incompetent cervix without cervical change, premature rupture of membranes, and stable hypertension), bed rest is not recommended (McCall et al., 2013). The latter was the case for the women in this study. Although many of them described complete or modified bed rest initially, none of them were prescribed strict bed rest. This could help explain the differences between studies because the women in this study had more freedom to move about the room and were not strictly confined to the bed, were allowed to walk in the room, use the restroom independently, and many women were allowed to walk in the hallway of the unit. A few women in the study were even allowed to leave the unit for short periods of time.

Dealing with Hospitalization

Participants in this study dealt with the unexpected hospitalization in varied ways. Many of the women held onto hope for the pregnancy by having a positive attitude, relying upon God, and/or having support from their families. These variations are best understood through the lenses of Merleau-Ponty's (1945/2012) dimensions of time and space. Merleau-Ponty believed that perceptions of an experience are often present in time and space, with space being revised and reorganized by time. Pregnancy is a time-sensitive event where time is inherent in the experience and many women often 'mark-off' time in accordance with the growth of their baby or by their due date. However, the dimension of time is conceptualized and perceived differently for each pregnant woman because of their past and present interactions with the world (Merleau-Ponty), especially

those with a high-risk pregnancy. In a high-risk pregnancy, the end or length of pregnancy is uncertain, potentially altering the dimension of time and influencing her perception of the pregnancy and the hospital experience. Some women perceive time as a way to cope by setting milestones to reach during the hospitalization (e.g., fetal viability and fewer symptoms associated with the high-risk condition) (Rubarth et al., 2012), while others perceive time as slowing down or stopping during the experience (Schroeder, 1996). Additionally, the hospital space is unfamiliar and different to the high-risk pregnant woman, potentially causing alterations in her perceptions of the experience (Merleau-Ponty).

Many women described having hope for a good outcome for the pregnancy, for the baby, and in some instances, for themselves. For some women, seeing other babies in the neonatal intensive care unit (NICU) gave them hope for their baby's survival, while others expressed hope when their condition seemed to be stable. The sense of hope counteracted the many worries and concerns associated with their situation. These findings were similar to those found by Price et al. (2007), where women were inclined to hope, pray, and wish for a good outcome for the pregnancy. This sense of hope helped calm the many fears that these women expressed.

Having a positive attitude throughout the experience was expressed by many women in this study. Each day they remained pregnant was seen as a gift, which demonstrated the overwhelming positivity that these women had towards their situation. This finding is not surprising because all of these women expressed the need to remain positive throughout the hospitalized experience. Many women expressed that staying

positive was their "normal" way of looking at things, while others stated that being positive was a necessity, and "not their normal" outlook. These women felt that if they kept a positive outlook then positive things would happen, while a negative outlook could have a negative impact on their pregnancy, baby, and/or situation. This finding was similar to other studies completed on the hospitalized experience, where women described keeping a positive attitude as helpful coping mechanism (Gupton et al., 1997; Heaman & Gupton, 1998).

A few participants discussed the importance of relying upon a higher power and how it helped them deal with the hospitalization. They used prayer throughout their experience and placed their trust in God to guide them through the difficult times they faced currently and into the future. Similar to other studies, these women found peace and comfort in knowing that God was in control. In previous studies, women of faith used scripture and prayer during the experience of hospitalized bed rest (Gupton et al., 1997; Rubarth et al., 2012) and fully relied upon God to effectively deal with the hospitalization (Heaman & Gupton, 1998; Rubarth et al., 2012).

Social support is a key aspect of the hospitalized experience and has a big impact on women's ability to cope with the changing circumstances of their high-risk pregnancy (Gupton et al., 1997; Kent et al., 2015; Mercer & Ferketich, 1988; Rubarth et al., 2012; Sittner et al., 2005). Merleau-Ponty (1945/2012) posited that relationships with others are characterized by a mutual interaction between individuals, including the interactions with the unborn baby. These interactions alter and shape the woman's perception of the experience (Merleau-Ponty). This was true in the current study, with the importance of

social support during the hospitalized experience being discussed by many participants. Support was defined as a physical presence in the room, by individuals completing things for them (e.g., help with other children), talking or video-chatting with family, and having confidence in healthcare providers (e.g., care provided). The participants discussed the importance of having a connection with the healthcare providers and how that connection, along with the physical proximity, provided them with comfort and peace. In two previous studies, support the women received from family, friends, and healthcare providers was an important aspect of the hospitalized experience, helping them deal with their situation more effectively (Gupton et al., 1997; Kent et al., 2015) and helping mediate the stress of bed rest by providing a distraction for the hospitalized women (Rubarth et al., 2012). In the current study, visitors were seen a way to feel connected to the outside world and helped pass the time for the women, even when the visitors were healthcare providers. One difference noted in this study compared to others is that these women discussed staying connected and feeling supported through social media and video chatting even when family and friends were unable to visit. Other studies did not mention the use of technology to facilitate connection.

Goal setting was another way of dealing with the hospitalization for some women in this study. Goals were either short-term (e.g., hourly or daily) or long-term (e.g., making it to 28 weeks gestation or beyond). These women described setting goals that they could achieve. Once achieved, many women would set another achievable goal. Setting goals helped them deal with the ever-changing hospital environment, and they reported feeling accomplished each time a goal was achieved. Goal setting was not a

prominent finding in the literature with the exception of Gupton et al.'s (1997) work, which found that women dealt with the hospitalization by taking their situation one day at a time because the environment was seen as ever-changing.

Although not a prominent finding, some women discussed ways they stayed informed to deal with the hospitalization. Whether it was about their diagnosis, the hospitalization, the baby, and/or their impending delivery, seeking information from the internet, or visiting the NICU helped them deal with the many uncertainties of the hospitalization. Many found solace in knowing what to expect with their baby following delivery. They spoke of how helpful it was to see other babies with similar problems and/or gestation, in the NICU, helping them prepare mentally for what they and/or babies may have to endure in the coming weeks/months. Other studies have reported similar findings. Searching for meaning and learning more about their high-risk condition was important for hospitalized high-risk women in the Rubarth et al. (2012) and Leichtentritt et al. (2005) studies. Additionally, women described staying informed of their plan of care and having access to health information as helpful (Sittner et al., 2005). In the current study, some women described the need to stay informed of what was occurring now or what could occur later. This information helped them to better understand their condition and the possible outcomes for them and the baby. However, not all women in this study sought additional information regarding their condition. These differences could be because they did not want to see or hear anything negative, because they did not know how to seek additional information, or because they preferred to limit information that might upset them. For example, Leichtentritt et al. (2005) shared that one woman

expressed that she had “read too many books” about the risks that are involved in pregnancy and “it was a mistake” to do so (p. 49). However, another participant stated “knowing what is about to happen organizes me” (p. 49). These contradictions were found among the women in this study as well.

The philosophy of Merleau-Ponty (1945/2012) is helpful in understanding how the participants dealt with the hospitalization. Merleau-Ponty believed that life experiences are given meaning and understanding when a description of the human experience and behaviors are explored as they are lived. This held true for the women in this study. Each woman in this study had encountered different life experiences and had different stories to tell, causing them to have different reactions to the hospitalization. Understanding these experiences as unique for each individual is important in truly understanding the many ways of dealing with the hospitalization.

Anticipating Motherhood

Most women in this study expressed excitement over being a mother and already saw themselves in the role of mother. Other women could envision themselves becoming a mother after the baby was born. Still others hoped they would begin to feel like a mother after the baby was born. Furthermore, some women envisioned their babies the same as before, while others envisioned their babies differently, for instance, as smaller than originally envisioned. Some women described their relationship with their baby as close already, while others stated that they did not have a relationship with the baby yet. These varying degrees of feeling like a mother can best be understood by Rubin’s work on maternal identity.

