

THE EVOLUTION OF CONSCIOUSNESS DURING PREGNANCY: A GROUNDED
THEORY STUDY

by

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A Dissertation
Submitted in Partial Fulfillment
of the Requirements for the Degree
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Parenting

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This dissertation is dedicated to all that is good in humanity, and the potential within humanity to mature, evolve and emerge as a resilient, compassionate, cooperative and even peaceful species.

May we realize the value of supporting women in the process of becoming mothers, because we understand that every human being comes through a mother.

May pregnant women feel safe and supported throughout pregnancy, and may their self-awareness increase and their path of motherhood be one of empowerment.

May families have the education and therapeutic support to help them navigate their road as a family with kindness, intelligence and togetherness.

May children feel safe, seen, soothed, welcomed and loved in their journey from conception through childhood.

May human beings have the awareness to see that how we perceive and care for our pregnant mothers, babies and children influences the trajectory of humanity to be one of evolution or devolution.

This dissertation is dedicated to our maternal ancestors, the modern-day women who are doing the bold, raw, self-transformative work to create a mindful paradigm for becoming mothers, and the courageous, resilient mothers who will help shape the upcoming generations of humanity.

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Cecily Miller

March 2019

Chair: (Dr. Irv Katz)

Major Department: (Transformational Education)

In the United States, nearly 4 million women have full-term pregnancies a year.

Maternity care has been recognized as a unique arena of health care wherein the implications have the potential to impact the evolution or devolution of an entire population. Pregnancy and becoming a mother have been categorized as a developmental milestone.

The current culture of maternity care does not address or support the whole woman during the transformative prenatal maternal phase of human development. The standard model of prenatal care overlooks pregnant women's consciousness. Mounting research demonstrates that pregnancy is a time of dramatic neuroplasticity that impacts a woman's sense of self and brain and can be directed positively to promote an increase in mindful awareness. Yet what has been lacking from scientific discourse is the potential for a woman's experience of pregnancy to evolve her consciousness.

An abbreviated version of a social constructivist grounded theory study was conducted in order to determine if, and how a woman's consciousness evolves during pregnancy. Eight experts (five females and three males) within the field of bio-psycho-social prenatal and maternal health participated in a 2-hour remote focus group to discuss prenatal maternal consciousness for healthy, low risk, first-time pregnant women in the United States grounded in their professional knowledge, views, and experience.

The grounded theory that emerged from this study is the Maternal Consciousness Sequence (MCS) theory. This theory fosters an understanding of how pregnancy can be a life-changing and consciousness-promoting event for healthy women becoming mothers. The MCS shows an upward spiraling pathway for pregnant women. The results produced five core categories identified as the five phases of the MCS that are cycled through repeatedly during pregnancy: Emerging Maternal Consciousness, Feeling Unsafe, Feeling Resourced, Feeling Safe, and Feeling Empowered. The results of this study suggest that there is potential for women's consciousness to evolve during pregnancy through the process of the five-phase MCS, for example.

The findings from this study are pertinent to women, children, couples, and families, educators, and prenatal and maternal healthcare providers. Future scientific investigation into women's consciousness during pregnancy is recommended.

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CHAPTER 1

INTRODUCTION

“Somewhere among recognition of conception, delivery of an infant, and the early months of the child’s life, a parent is born” (Partridge, 1988, p. 281).

According to recent birth statistics, more than 3.9 million babies are born in the United States every year (Martin, Hamilton, Osterman, Driscoll, & Mathews, 2017). The prevalent medical model of obstetric care operates on the premise that there is an inherent vulnerability within pregnancy (Wagner, 2006). Yet mothers are rarely afforded the support needed during this transformational life experience and are instead filtered through an authoritative, crisis prevention, intervention-driven, medical model of care. Many argue this is a result of pregnancy and childbirth being managed “as potential pathology, in which something could go wrong at any time” (Davis-Floyd & Sargent, 1997, p. 134). This limited focus on the woman’s physical health overrides care to her psycho-emotional needs during pregnancy. Childbearing has been described by some as “a life passage with major consequences for mothers, newborns, and families” (Sakala & Corry, 2008, p. 7). Maternity care has been recognized as a unique arena of health care in which implications have the potential to impact the evolution or devolution of an entire population (Davis-Floyd & Georges, 1996). Scholarly discussion suggests that there is an innate opportunity for pregnancy to catalyze self-transformation in women.