Rubin's (1984) work on maternal identity posits that fetal movement begins to transform the imaginary baby into a real, living baby and increases the mother's protectiveness of the baby. As the baby continues to grow during pregnancy, the mother continues to develop a relationship with the baby and dreams of what the baby will be like. This notion is similar to what was found in this study. Many women stated that feeling the baby move made the baby seem more real. Furthermore, the women expressed that as the pregnancy continued and the baby grew, their love for the baby became stronger. This love for their babies caused them to show concern for their health and safety, and caused them to be willing do whatever they had to do to ensure their safety.

In this study, women had many uncertainties about what would happen to them and their babies, causing periods of anxiety, sometimes, extreme anxiety. Additionally, some women expressed periods of sadness over the loss of the idealized pregnancy and baby. This finding is similar to Rubin's (1984) work on maternal identity. Rubin described that when a baby is born early or born with a defect, the mother will mourn the loss of the idealized baby. The anticipation and preparation required during pregnancy involves fantasizing about how being a mother to their baby will be. While pleasant fantasies create hope, unpleasant fantasies create anxiety. According to Rubin, fantasy is instrumental for a woman in binding-in to the baby and visualizing herself as mother. In this study, women fantasized about their babies differently than before hospitalization. Before being hospitalized, the women fantasized about carrying the baby to term or close to term and bringing home the baby after delivery. However, the hospitalization changed

this fantasy for many of the women. Now, they were looking towards possible NICU stays for their babies, with an undetermined length of time, and in some women, uncertainty surrounding if their babies would even survive, causing a dramatic shift in their fantasies of their babies.

Dedifferentiation is an "examination and evaluation for goodness of fit with current self-image" (Rubin, 1984, p. 50). During dedifferentiation, there is a "trying-on" (introjection) of a new element and projection of the new element in action or appearance (p. 50). Then, the woman will make a decision to accept or reject the new element as a part of herself as mother. Rubin posits that there is little dedifferentiation in the antepartum period, with most occurring in the postpartum period. In this study, some women expressed that they were already a mother during pregnancy, suggesting that Rubin's notion of dedifferentiation may occur earlier in high-risk pregnant women. A few women stated that they were already mothers to their unborn baby and acted as if they were already parenting during pregnancy. Two previous studies suggested that parenting is a developmental process that begins during pregnancy, with the pregnant woman developing an attachment to and showing affection for her unborn baby, which evolves over time (Côté-Arsenault et al., 2015; Deave et al., 2008). However, Rubin's work was completed over three decades ago and much has changed in the care of pregnant women today. More and more women are entering pregnancy with underlying medical conditions (e.g., obesity, hypertension, diabetes, autoimmune disorders and cardiac conditions), causing an increase in the number of women facing complications during pregnancy (CDC, 2015). These complications could accelerate the development

of the maternal identity much faster than others and lead women to begin to parent their baby in the prenatal period. Furthermore, the increased use of and sensitivity of technology, such as ultrasound, makes the pregnancy more real for women earlier in the pregnancy, potentially accelerating the maternal identity formation.

In this study, the women described having to revise how they previously fantasized about their pregnancies and babies. This change caused many to picture how life would be with their babies, currently and in the future. Where they once envisioned their babies as "big" or "full-term", they now envisioned their babies as "small" or "pre-term." This change caused them to revise their previous idealization of their babies, potentially facilitating the developing relationship between the high-risk pregnant woman and her baby. This finding is similar to three other studies that investigated the developing maternal identity among hospitalized high-risk pregnant women (Lederman et al., 2013; Markovic et al., 2006; Mu, 2004). These studies found that high-risk pregnant women revised their developing maternal identity as a consequence of the hospitalization, which is similar to the current study. All these studies suggest that hospitalization for a high-risk condition could facilitate the developing relationship between the high-risk pregnant woman and her baby.

A few other studies investigating maternal role development and/or prenatal attachment may suggest otherwise. Emmanuel et al. (2011) found a significant negative relationship existed between maternal role development and maternal distress, suggesting that as women experienced an increase in maternal distress, they experienced difficulties in maternal role development. Furthermore, two additional studies investigating prenatal

attachment in high-risk pregnant found that the attachment process may be affected and possibly weakened by the hospitalization (Pisoni et al., 2016; White et al., 2008). However, in the current study, the relationship between the high-risk pregnant woman and her baby did not appear to be weakened, but instead enhanced. Nine women discussed their relationship with their babies, with comments such as "feel connected to baby", "going to be a strong bond between us", and "felt bond early on." Many participants saw their relationship with their babies as building during pregnancy, becoming stronger as the pregnancy continued. Clearly more research is needed in this area.

Many of the participants expressed some level of concern for their baby. Those women with extreme concern were still early in their pregnancies (22-30 weeks gestation) when they encountered problems with the pregnancy. Consistent with the work of Maloni and Kutil (2000), women in this study expressed general worry about their babies and extreme prematurity was the main concern.

Implications for Nursing Practice

Being hospitalized during a high-risk pregnancy can alter the usual developmental process of pregnancy, causing women to develop specific needs during the hospitalization that must be addressed (Kent et al., 2015). Nurses are in frequent contact with hospitalized women and could assist them with any specific needs they may encounter. In this study, many women expressed anxiety over losing control over their situation. Providing opportunities for choice that are reasonable and safe (e.g., providing

additional visiting hours and having choices over their daily schedules) may provide these women with a reasonable amount of control over their hospital stay.

Many of the women described that setting goals helped them pass time or feel accomplished. By celebrating milestones or goals, nurses could provide a sense of community for these individuals, acknowledging the difficulties these women face. Also, the women in this study expressed that the hospital was often overwhelming. Some women did not have regular visitors or a well-developed support system. Developing a support system of other hospitalized pregnant women may help moderate some of these overwhelming feelings that are experienced. Having the ability to relate to others with similar circumstances may help these women deal with the hospitalization more effectively.

During hospitalization, stress and anxiety can dominate, with some women experiencing periods of depression. Nurses should be aware of the psychosocial needs of these women, not only their physiological needs. Evidence-based initiatives should be implemented to maintain maternal well-being and to improve the psychosocial adaptation of these women (Fiskin, Kaydirak, & Oskay, 2017). Additionally, screening women for symptoms of stress, anxiety, and depression and offering options to help manage these symptoms would be beneficial, such as journal writing, crocheting/knitting, and scrapbooking. Due to the importance of staying connected to family and friends expressed by the women in this study, insuring strong wireless connections throughout the hospital, and possibly websites to share information with family should be

implemented by healthcare facilities. Also, providing tablets to hospitalized women could help them communicate with family more effectively.

Recommendations for Future Research

Future research should include significant others and their feelings regarding the hospitalized experience to fully understand the impact that hospitalization can have on the family unit. Although only a few fathers were present during the interviews in this study, they were found to be an important aspect to the women's hospital experience and their data should be included in future studies. Additionally, a longitudinal study with multiple interviews at predetermined times, including after delivery, could be completed to understand how being hospitalized could affect the developing maternal identity and their relationship with the babies over time. This could be used to compare physiological and psychological outcomes of hospitalized vs. non-hospitalized, and high-risk vs. low-risk women. More research is also needed to investigate how the development of maternal identity may vary in high-risk and low-risk women.

Limitations

One limitation in this study was the variance in the number of days hospitalized among the participants, potentially impacting their understanding and responses of the experience. Participant's complications varied, so it is possible that combining them in one study may have masked potential differences in women with differing types of complications. Similarly, women experiencing short-term hospitalization may differ from those who are hospitalized for longer periods, and primiparas may differ in their experiences of hospitalization from multiparas. Another limitation was the cross-

sectional design of the study, knowing that the woman's experience may change over time. Additionally, some women were discharged from the hospital prior to delivery and others delivered before another interview could be obtained, making member-checking difficult. A final limitation of the study is the possibility that some participants may have changed their responses or behavior simply by being a part of a research study. This was minimized by ensuring that the women were comfortable throughout the interview and by making the interview process conversational, allowing them time to reflect upon their experience.

Conclusion

The experiences of these high-risk, hospitalized women further informs the body of literature that exists for high-risk pregnancy and the hospitalized experience. A hermeneutic, phenomenological approach provided a richer understanding of the experience of being hospitalized for a pregnancy complication. Women experienced a variety of emotions, with stress and anxiety dominating, leaving them with uncertainty of what would happen. Despite these negative emotions and unknown outcomes, the women felt safe in the hospital. Struggling with the uncertainty and the changing expectations of pregnancy was expressed by many, causing fluctuations in their emotions and ability to adapt to the changes. However, regardless of the struggles these women experienced, they were willing to do whatever it took for the safety of their babies. Three new findings emerged from this study. First, the developing relationship between mother and baby was described by many as growing stronger as the pregnancy continued. Second, the use of technology to stay connected to family and friends during

hospitalization was reported as being helpful by the women in this study. Finally, previous studies reported deleterious physical effects of bed rest; whereas in this study, women described emotional effects, such as "boredom" and "isolation", rather than describing any physical effects.

Rubin's (1984) work on maternal identity, including the tasks of pregnancy and the philosophy of Merleau-Ponty (1945/2012) were useful in guiding this study. Rubin's work on maternal identity helped understand the expected processes that women experience during pregnancy and how the process may be affected in a high-risk pregnancy. Moreover, the under-girding with Merleau-Ponty's (1945/2012) philosophy, which posited that life experiences are best understood as they are lived, assisted the PI in understanding the unique perspectives of the experience of these women by focusing on their day-to-day lives while hospitalized.

Over the last thirty years, many changes in pregnancy and care have occurred. More and more women are now entering pregnancy with a chronic condition, triggering a significant rise in the number of women being diagnosed as high-risk during pregnancy (CDC, 2015). Additionally, bed rest recommendations for high-risk pregnancies have recently changed, with current bed rest recommendations for only acute and/or serious complications (e.g., active preterm labor with cervical change, incompetent cervix with cervical change, and extreme hypertension) (ACOG, 2012; McCall et al., 2013), eliminating the need for complete bed rest for many women. Now, intermittent bed rest is used more frequently; thereby making the number of physical effects previously reported in older studies less prominent. Moreover, the increasing use of technology is

changing the hospitalization experience, due to the ubiquitous access to devices that allow high-risk women to stay connected to family and friends more easily. It is important for nurses working with high-risk pregnant women to understand the experience of hospitalization, so they can devise interventions to ameliorate some of the negative effects and turn the hospitalization into a time of developing a relationship with their babies.

REFERENCES

Alhusen, J. L. (2008). A literature update on maternal-fetal attachment. *Journal of Obstetric, Gynecologic, and Neonatal Nursing, 37,* 315–328.

Alhusen, J.L., Gross, D., Hayat, M. J., Rose, L., & Sharps, P. (2012). The role of mental health on maternal-fetal attachment in low-income women. *Journal of Obstetric, Gynecologic, and Neonatal Nursing, 41*(6), e71-e81. Doi: 10.1111/j.1552-6909.2012.01385.x

American Psychological Association. (2017). *Stress effects on the body*. Retrieved from http://www.apa.org/helpcenter/stress-body.aspx

Avant, K. C. (1982). A maternal attachment assessment strategy. In S. S. Humenick (Ed.), *Analysis of current assessment strategies in the health care of young children and childbearing families* (p. 171-178). Norwalk, CT: Appleton-Century-Crofts.

Ayers, S., & Pickering, A. D. (2005). Women's expectations and experience of birth. *Psychology and Health, 20*(1), 79-92. Doi: 10.1080/088704404200272912

Barlow, J. H., Hainsworth, J., & Thornton, S. (2008). Women's experiences of hospitalization with hypertension during pregnancy: Feeling a fraud. *Journal of Reproductive and Infant Psychology, 26*(3), 157-167. Doi: 10.1080/02646830701691384

Barrera, M., Sandler, I. M., & Ramsay, T. B. (1981). Preliminary development of a scale of social support: Studies on college students. *American Journal of Community Psychology, 9*, 435-446.

Bauer, C. L., Victorson, D., Rosenbloom, S., Barocas, J., & Silver, R. K. (2010). Alleviating distress during antepartum hospitalization: A randomized controlled trial of music and recreation therapy. *Journal of Women's Health, 19*(3), 523-531. Doi: 10.1089/jwh.2008.1344

Beck, A. T., & Beck, R. W., (1972). Screening depressed patients in family practice. A rapid technic. *Postgraduate Medicine, 52*, 81–85.

Berryman, J. C., & Windridge, K. C. (1996). Pregnancy after 35 and attachment to the fetus. *Journal of Reproductive and Infant Psychology, 14*(2), 133-143. Doi: 10.1080/02646839608404510.

Biggio, J. R. (2013). Bed rest in pregnancy: Time to put the issue to rest. *Obstetrics & Gynecology, 121*(6), 1158-1160.

Bloom, K. C. (1998). Perceived relationship with the father of the baby and maternal attachment in adolescents. *Journal of Obstetric, Gynecologic, and Neonatal Nursing,27,* 420-430.

Bloom, K. C. (1995). The development of attachment behaviors in pregnant adolescents. *Nursing Research, 44*(5), 284-289.

Brandon, A. R., Pitts, S., Denton, W. H., Stringer, C. A., & Evans, H. M. (2009). A history of the theory of prenatal attachment. *Journal of Prenatal and Perinatal Psychology and Health, 23*(4), 201-222.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101.

Braun, V., & Clarke, V. (2014). *Successful qualitative research: A practical guide for beginners.* Los Angeles, CA: Sage.

Bruchon-Schweitzer, M. (2002). *Psychologie de la santé. Modèles, concepts et méthodes*. Paris: Dunod.

Byatt, N., Hicks-Courant, K., Davidson, A., Levesque, R., Mick, E., Allison, J., & Moore, T. A. (2014). Depression and anxiety among high-risk obstetric inpatients. *General Hospital Psychiatry, 36*, 644-649.

Cannella, B. L. (2005). Maternal-fetal attachment: An integrative review. *Journal of Advanced Nursing, 50*(1), 60–68.

Centers for Disease Control and Prevention. (2014). First births to older women continue to rise. Retrieved from https://www.cdc.gov/nchs/data/databriefs/db152.htm

Centers for Disease Control and Prevention. (2015). Pregnancy complications. Retrieved from http://www.cdc.gov/reproductivehealth/MaternalInfantHealth/PregComplications.htm

Centers for Disease Control and Prevention. (2016a). Data on selected pregnancy complications in the United States. Retrieved from https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pregnancy-complications-data.htm

Centers for Disease Control and Prevention. (2016b). Pregnancy mortality surveillance system. Retrieved from https://www.cdc.gov/reproductivehealth/MaternalInfantHealth/PMSS.html

Chazotte, C., Freda, M. C., Elovitz, M., & Youchah, J. (1995). Maternal depressive symptoms and maternal-fetal attachment in gestational diabetes. *Journal of Women's Health, 4*, 375-380.

Clauson, M. I. (1996). Uncertainty and stress in women hospitalized with high-risk pregnancy. *Clinical Nursing Research, 5*(3), 309-325.

Condon, J. T. (1993). The assessment of antenatal emotional attachment: Developments of a questionnaire instrument. *British Journal of Medical Psychology, 66*, 167–183.