The current culture of maternity care does not address or support the whole woman during childbearing (Wagner, 2006).

The experience of pregnancy encompasses physiological, psychological, spiritual, and socio-cultural dimensions. Because the future of any given culture depends

heavily on women's procreative abilities, these abilities carry strong social significance. Thus, every culture takes upon itself the regulation and management of women's pregnancies. (Davis-Floyd & Georges, 1996, p. 1)

A robust body of recent research helps scientists, practitioners, and scholars better understand the process a woman's body undergoes as a result of gestation. In addition, there is relatively new literature regarding the dramatic adaptations of the pregnant brain as well as extensive study on a pregnant woman's psychological and emotional process in becoming a mother. Yet, there has been a lack of discussion on one key component of maternal development, that being the possible evolution of a woman's consciousness during pregnancy. Evidence suggests an increase in mindfulness and non-reactivity as a result of prenatal-based psycho-emotional, body-mind techniques (Duncan & Bardacke, 2010). However, the recognition of the role of consciousness as a relevant aspect of maternal development has been minimally addressed in the literature with little to no application within the currently dominant maternity care model, thus requiring further investigation. This dissertation aims to address this gap in the literature and within our culture of care by investigating the potential for the evolution of a woman's consciousness during pregnancy.

The present study is based on the premise that pregnancy is a critical period of development for women. The goal of this dissertation is to highlight the potential evolutionary possibilities available to women during pregnancy that have not previously been addressed in research. An abbreviated grounded theory method is used to answer the question, "How can the experience of pregnancy evolve a woman's consciousness?" The literature review utilizes a synthesized coherence approach, a method of "reinterpreting

previous work to show underlying consensus about the configured investigative ground” (Locke & Golden-Biddle, 1997, p. 1023) and thereby linking aspects of independent fields of research and theories including: psychology, social neuroscience of mindfulness training, neuroscience of pregnancy, neuroendocrinology, consciousness, interpersonal neurobiology (IN) and prenatal and perinatal psychology (PPN), maternal-fetal attachment (MFA), becoming a mother (BAM), and life transition theories. The goal of creating synthesized coherence within this study’s investigation is to create an understanding about the potential for women’s consciousness to evolve during pregnancy. A result of synthesized coherence across fields of literature can be consilience, and for a grounded theory study it is also a theory. Consilience is when research across disciplines is linked together and synthesized, particularly when forming a comprehensive theory (Siegel, 2017; Wilson, 1999).

Background of the Study

The following overview begins with a summary of the historical context of prenatal and perinatal care in the United States and the significant limitations imposed on childbearing women as a result. Throughout US history there has been a dramatic undermining of women’s knowledge, place, and power within the prenatal and perinatal experience. This oppressive climate has dictated the way in which pregnancy and pregnant women have been viewed, the quality and kind of care that childbearing women receive (Davis-Floyd & Sargent, 1997; Fischbein, 2015), as well as the development of modern women’s maternal sense of self (Ginsburg & Rapp, 1995).

Until the end of the 18th century, authoritative knowledge over pregnancy and childbirth—the cultural acceptance of one system of knowledge as authority over all

others even though there may be equally legitimate knowledge systems in place (Jordan, 1997)—was invested in the midwife’s domain, and the stages of childbearing were viewed as a natural, normal part of health and life. Allopathic professionals such as male obstetricians instigated “transformation that quickly delegitimized all other kinds of healing knowledge, putting the newly defined medical profession in a position of cultural authority, economic power, and political influence” (Davis-Floyd & Sargent, 1997, p. 57). A pivotal event in catalyzing this change of knowledge and power occurred in 1915 when the Association for the Study and Prevention of Infant Mortality published Dr. Joseph DeLee’s paper that argued that childbirth is a pathological process from which few escape “damage.” He substantiated the need for specially trained obstetricians and denounced the value of midwives by calling for active control and management over labor and delivery through routine use of medical interventions “to save women from the ‘evils’ that are ‘natural to labor’” (Feldhusen, 2000). The pathologically oriented care offered by obstetricians discarded the trust and competence midwifery care instilled in a woman’s capacity to birth naturally.