Condon, J. T. (1987). The battered fetus syndrome. Preliminary data on the incidence of the urge to physically abuse the unborn child. *Journal of Nervous and Mental Disease, 175*, 722–725.

Condon, J. T. (1993). The assessment of antenatal emotional attachment: Development of a questionnaire instrument. *British Journal of Medical Psychology, 66*, 167–183.

Condon, J. T., & Corkindale, C. (1997). The coorelates of antenatal attachment in pregnant women. *British Journal of Medical Psychology, 70*, 359-372.

Coopersmith, S. (1967). *The antecedents of self-esteem.* New York: Freeman

Côté-Arsenault, D. (2007). Threat appraisal, coping, and emotions across pregnancy subsequent to perinatal loss. *Nursing Research, 56*(2), 108-116.

Côté-Arsenault, D., & Denney-Koelsch, E. (2011). "My baby is a person": Parents' experiences with life-threatening fetal diagnosis. *Journal of Palliative Medicine, 14*(12), 1302-1308. Doi: 10.1089/jpm.2011.0165

Côté-Arsenault, D., & Denney-Koelsch, E. (2016). "Have no regrets:" Parents' experiences and developmental tasks in pregnancy with a lethal fetal diagnosis. *Social Science & Medicine, 154*, 100-109. Doi: 10.1016/j.socscimed.2016.02.033

Côté-Arsenault, D., Krowchuk, H, Hall, W. J., & Denney-Koelsch, E. (2015). We want what's best for our baby: Prenatal parenting of babies with lethal conditions. *Journal of Prenatal and Perinatal Psychology and Health, 29*(3), 157–176.

Cox, J. L., Holden, J. M., & Sagovsky, R. (1987). Detection of postnatal depression: Development of the 10-item Edinburgh Postnatal Depression Scale. *British Journal of Psychiatry, 150*, 782–786.

Cranley, M. S. (1981). Development of a tool for the measurement of maternal attachment during pregnancy. *Nursing Research, 30*, 281-284.

Creasy, R. K., Gummer, B. A., & Liggins, G. C. (1980). System for predicting spontaneous preterm birth. *Obstetrics & Gynecology, 55*(6), 692-695.

Creswell, J. W. (2007). *Qualitative inquiry & research design: Choosing among five approaches*. Thousand Oaks, CA: Sage Publications.

Crnic, K., Greenberg, M., Ragozin, A., Robinson, N., & Basham, R. (1983). Effects of stress and social support on mothers and premature and full term infants. *Child Development, 54*, 209-217.

Curry, M. A. (1987). Maternal behavior of hospitalized pregnant women. *Journal of Psychosomatic Obstetrics and Gynecology, 7*, 165-181.

Curry, M. A., Burton, D., & Fields, J. (1998). The prenatal psychosocial profile: A research and clinical tool. *Research in Nursing & Health, 21*, 211-219.

Dagklis, T., Papazisis, G., Tsakiridis, I., Chouuliara, F., Mamopoulos, A., & Rouusso, D. (2016). Prevalence of antenatal depression and associated factors among pregnant women hospitalized in a high-risk pregnancy unit in Greece. *Social Psychiatry and Psychiatric Epidemiology, 51*, 1025-1031. Doi: 10.1007/s00127-016-1230-7

Deave, T., Johnson, D., & Ingram, J. (2008). Transition to parenthood: The needs of parents in pregnancy and early parenthood. *BMC Pregnancy & Childbirth, 8*(30), 1–11. Doi: 10.1186/1471-2393-8-30.

Denis, A., Michaux, P., & Callahan, S. (2012). Factors implicated in moderating the risk for depression and anxiety in high risk pregnancy. *Journal of Reproductive and Infant Psychology, 30*(2), 124-134. Doi: 10.1080/02646838.2012.677020

Dupuy, H. J. (1984). *The Psychological General Well-Being Index*. In N. Wenger, M. Matteson, C. Furburg, & J. Elinson (Eds.), Assessment of quality of life in clinical trials. New York: LeJacq, 170-183.

Emmanuel, E. N., Creedy, D. K., St John, W., & Brown, C. (2011). Maternal role development: The impact of maternal distress and social support following childbirth. *Midwifery, 27*, 265-272. doi: 10.1016/j.midw.2009.07.003

First, M. B., Spitzer, R. L., Miriam, G., & Williams, J. B. W. (2002). *Structured clinical interview for DSM-IV-TR axis I disorders, research version, non-patient edition* (SCID-I/NP). Biometrics Research, New York State Psychiatric Institute, New York.

Fiskin, G., Kaydirak, M. M., Oskay, U. Y. (2017). Psychosocial adaptation and depressive manifestations in high-risk pregnant women: Implication for clinical practice. *Worldviews of Evidence-Based Nursing, 14*(1), 55-64.

Fowles, E. R. (1998). The relationship between maternal role attainment and postpartum depression. *Health Care for Women International, 19*, 83-94.

Gay, J. T., Edgil, A. E., & Douglas, A. B. (1988). Reva Rubin revisited. *Journal of Obstetric, Gynecologic, and Neonatal Nursing, 17*(6), 394-399.

Giurgescu, C., Penckofer, S., Maurer, M. C., & Bryant, F. B. (2006). Impact of uncertainty, social support, and prenatal coping on the psychological well-being of high-risk pregnant women. *Nursing Research, 55*(5), 356-365.

Goulet, C., Polomeno, V., & Harel, F. (1996). Canadian cross-cultural comparison of the high-risk pregnancy stress scale. *Stress Medicine, 12*, 145–154.

Gupton, A., Heaman, M., & Ashcroft, T. (1997). Bed rest from the perspective of the high-risk pregnant woman. *Journal of Obstetric, Gynecologic, and Neonatal Nursing, 26*(4), 423-430.

Hagaman, A. K., & Wutich, A. (2016). How many interviews are enough to identify metathemes in multisited and cross-cultural research? *Field Methods*, 1-19. Doi: 10.1177/1525822X16640447

Hamilton, M. (1960). A rating scale for depression. *Journal of Neurology, Neurosurgery, and Psychiatry, 23*, 56-62.

Hart, R., & McMahon, C. A. (2006). Mood state and psychological adjustment to pregnancy. *Archives of Women's Mental Health, 9*, 329-337. Doi: 10.1007/s00737-006-0141-0

Heaman, M. (1992). Stressful life events, social support, and mood disturbance in hospitalized and non-hospitalized women with pregnancy-induced hypertension. *The Canadian Journal of Nursing Research, 24*(1), 23-37.

Heaman, M. (1998). Psychological impact of high-risk pregnancy: Hospital and home care. *Clinical Obstetrics and Gynecology, 41*, 626-639.

Heaman, M., Beaton, J., Gupton, A., & Sloan, J. (1992). A comparison of childbirth expectations in high-risk and low-risk pregnant women. *Clinical Nursing Research, 1*(3), 252-265.

Heaman, M., & Gupton, A. (1998). Perceptions of bed rest by women with high-risk pregnancies: A comparison between home and hospital. *Birth, 25*(4), 252-258.

Hilton, B. A. (1994). The Uncertainty Stress Scale: Its development and psychometric properties. *Canadian Journal of Nursing Research, 26*(3), 15-31.

Hobel, C. J., Youkeles, L., & Forsythe, A. (1979). Prenatal and intrapartum high-risk screening, II. Risk factors reassessed. *American Journal of Obstetrics & Gynecology, 135*(8), 1051-1056.

Hollingshead, A. B. (1975). *A four-factor index of social status*. Unpublished working paper. Department of Sociology, Yale University, New Haven, CT.

Johns, L. (2006). Supporting and educating the family experiencing bed rest during pregnancy. *International Journal of Childbirth Education, 21*(1), 28-30.

Kemp, V. H., & Page, C. K. (1987). Maternal prenatal attachment in normal and high-risk pregnancies. *Journal of Obstetric, Gynecologic, and Neonatal Nursing, 16*(3), 179-183. Doi: 10.1111/j.1552-6909.1987.tb01455.x

Kent, R. A., Yazbek, M., Heyns, T., & Coetzee, I. (2015). The support needs of high-risk antenatal patients in prolonged hospitalization. *Midwifery, 31*, 164-169. Doi: 10.1016/j.midw.2014.08.003

Koniak-Griffin, D. (1988). The relationship between social support, self-esteem, and maternal-fetal attachment in adolescents. *Research in Nursing & Health, 11*, 269-278.

Koniak-Griffin, D., Lominska, S., & Brecht, M. L. (1993). Social support during adolescent pregnancy: a comparison of three ethnic groups. *Journal of Adolescence, 16*(1), 43-56.

Laxton-Kane, M., & Slade, P. (2002). The role of maternal prenatal attachment in a woman's experience of pregnancy and implications for the process of care. *Journal of Reproductive and Infant Psychology, 20*(4), 253-266. Doi: 10.1080/0264683021000033174

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer Publishing Company, Inc.

Lederman, R. P., Boyd, E., Pitts, K., Roberts-Gray, C., Hutchinson, M., & Blackwell, S. (2013). Maternal development experiences of women hospitalized to prevent preterm birth. *Sexual & Reproductive Healthcare,* 4, 133-138. Doi: 10.1016/j.srhc.2013.10.004

Leichtentritt, R. D., Blumenthal, N., Elyassi, A., & Rotmensch, S. (2005). High-risk pregnancy and hospitalization: The women's voices. *Health & Social Work, 30*(1), 39-47.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*. Beverly Hills, CA: Sage Publications, Inc.

Lobel, M., Yali, A.M., Zhu, W., DeVincent, C.J., & Meyer, B.A. (2002). Beneficial associations between optimistic disposition and emotional distress in high-risk pregnancy. *Psychology and Health, 17*(1), 77–95.

Lubin, B., & Zuckerman, M. (1999). *Manual for the multiple affect adjective checklist-Revised*. San Diego, CA: EdITS.

MacDonald, C. A., & Jonas-Simpson, C. M. (2009). Living with changing expectations for women with high-risk pregnancies: A Parse method study. *Nursing Science Quarterly, 22*(1), 74-82. doi: 10.1177/0894318408327298

Maloni, J. A. (2010). Antepartum bed rest for pregnancy complications: Efficacy and safety for preventing preterm birth. *Biological Research for Nursing, 12*(2), 106-124. Doi: 10.1177/1099800410375978

Maloni, J. A. (2011). Lack of evidence for prescription of antepartum bed rest. *Expert Review of Obstetrics and Gynecology, 6*(4), 385-393. Doi: 10.1586/EOG.11.28

Maloni, J. A., Kane, J. H., Suen, L. J., & Wang, K. K. (2002). Dysphoria among high-risk pregnant hospitalized women on bed rest: A longitudinal study. *Nursing Research, 51*(2), 92-99.

Maloni, J. A., & Kutil, R. M. (2000). Antepartum support group for women hospitalized on bed rest. *The American Journal of Maternal Child Nursing, 25*(4), 204-210.

Maloni, J. A., Park, S., Anthony, M. K., & Musil, C. M. (2005). Measurement of antepartum depressive symptoms during high-risk pregnancy. *Research in Nursing and Health, 28*(1), 16-26. Doi: 10.1002/nur20051

Maloni, J. A., & Schneider, B. S. (2002). Inactivity: Symptoms associated with gastrocnemius muscle disuse during pregnancy. *AACN Clinical Issues, 13*(2), 248-262.

March of Dimes. (2016). *2016 premature birth report card*. Retrieved from http://www.marchofdimes.org/materials/premature-birth-report-card-united-states.pdf

Markovic, M., & Manderson, L., Schaper, H., & Brennecke, S. (2006). Maternal identity change as a consequence of antenatal hospitalization. *Health Care for Women International, 27*, 762-776. Doi: 10.1080/07399330600880319

McCall, C. A., Grimes, D. A., & Lyerly, A. D. (2013). "Therapeutic" bed rest in pregnancy: Unethical and unsupported data. *Obstetrics & Gynecology, 121*(6), 1305-1308. Doi: 10.1097/AOG.0b013e318293f12f

McFarland, J., Salisbury, A. L., Battle, C. L., Hawes, K., Halloran, K., & Lester, B. M. (2011). Major depressive disorder during pregnancy and emotional attachment to the fetus. *Archives of Women's Mental Health, 14*, 425-434. Doi: 10.1007/s00737-011-0237-z.

McNair, D. M., Lorr, M., & Droppleman, L. F. (1971). *Eits maunual for the Profile of Mood States*. San Diego: Educational and Industrial Testing Service.

Mercer, R. T. (1986). Predictors of maternal role attainment at one year postbirth. *Western Journal of Nursing Research, 8*(1), 9-32.

Mercer, R. T. (2006). Nursing support of the process of becoming a mother. *Journal of Obstetric, Gynecologic, & Neonatal Nursing, 35*, 649-651. doi: 10.1111/J.1552-6909.2006.00086.x

Mercer, R. T., & Ferketich, S. L. (1988). Stress and social support as predictors of anxiety and depression during pregnancy. *Advances in Nursing Science, 10*, 26-39.

Mercer, R. T., & Ferketich, S. L. (1994). Predictors of maternal role competence by risk status. *Nursing Research, 43*(1), 38-43.

Mercer, R. T., & Ferketich, S. L. (1995). Experienced and inexperienced mothers' maternal competence during infancy. *Research in Nursing, 18*, 333-343.

Mercer, R. T., Ferketich, S. L., DeJoseph, J., May, K. A., Sollid, D. (1988). Effect of stress on family functioning during pregnancy. *Nursing Research, 37*(5), 268-275.

Mercer, R. T., & Walker, L. O. (2006). A review of nursing intervention to foster becoming a mother. *Journal of Obstetric, Gynecologic, and Neonatal Nursing, 35*(5), 568-582. Doi: 10.1111/j.1552-6909.2006.00080.x

Merleau-Ponty, M. (1945/2012). *The phenomenology of perception*. (D. A. Landes, Trans). New York, NY: Routledge. Original work published, 1945.

Meyer, S. E. (2010). *Maternal role & high-risk pregnancy experience with antepartum hospitalization*. Retrieved from ProQuest Dissertations & Theses Global. (AAT 3445861)

Millon, T. (1987). *Manual for the MCMI-2*. Minneapolis, MN: National Computer Systems.

Milner, J. S., & Wimberly, R. C. (1980). Prediction and explanation of child abuse. *Journal of Clinical Psychology, 36*, 875-884.

Mishel, M. H. (1988). Uncertainty in illness. *Image: The Journal of Nursing Scholarship, 20*(4), 225-232.

Mishel, M. H. (1997). *Uncertainty in Illness Scales manual*. Chapel Hill, NC: University of North Carolina.

Mu, P. F. (2004). Maternal role transition experiences of women hospitalized with PROM: A phenomenological study. *International Journal of Nursing Studies, 41*, 825-832. Doi: 10.1016/j.ijnurstu.2004.03.008

Mulder, E. J. H., Robles de Medina, P. G., Huizink, A. C., Van den Bergh, B. R. H., Buitelaar, J. K., & Visser, G. H. A. (2002). Prenatal maternal stress: Effects on pregnancy and the (unborn) child. *Early Human Development, 70*, 3-14.