After the overturn of women-based care within the home in the early 1900s (MacDorman, Mathews, & Declercq; 2012), the dominant model of health care became patriarchal and authoritative, pathology-oriented, and fear-based (Davis-Floyd & Sargent, 1997). Women were seen as functionary objects within the process of producing a child (Davis-Floyd & Sargent, 1997). The current model of maternity care has “displaced authoritative knowledge away from a woman and dislodged her confidence in her ‘embodied knowledge’” (Davis-Floyd & Sargent, 1997, p. 113). This in turn created a system that has provided healthy pregnant women with crisis prevention-based prenatal

support and a crisis intervention approach during labor and delivery (Fischbein, 2015), while distinctly dehumanizing the process of childbearing as a medical intervention. This separation of women from the process of pregnancy and childbirth has translated into little to no psycho-emotional attention regarding the process of becoming a mother.

Our current medical model pathologizes pregnancy and renders women “invisible and inaudible” (Davis-Floyd & Sargent, 1997, p. 315). According to Rotham, “the history of Western obstetrics is the history of technologies of separation. We’ve separated milk from breasts, mothers from babies, fetuses from pregnancies, sexuality from procreation, pregnancies from motherhood” (Davis-Floyd & Sargent, 1997, p. 315). As a result, we have a medical system of intervention care where authoritative knowledge is invested in the provider’s domain that, consequently, inhibits and undermines women and their connection to their body’s wisdom and potential evolution of consciousness.

Obstetricians began managing pregnancy in the early 1900s. This resulted in a dramatic shift of care from home to the hospital (Feldhusen, 2000; Fischbein, 2015) and the mechanization of birth in a very short period of time. Less than five percent of women gave birth in hospitals in the early 1900s. Over the next 40 years 50% of women delivered in hospitals (Feldhusen, 2000). In 1950 88% of births occurred in hospitals and within 10 years, in 1960, 97% of births occurred in hospitals (Feldhusen, 2000).

Although there has been a normalization of birth occurring in hospitals, there has also been a recent trend that has created a small surge in home births (Martin et al., 2017). According to US birth records in 2015, there was the highest number of home births (38,542) since reporting began for birth location in 1989. Although this represents only 1.5% of all births it is up from 0.9% in 2007 (Martin et al., 2017). The large

majority (98.5%) of all births in 2015 occurred in hospitals and only 1.5% out of hospital. Of the 1.5% out of hospital births (61,000 of the 3,978,497 births in 2015), 63.1% were at home and 30.9% occurred in a freestanding birthing center (Martin et al., 2017). The rate of home births has increased slightly over the years from 0.56% in 2004 to 0.72% in 2009 (MacDorman et al., 2012).

There has been a minimal but noteworthy increase of the number of births attended by midwives over recent years as well. Although the number of Certified-Nurse-Midwives/Certified Midwives (CNM/CM) attending births has increased since 1989, midwives still only care for a fraction of births in the United States today, the majority of which happen in hospitals. According to the American College of Nurse Midwives fact sheet (2016), “In 2014, CNMs/CMs attended 8% of all hospital births, an 11.1% increase since 2005. The percentage of out-of-hospital births attended by CNMs also increased 9.1% over this period, from 28.6% in 2005 to 31.4% in 2014. Both the number and percentage of CNM/CM attended births in the United States slightly increased from 2013 to 2014. The percentage of total US births attended by CNMs/CMs increased from 8.2% to 8.3%” (p. 1). CNMs attended 8.1% in 2015 (Martin et al., 2017).

Wagner (2006) emphasized, “midwifery plays an important role in strengthening women’s control over their bodies and reproductive systems” (p. 122). The slight rise in midwifery care over recent years suggests there is a subculture of women interested in different care and options than the standard of care model. However, this subculture is juxtaposed against a more predominant medical culture of care that does not currently recognize or effectively support the need and right for women to have an authoritative say over their prenatal and perinatal care.

The explosion of biomedical advances in the 20th century and the movement away from midwifery care and home births, although life-saving in high-risk situations, has also been detrimental to healthy women's experiences of low-risk pregnancy and childbirth. Dr. Wagner (2006), former perinatologist and perinatal epidemiologist who served as a Director of Maternal and Child Health for the California State Health Department, Director of the University of Copenhagen-UCLA Health Research Center, and Director of Women's and Children's Health for the World Health Organization stated:

Having an obstetrical surgeon manage a normal birth is like having a pediatric surgeon babysit a normal two year old. Both will find medical solutions to normal situations – drugs to stimulate normal labor and narcotics for a fussy toddler. It's a paradigm that doesn't work. (Wagner, 2006, p. 5)

Many have agreed with Wagner's point of view and have pushed back against the pathology-based, technocratic model of managed pregnancy and childbirth while advocating for centrality of women's rights and empowerment within childbearing (Ginsburg & Rapp, 1995). The reason this is important to note is because maternity care is becoming recognized as a women's rights issue and not only a health issue (Childbirth Connection, 2004).

The systematic overtaking of pregnancy and birth in the United States by medical and economic systems has perpetuated the diminishment of women and disempowerment of new mothers by promoting the idea that women must remain dependent on the medical system to gestate and birth a healthy baby. A grassroots resistance movement aimed at taking back women's power, autonomy, and rights within childbearing began in the mid-1960s with the feminist movement and a new generation of active-information seeking

consumers (Cahill, 1998; Jung, Wensing, & Grol, 1997; McGregor, 2006; Pelkonen, Perala, & Vehvilainen-Julkunen, 1998; Rosen, Anell, & Hjortsberg, 2001; Singh, Newburn, Smith, & Wiggins, 2002). This woman-initiated movement aimed to create a shift in the redistribution of authority and power back into the hands of pregnant women and midwives, and with some success in parts in some areas of the United States. This natural birth movement and respective subculture promotes and implements a woman-baby centered approach which includes less interventions, more choices and control by pregnant and laboring women, as well as more respect and support for the physiologic-humanized process of pregnancy and birth.

Although far from establishing equanimity, this woman-centric movement created the opportunity for the development of a plethora of childbirth education and support services (Davis-Floyd & Sargent, 1997). The 1970s birthed new empirical research and theories, including “cross-fertilization of anthropology, feminist theory, and social activism” (Ginsburg & Rapp, 1995, p. xi) which provided evidence on the impact of the prenatal and perinatal period on women and children (MacDorman, Declercq, Manacker, & Malloy, 2006; March of Dimes, 2006; Sakala & Corry, 2008). Researchers have recently begun investigating women's experiences of empowerment during pregnancy and birth (Childbirth Connection, 2004; Declercq, Sakala, Corry, & Applebaum, 2007; Likis, 2010; Sakala & Corry, 2008). Evidence suggests that maternal, prenatal, and perinatal women-centric care with the experience of control, decision involvement and authority, and empowerment placed with pregnant and birthing women, has positive implications on maternal and newborn health and development post birth (Declercq et al., 2007; Sakala & Corry, 2008).

This evidence reinforced the need to invest in research and practice to better understand and support the mental-emotional needs of women during the process of becoming mothers. In addition, new women-based support services and resources were initiated, including the provision of doulas (a woman who is trained to assist women in preparation for birth, childbirth labor, and the postpartum period), natural childbirth education classes and books, hypnobirthing, water-birthing, and numerous prenatal care services that support women emotionally and psychologically during the process of becoming a mother. These prenatal resources and support services have subsequently helped to redistribute care to include the psycho-emotional aspects of becoming a mother within pregnancy.