National Institutes of Health. (2013). *What are the factors that put a pregnancy at risk?* Retrieved from https://www.nichd.nih.gov/health/topics/high-risk/conditioninfo/pages/factors.aspx

Norbeck, J. S. (1984). Modification of life events questionnaires for use with female respondents. *Research in Nursing and Health, 7*, 61-71.

Norbeck, J.S., Lindsey, A.M., & Carrieri, V.L. (1981). The development of an instrument to measure social support. *Nursing Research, 30*, 264-269.

Novant Health. (2013). *Novant health Forsyth medical center: Community benefit implementation plan.* Retrieved from https://www.novanthealth.org/Portals/92/novant_health/documents/about_us/community/NHFMC_Implementation_Plan_2013.pdf

O'Leary, J. (2009). Never a simple journey: Pregnancy following perinatal loss. *Bereavement Care, 28*(2), 12-17. Doi: 10.1080/02682620902996004

Özkan, H., & Polat, S. (2011). Maternal identity development education on maternity role attainment and my baby perception of primiparas. *Asian Nursing Research, 5*(2), 108-117.

Pearlin, L. (1989). The sociological study of stress. *Journal of Health and Social Behavior, 30,* 241-256.

Pisoni, C., Garofoli, F., Tzialla, C., Orcesi, S., Spinillo, A., Politi, P., … & Stronati, M. (2016). Complexity of parental prenatal attachment during pregnancy at risk for preterm delivery. *The Journal of Maternal-Fetal & Neonatal Medicine, 29*(5), 771-776. Doi: 10.3109/14767058.2015.1017813.

Pollock, P. H., & Percy, A. (1999). Maternal antenatal attachment style and potential fetal abuse. *Child Abuse & Neglect, 23*(12), 1345-1357.

Price, S., Lake, M., Breen, G., Carson, G., Quinn, C., & O'Connor, T. (2007). The spiritual experience of high-risk pregnancy. *Journal of Obstetric, Gynecologic, & Neonatal Nursing, 36*(1), 63-70. Doi: 10.1111/J.1552-6909.2006.00110.x

Radloff, L. (1997). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385-401.

Ragozin, A., Basham, R., Crnic, K., Greenberg, M., & Robinson, N. (1982). Effects on maternal age on parenting role. *Developmental Psychology, 18*, 627-634.

Rice, V. H. (2000). *Handbook of stress, coping, and health.* Thousand Oaks, CA: Sage.

Richards, L., & Morse, J.M. (2013). *Read me first for a user's guide to qualitative methods* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

Rubarth, L. B., Schoening, A. M., Cosimano, A., & Sandhurst, H. (2012). Women's experience of hospitalized bed rest during high-risk pregnancy. *Journal of Obstetric, Gynecologic, & Neonatal Nursing, 41*(3), 398-407. Doi: 10.1111/j.1552-6909.2012.01349.x

Rubin, R. (1967). Attainment of the maternal role: Processes. *Nursing Research, 16*(3), 237-245.

Rubin, R. (1975). Maternal tasks in pregnancy. *Maternal Child Nursing Journal, 4*(3), 143-153.

Rubin, R. (1976). Maternal tasks in pregnancy. *Journal of Advanced Nursing, 1*(5), 367-376.

Rubin, R. (1977). Binding-in in the postpartum period. *Maternal-Child Nursing Journal, 6*, 67-75.

Rubin, R. (1984). *Maternal identity and the maternal experience*. New York: Springer Publishing Company, Inc.

Ruble, D. N., Fleming, A. S., Stangor, C., Brooks-Gunn, J., Fitzmaurice, G., & Deutsch, F. (1990). Transition to motherhood and the self: Measurement, stability, and change. *Journal of Personal Social Psychology, 58*(3), 450–463.

Sandelowski, M. (1995). Sample size in qualitative research. *Research in Nursing & Health, 18,* 179–83.

Sarason, I.G., Sarason, B.R., Shearin, E.N., & Pierce, G.R. (1987). A brief measure of social support: Practical and theoretical implications. *Journal of Social and Personal Relationships, 4*(4), 497–510.

Schroeder, C. A. (1996). Women's experience of bed rest in high-risk pregnancy. *Journal of Nursing Scholarship, 28(*3), 253-258.

Sherbourne, C. D., & Stewart, A. L. (1991). The MOS Social Support Survey. *Science and Medicine, 32,* 705-714.

Sittner, B. J., DeFrain, J., & Hudson, D. B. (2005). Effect of high-risk pregnancies on families. *MCN: The American Journal of Maternal/Child Nursing, 30,* 121-126.

Sobell L. C., Brown J., Leo G. I., Sobell, M. B. (1996). The reliability of the Alcohol Timeline Followback when administered by telephone and by computer. *Drug and Alcohol Depend*ence, *42*(1): 49–54.

Spielberger, C. D., Gorsuch, R. L., Lushene, R. E. (1970). *Manual for the State-Trait Anxiety Inventory (Self-evaluation Questionnaire)*. Consulting Psychologists Press, Palo Alto, CA.

Spielberger, C.D., Gorsuch, I., & Lushene, R.E. (1983). *Manual for the State–Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychologist Press.

Spitzer, R. L. (2006). A brief measure for assessing generalized anxiety disorder: the GAD-7. *Archives of Internal Medicine, 166*(10), 1092–1097.

Stainton, M. C., Lohan, M., & Woodhart, L. (2005). Women's experiences of being in high-risk antenatal care day stay and hospital admission. *Australian Midwifery Journal, 18*(1), 16-20.

Stainton, M. C., McNeil, D., & Harvey, S. (1992). Maternal tasks of uncertain motherhood. *Maternal-Child Nursing Journal, 20*(3), 113-123.

Streubert, H.J., & Carpenter, D.R. (2011). *Qualitative research in nursing: Advancing the humanistic imperative* (5th ed.). Philadelphia, PA: Wolters Kluwer/Lippincott Williams & Wilkin.

Stroebe, M. S., & Schut, H. (2001). Meaning making in the dual process model of coping with bereavement. In R. A. Neimeyer (Ed.), *Meaning reconstruction and the experience of loss* (pp. 55-73). Washington, D.C.: American Psychological Association.

Texeira, J. M. A., Fisk, N. M., & Glover, V. (1999). Association between maternal anxiety in pregnancy and increased uterine artery resistance index: Cohort based study. *BMJ, 18*(7177), 153-157.

The American College of Obstetricians and Gynecologists. (2012). *Guidelines for perinatal care* (7th ed.). Retrieved from http://www.acog.org/Resources-And-Publications/Guidelines-for-Perinatal-Care

The American College of Obstetricians and Gynecologists. (2017). Obstetric care consensus: Periviable birth. *Obstetrics & Gynecology, 130*(4), e187-e199.

Thoma, M. E., Boulet, S., Martin, J. A., & Kissin, D. (2014). Births resulting from assistive reproductive technology: Comparing birth certificate and national art surveillance data, 2011. *National Vital Statistics Report, 63*(8).

Walker, L. O., Crain, H., & Thompson, E. (1986). Maternal role attainment and identity in the postpartum period: Stability and change. *Nursing Research, 35*(2), 68-71.

Ware J.E., Turner-Bowker, D.M., & Gande B. (2002). *How to score version 2 of the SF-12® Health Survey* (with a supplement documenting version 1). ed. 2005, Lincoln, RI: QualityMetric Incorporated; 2002.

Warner, R., Appleby, L., Whitton, A., & Faragher, B. (1997). Attitudes toward motherhood in postnatal depression: Development of the maternal attitudes questionnaire. *Journal of Psychosomatic Research, 43*(4), 351–358.

Wayland, J., & Tate, S. (1993). Maternal-fetal attachment and perceived relationships with important others in adolescents. *Birth, 20*(4), 198-203.