There is a paradox in the current US maternal health care model. On one hand, many women have access to more information and education opportunities to inform their prenatal and childbirth choices. There has been a recent rise of midwifery-based care (Martin et al., 2017), and there is a birth empowerment movement that encourages women to take an active and engaged role in their prenatal and birthing decisions and experiences (Declercq et al., 2007; Fischbein 2015; Sakala & Corry, 2008). On the other hand, national maternal and newborn health outcomes continue to be an issue of political and public concern, for example, rising rates of postpartum depression and anxiety, as well increase in cesarean sections, maternal mortality, and longer postnatal recovery periods (MacDorman et al., 2006; March of Dimes, 2006; Sakala & Corry, 2008). These health statistics demonstrate that our current model of care is not best serving women, children, and families. Evidence suggests the need to question the pathology and medical intervention-based focus of care and the insufficient amount and quality of resources in

place that focus on supporting the positive potential within the prenatal period (Sakala & Corry, 2008). The root of this problem is a debate that is outside the scope of this dissertation. This study is a response to the climate of obstetric care lacking to create an environment that supports the potential for low-risk pregnant women to thrive during pregnancy and childbearing.

Research from disparate fields shed light on the transformational transition of pregnancy and birth and the potential available to women to evolve during this critical life passage. These independent fields of study have yet to be collectively reviewed in a scholarly discussion. This study's literature review creates the context for this dissertation by establishing a synthesis of evidence from the following independent fields: consciousness; neuroplasticity; prenatal and perinatal psychology; maternal-fetal attachment theory; transition into motherhood theories, including the Becoming a Mother theory; anthropological theories; and developmental theories.

Akin to Mindsight Institute founder, Dan Siegel, MD's conceptualization of interpersonal neurobiology, this study uses a synthesized coherence framework to "advance our understanding of human experience by finding the unity of knowledge, or consilience, that emerges with the translation of findings from numerous domains of study into a common language and conceptual framework" (Siegel, 2019a). This synthesizing technique "seeks the similar patterns that arise from separate approaches to knowledge" (Siegel, 2019b) to better reveal how diverse branches of science in consciousness, neuroplasticity, anthropology, and transition theories, when integrated, shed new light on how pregnancy might evolve a woman's consciousness.

Interpersonal neurobiology, according to Dan Siegel, MD, helps us understand that the “structure and function of the mind and brain are shaped by experiences, especially those involving emotional relationships” (Siegel, 2019a). Advances in neuropsychobiology and affective neuroscience provide insight into the neuroplasticity of a woman’s brain that occurs in tandem with the presence of her pre-nate and respective dramatic changes of her pregnant body. Pregnancy is a unique life event that creates conditions unlike any other time in a woman’s life or a human being’s life. This dissertation reveals and links differentiated aspects of research regarding the maternal prenatal period, namely the similarities between pregnancy and mindfulness positive neuroplasticity (consciousness), the dramatic brain-body adaptations of pregnancy (physiological) promoted by the dyadic maternal-fetal interplay of hormones and co-regulation (psychoneurobiology), which simultaneously occur within what is recognized by the literature as a monumental life event or rite of passage (psycho-emotional processes of becoming a mother).

The naturally occurring neuroplasticity of pregnancy and the way the woman’s brain is immersed in hormones generated from the pre-nate and placenta in combination with the implications associated with a rite of passage (also referred to as a major life event) predisposes her brain to adapt in a way that may be similar to advances in awareness and brain states of individuals engaged in consciousness cultivating practices. While it is far too early to draw a scientific conclusion, this preliminary understanding suggests that a healthy pregnant woman’s brain activity and states may be conducive to increasing awareness and evolving consciousness. Background research from consciousness literature is first presented to better understand the context in which this

study exists and to further underscore the need for the current investigation. This is followed by background information from several pertinent fields of study including: neuroplasticity of pregnancy, maternal-fetal dyadic influence on pregnant women, and transitions into motherhood.

Consciousness

Historically, the advancement of one's consciousness was available to people who devoted their lives to spiritual development living monastic lives apart from society. In the last 40 years there has been a consciousness movement (Mandler, 2002) that has spurred the popularization of practices such as meditation, yoga, and other consciousness, body-mind awareness-connecting modalities, recognized and categorized now as Complementary Alternative Medicine (CAM). During this same timeframe research has emerged that substantiates the benefits of consciousness-based practices on psycho-emotional and physical health outcomes (Carlson et al., 2001; 2003; Carlson, Speca, Patel, & Goodey, 2003; Garland et al., 2013; Purnell, Andersen, & Wilmot, 2009).

Recent studies acknowledge the role consciousness, or awareness, plays in the body's capacity to heal (Carlson et al., 2003; Garland et al., 2013; Purnell et al., 2010). Jon Kabat-Zinn started studying the effects of mindfulness-based practices on patients who had exhausted their medical options in the 1970s (Kabat-Zinn, 2003; Kabat-Zinn & Hanh, 2009). He developed the Mindfulness Based Stress Reduction program (MBSR) and found significant emotional and physical health improvements for those with terminal and serious health conditions (Davidson et al., 2003), those needing pain management (Kabat-Zinn, Lipworth, & Burney, 1985), as well as those interested in improving the quality of their life via improved emotional well-being (Kabat-Zinn, 2003;

Kabat-Zinn & Hanh, 2009). Consequently, the MBSR program became the gold standard for mindfulness training and research.

According to Guardino, Dunkel-Schetter, Bower, Lu, & Smalley:

Mindfulness-based approaches are increasingly attracting the attention of health researchers, including those who study pregnancy, because of their demonstrated efficacy in reducing anxiety and psychological distress, and improving health outcomes for diverse populations facing a variety of stress-related medical conditions, including depression, cancer and HIV. (2014, p. 335)

The MBSR program has been adapted and applied to childbirth and mothering preparation courses with successful outcomes (Duncan & Bardacke, 2010).

As of 2017, although proven effective, these prenatal mindfulness-based programs have not been integrated into mainstream care similar to the way other health sectors have adopted the MBSR program. Women are often treated in a hyper-medicalized fashion during pregnancy and childbirth (Attanasio, McPherson, & Kozhimannil, 2014; Davis-Floyd & Sargent, 1997), yet they have not been given the same level of psycho-emotional and spiritual support that has been acknowledged as effective in helping patients in other health sectors. In other words, pregnancy is treated as an illness or condition, yet women are not afforded similar psycho-emotional-consciousness support as other patients facing health challenges.

Women are the top CAM users (Cramer et al., 2016). This trend has translated into an increase of pregnant women participating in consciousness increasing techniques, such as meditation and yoga (Adams et al., 2009; Cramer et al., 2016). It is estimated that 20% of women in the United States practice yoga while pregnant (Adams et al., 2009).

Despite these trends, there is limited theory and research about the evolution of a woman's consciousness during pregnancy, albeit there are theories on the shift in maternal consciousness after the baby is born (Barclay, Everitt, Rogan, Schmied, & Wyllie, 1997; Mercer, 2004; Rogan, Shmied, Barclay, Everitt & Wyllie, 1997).

The goal of this research is to better understand the evolution of consciousness potential for women who are becoming mothers during pregnancy. Mounting neurobiological research provides insight into how the monumental physiological changes of pregnancy impact a woman (Glynn & Sandman, 2011; Hillerer, Jacobs, Fischer, & Aigner, 2014; Hoekzema et al., 2017; Sandman, Davis, Buss, & Glynn, 2011). Synthesization of research on the neuroplasticity of pregnancy with what is understood about consciousness serves to underscore the need for this study's investigation of how women's consciousness can potentially evolve as a result of pregnancy.