White, O., McCorry, N. K., Scott-Heyes, G., Dempster, M., & Manderson, J. (2008). Maternal appraisals of risk, coping, and prenatal attachment among women hospitalized with pregnancy complications. *Journal of Reproductive and Infant Psychology, 26*(2), 74-85. Doi: 10.1080/0246830801918455

Yali, A.M., & Lobel, M. (1999). Coping and distress in pregnancy: An investigation of medically high-risk women. *Journal of Psychosomatic Obstetric and Gynecology, 20*, 39–52.

Yali, A. M., & Lobel, M. (2002). Stress-resistance resources and coping in pregnancy. *Anxiety, Stress, and Coping, 15*, 289-309.

Zadeh, M. A., Khajehei, M., Sharif, F., & Hadzic, M. (2012). High-risk pregnancy: Effects on postpartum depression and anxiety. *British Journal of Midwifery, 20*(2), 104-113.

Zigmond, A.S., & Snaith, R.P. (1983). The Hospital Anxiety and Depression Scale. *Acta Psychiatrica Scandinavia, 67*, 361–370.

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment, 52*, 30-41.

APPENDIX A

IRB APPROVAL LETTERS

THE UNIVERSITY of NORTH CAROLINA
GREENSBORO

OFFICE OF RESEARCH INTEGRITY
2718 Beverly Cooper Moore and Irene Mitchell Moore
Humanities and Research Administration Bldg.
PO Box 26170
Greensboro, NC 27402-6170
336.256.0253
Web site: www.uncg.edu/orc
Federalwide Assurance (FWA) #216

To: Tabitha Toney
School of Nursing
School of Nursing

From: UNCG IRB

Authorized signature on behalf of IRB

Approval Date: 12/02/2017
Expiration Date of Approval: 12/01/2018

RE: Notice of IRB Approval by Expedited Review (under 45 CFR 46.110)
Submission Type: Initial
Expedited Category: 6.Voice/image research recordings,7.Surveys/interviews/focus groups
Study #: 17-0520
Study Title: The Experience of Antenatal Hospitalization among High-Risk Pregnant Women

This submission has been approved by the IRB for the period indicated. It has been determined that the risk involved in this research is no more than minimal.

Study Description:

This study will explore the lived of high-risk hospitalized pregnant women. Specific aims for the study will be to: 1) discover the hospitalized pregnant woman's feelings about her unborn baby and 2) describe how the hospitalized high-risk pregnant woman cognitively constructs her transition to becoming a mother.

Study Regulatory and other findings:

- If your study is contingent upon approval from another site (NH Forsyth Medical Center), you will need to submit a modification at the time you receive that approval.

Investigator's Responsibilities

Signed letters, along with stamped copies of consent forms and other recruitment materials will be scanned to you in a separate email. **Stamped consent forms must be used unless the IRB has given you approval to waive this requirement.** Please notify the ORI office immediately if you have an issue with the stamped consents forms.

Please be aware that valid human subjects training and signed statements of confidentiality for all members of research team need to be kept on file with the lead investigator. Please note that you will also need to remain in compliance with the university "Access To and Retention of Research Data" Policy which can be found (http://policy.uncg.edu/university-policies/research_data/.

CC:
Lynne Lewallen, Family and Community Nursing

page 1 of 1

NOVANT HEALTH

Forsyth Medical Center

3333 Silas Creek Parkway
Winston-Salem, NC 27103

DATE:	December 14, 2017
TO:	Tabitha Toney
FROM:	Kevin Johnson, PhD,Manager, Forsyth Mem Hosp, Inc. IRB
PROTOCOL TITLE:	The Experience of Antenatal Hospitalization among High-Risk Pregnant Women
PROTOCOL NUMBER:	17-900
APPROVAL PERIOD:	Approval Date: December 14, 2017 Expiration Date: December 13, 2018

The Forsyth Mem Hosp, Inc. IRB, operated by Novant Health, has reviewed the protocol entitled: The Experience of Antenatal Hospitalization among High-Risk Pregnant Women. The review of your submission included the items listed below.

Attachments

eProtocol Submission
Recruitment Script - Novant Team Member Liaison
Recruitment Script - Principal Investigator
Consent to Act as a Human Participant - Approved by UNCG IRB, 12/2/17 – 12/1/18
Participant Questionnaire - Information about You
Interview Guide - 'Possible Probe Questions.docx'

The project has been approved for the procedures and subjects described in the protocol. This protocol must be reviewed for renewal on a yearly basis for as long as the research remains active. Should the protocol not be renewed before expiration, all activities must cease.

This finding will be documented in the minutes of the January 04, 2018 IRB meeting. A copy of the protocol is maintained by the IRB office. All minutes and proceedings pertinent to this protocol are maintained by the IRB office. The Novant Health IRBs are registered with the Office for Human Research Protections (OHRP) and are in compliance with the requirements of federal regulations 45 CFR 46, 21 CFR 50, 21 CFR 56 and internal policies as revised to date. If you have any questions or need additional information, please contact the IRB office at (336)718-9670 or irb@novanthealth.org.

Sincerely,

Volker W. Stieber, MD
Forsyth Mem Hosp, Inc. IRB Chair

Notes:
Expedited Review - Category 6, 7

APPENDIX B

RECRUITMENT SCRIPT FOR LIAISON AND PI

Recruitment Script for Liaison

Good morning (or afternoon). My name is (Liaison's name) and I am the charge nurse of this unit. How are you today? A PhD student in nursing from the University of North Carolina at Greensboro is completing a study on high-risk pregnant women and would like to speak with you regarding your experience, if you are willing. She is a registered nurse with experience in pregnancy and is interested in learning more about your experience during this pregnancy. The study would involve the PhD student coming to your room to interview you about your pregnancy experience. You are under no obligation to be part of this study; it is completely voluntary. Choosing not to participate or withdrawing from the study will in no way effect the care you receive. Would you be willing for her to come and tell you more about the study? Once you hear all about the study, then you can decide if you want to participate or not.

Approved IRB
12/2/17

Recruitment Script for PI

Good morning (or afternoon). My name is Tabitha Toney and I am the PhD student from the University of North Carolina at Greensboro that (Liaison's name) mentioned would be contacting you about participating in the research study. How are you today? I wanted to introduce myself and tell you more about the study. Would that be okay? I am a registered nurse with experience in caring for pregnant women and I am interested in learning more about your experience during this pregnancy. The study would involve me coming to your room to interview you about your pregnancy experience. The interview will take approximately one hour and will be audio-recorded. The audio-recorded interview will be stored in a secure, password-protected program. You are under no obligation to be part of this study and it is completely voluntary. Choosing not to participate or withdrawing from the study will in no way effect the care you receive. Would you be willing to participate in the study?

Approved IRB
12/2/17

APPENDIX C

CONSENT

UNIVERSITY OF NORTH CAROLINA AT GREENSBORO

CONSENT TO ACT AS A HUMAN PARTICIPANT

Project Title: The Experience of Antenatal Hospitalization among High-Risk Pregnant Women

Principal Investigator and Faculty Advisor: Tabitha Toney and Faculty Advisor: Lynne Lewallen

Participant's Name:

What are some general things you should know about research studies?
You are being asked to take part in a research study. Your participation in the study is voluntary. You may choose not to join, or you may withdraw your consent to be in the study, for any reason, without penalty.

Research studies are designed to obtain new knowledge. This new information may help people in the future. There may not be any direct benefit to you for being in the research study. There also may be risks to being in research studies. If you choose not to be in the study or leave the study before it is done, it will not affect your care at Forsyth Medical Center, or your relationship with the researcher or the University of North Carolina at Greensboro. Details about this study are discussed in this consent form. It is important that you understand this information so that you can make an informed choice about being in this research study.

You will be given a copy of this consent form. If you have any questions about this study at any time, you should ask the researchers named in this consent form. Their contact information is below.

What is the study about?
This is a research project. Your participation is voluntary. The purpose of this project is to interview women who are hospitalized for a high-risk pregnancy condition to gain a better understanding of the experience.

Why are you asking me?
The reason for selecting you for this project is you are currently in the hospital due to pregnancy complications. The investigator seeks to gain knowledge about the experience of the hospital stay and find out what this experience is like. You are being asked to participate because you currently are having this experience.

What will you ask me to do if I agree to be in the study?
Each participant will be interviewed by the investigator. The interview will be audio-recorded to allow for transcription of the interview and will last approximately one hour. The investigator may ask if you are interested in participating in a second interview to clarify information discussed in the first interview or to reach a deeper understanding of your pregnancy experience. If you are willing, the investigator will request contact information, such as a phone number or email.

Is there any audio/video recording?
The interview will be audio-recorded only for the purpose of transcription. Because your voice will be potentially identifiable by anyone who hears the tape, your confidentiality for things you say on the tape cannot be guaranteed although the researcher will try to limit access to the tape as described below. The

audio-recorded interview will not include your name or any other identifiable information. The audio recording will be kept electronically in a secure location.

What are the risks to me?
There is minimal risk involved in this study. Sometimes, emotional distress can happen by thinking about your pregnancy and your baby. The researcher is an experienced RN with more than a decade of experience working with acutely ill patients and with pregnant women. You will be allowed to take breaks from the questions if you wish. If you wish to discontinue the interview for any reason, or the researcher sees that you are in distress, the interview will be halted. Since the interviews will take place in your hospital room, health care staff will be immediately available, if necessary. The PI will sit quietly with you until hospital staff or a family member is available, if needed. The Institutional Review Board at the University of North Carolina at Greensboro has determined that participation in this study poses minimal risk to participants.

If you have questions, want more information or have suggestions, please contact Tabitha Toney at (828) 234-6694 or tdtoney@uncg.edu. You may also contact Lynne Lewallen (faculty advisor) at (336) 334-5170 or lynne_lewallen@uncg.edu.

If you have any concerns about your rights, how you are being treated, concerns or complaints about this project or benefits or risks associated with being in this study please contact the Office of Research Integrity at UNCG toll-free at (855)-251-2351.

Are there any benefits to society as a result of me taking part in this research?
The results from this study will assist the investigator in gaining knowledge regarding the high-risk hospitalized experience. Information gathered during the interview may help to better understand the high-risk pregnancy experience and may result in more research studies being completed about women who have been in the hospital during their pregnancy.

Are there any benefits to *me* for taking part in this research study?
There are no direct benefits to participants in this study.

Will I get paid for being in the study? Will it cost me anything?
There are no costs to you or payments made for participating in this study.

How will you keep my information confidential?
All information will be kept confidential. Personal information will be kept in a password protected and firewalled program, called UNCG box. The audio-recorded interview will be kept in a separate password protected file in UNCG box and kept until data analysis for the study is complete. The interview will be transcribed by a professionally-trained transcriptionist and be kept in a password protected file in UNCG box. Once the interview is transcribed and verified, the interview will be deleted from the audio-recording device. Once data analysis is complete, the audio file will be deleted from the box. All information obtained in this study is strictly confidential unless disclosure is required by law.

What if I want to leave the study?
You have the right to refuse to participate or to withdraw at any time, without penalty. If you do withdraw, it will not affect you in any way. If you choose to withdraw, you may request that any of your data which has been collected be destroyed unless it is in a de-identifiable state. The investigators also have the right to stop your participation at any time. This could be because you have had an unexpected reaction, or have failed to follow instructions, or because the entire study has been stopped. Choosing not to participate or withdrawing from the study will in no way effect the care you receive

What about new information/changes in the study?
If significant new information relating to the study becomes available which may relate to your willingness to continue to participate, this information will be provided to you.

Voluntary Consent by Participant:
By signing this consent form, you are agreeing that you read, or it has been read to you, and you fully understand the contents of this document and are openly willing consent to take part in this study. All of your questions concerning this study have been answered. By signing this form, you are agreeing that you are 18 years of age or older and are agreeing to participate, in this study described to you by Tabitha Toney.

Signature: _____ Date: _____

APPENDIX D

DEMOGRAPHIC INFORMATION

1. **Age: What is your age in years?**

2. **Race: (Please circle all that apply)**

   White Hispanic or Latino Black or African American

   Native American or American Indian Asian / Pacific Islander

   Other (please specify): _____

3. **Marital Status: What is your marital status? (Please circle one)**

   Single, never married Married or domestic partnership Widowed

   Divorced Separated Co-habitating (in a committed relationship)

4. **Education: What is the highest degree or level of school you have completed?** ***If currently enrolled, highest degree already received*****. (Please circle one)**

   8th grade or less Some high school, no diploma High school graduate or GED

   Some college credit, no degree Associate degree Bachelor's degree

   Master's degree Doctorate degree

5. **Work Status: Prior to the hospitalization were you...? (Please circle one)**

   Employed full-time Employed part-time Unemployed

   Homemaker A student Military

Pregnancy related questions:

6. **Number of pregnancies, including the current pregnancy: (Please circle one)**

   One Two Three Four Five or more

7. **Living children: How many children do you currently have living at home, including step-children? (Please circle one)**

   None One Two Three Four Five or more

8. **What happened with each pregnancy?**

   Example:
   Pregnancy 1: Pregnant for X weeks, Baby born alive, Child still alive

   Pregnancy 2: Pregnant for X weeks, Baby born alive, Child still alive, Had preeclampsia at 24 weeks

9. **Current pregnancy: How many weeks pregnant are you now? When is your due date?**

10. **Current pregnancy: During the current pregnancy, have you experienced any complications or problems?**

    Yes or No

11. If you answered yes to question 9, please write what complication or problem you had during your pregnancy:

12. Is this your first hospital stay during pregnancy?

Yes or No

13. If the answer is no, how many hospital stays have you had this pregnancy?

14. How many days have you been hospitalized with this current hospital stay?

APPENDIX E

INTERVIEW GUIDE

The PI will use an unstructured interview approach and will begin with an open-ended question: "Tell me about your experience in this pregnancy and what has led to this hospitalization?" The open-ended question will allow for open conversation between the PI and participant. Other possible probe questions are included below.

Possible Probe Questions

- What did you think your pregnancy would be like?
- What is the most difficult thing about being in the hospital?
- Since being hospitalized, has the way you thought of your pregnancy changed? If so, how has it changed?
- How has the way you thought about your baby changed since being hospitalized? Have you ever thought about the possibility of having and caring for a premature baby?
- How would you describe your relationship with your unborn baby during the pregnancy? Since being admitted to the hospital?
- Have you made any preparations for bringing home this baby? (Setting up a nursery, buying things, baby showers, etc.)
- Overall, how do you feel about becoming a mother to this baby? What is the most important? Is there any one thing or event that makes you feel like a mother?

UDPATED INTERVIEW GUIDE

The PI will use an unstructured interview approach and will begin with an open-ended question: "What is like for you being here in this hospital?" The open-ended question will allow for open conversation between the PI and participant. Other possible questions are included below.

- How has the experience of being here changed your view of this pregnancy?
- Tell me about your baby?
- How has the way you thought about your baby changed since being hospitalized? How would you describe your relationship?
- Have you ever thought about the possibility of having and caring for a premature baby?
- How does it feel to be the mother to this baby? What is the most important?
- How is being mother to this baby in this situation different than before?
- Is there anything you use the internet for while here in the hospital?

Just for me as a reminder: I have interviewed some other women and they mentioned this……(hospital is safe, became a parent quicker than ready for, hard not knowing the outcome, etc.). Does that ring true for you?