Neuroplasticity of Pregnancy

Neuroplasticity refers to how the brain reorganizes itself by forming new neural connections to create new adaptations (Cozolino, 2002; Davidson & Lutz, 2008). According to Davidson & Lutz (2008), "there are many different mechanisms of neuroplasticity ranging from the growth of new connections to the creation of new neurons" (p. 174). There has been a surge of neuroscience research over the past three decades investigating how life events change the brain (Kasala, Bodduluru, Maneti, & Thipparaboina, 2014). This field of study has illuminated new and groundbreaking insights into the enormity of changes that occur within a woman's body and brain during the prenatal period. Researchers have concluded that a woman's brain changes in structure, function, and activity during pregnancy (Barha & Galea, 2017; Brunton &

Russell, 2007, 2008; Brunton, Russell & Hirst, 2013; Glynn & Sandman, 2011; Hillerer et al., 2014; Hoekzema et al., 2016) and evidence suggests that pregnancy may be the most neuroplastic time in a woman's life (Barha & Galea, 2017; Brunton & Russell, 2008; Brunton et al., 2013; Glynn & Sandman, 2011; Hillerer et al., 2014; Hoekzema et al., 2016). An understanding of the neuroplasticity of pregnancy is fundamental to comprehending how a woman's state of mind and being is altered during gestation. According to Dr. Brizendine (2006), "Motherhood changes you because it literally alters a woman's brain – structurally, functionally, and in many ways, irreversibly. . . . Throughout pregnancy, a woman's brain is marinated in neurohormones manufactured by her fetus and placenta" (pp. 95–96).

Exploration of the neuroplasticity of the pregnant brain is presented in the literature review in an effort to understand how the neurobiology of pregnancy might help support an increase in a woman's awareness and evolve her consciousness. Focus on (a) the role of the HPA axis in pregnant women, (b) hormonal changes during pregnancy, (c) neurotransmitter changes during pregnancy, (d) brain state changes during pregnancy, and (e) brain structure changes during pregnancy will illustrate the neuroplasticity that uniquely occur during the maternal prenatal period.

The literature review points out the similarity between the brain state changes that occur among pregnant women (Qureshi, Miran, Li, & Jiang, 2016; Walia, Aggarwal, & Wadhwa, 2013) and meditators (Krishnakumar, Hamblin, & Lakshmanan, 2015; Lagopoulos et al., 2009), namely the predominant theta brain activity. This suggests that pregnant brain states may be predisposed to conducive states that are associated with an

increase in consciousness, yet little to no research has explored this to date thus necessitating the current investigation.

Maternal-Fetal Dyadic Influence on Pregnant Women

Dyadic influence of the maternal-fetal relationship is well researched in Prenatal and Perinatal Psychology (PPN) and Maternal Fetal Attachment theory (MFA). PPN is the discipline that studies the effects of stress and/or overwhelming events that occur from conception through the prenatal and perinatal developmental periods. (See definitions section.) According to the Association of Prenatal and Perinatal Psychology and Health (APPPAH), “these experiences are *formative* for both babies and parents and tend to establish patterns of intimacy and sociality for life” (Birth Psychology, 2017). PPN theory and practice is largely focused on understanding the implications of the maternal-fetal dyadic relationship, however it is primarily pre-nate-centered with a great deal of discussion on how maternal stress and environmental challenges and traumas impact the developing human being from prenatal development through adulthood. There is little emphasis on the mother’s experience during the transitional period of pregnancy through the developmental process of becoming a mother.

MFA theory and research expanded on Attachment Theory’s core concepts to bring recognition that the interpersonal, neurobiological relationship and attachment between mother and child begins during pregnancy (Brandon, Pitts, Denton, Stringer, & Evans, 2009). According to MFA research the pre-nate’s development of socio-emotional processing, stress coping functions, and self-regulation are contingent on interactive regulation with her/his mother (Brandon et al., 2009).

Understanding the dyadic maternal-fetal tenets of PPN and MFA literature and theories is an important foundation to this dissertation. Both theories recognize the influence and importance of this dyadic relationship and emphasize the impact of the maternal-fetal dyad on the prenat. Although these two theories are inclusive of the mother, they are primarily concerned with the woman as she influences and impacts the development of her prenat into childhood and adulthood. This highlights the disconnection in understanding the process of becoming a mother from the woman's perspective. The limited discussion of the dyadic interplay of consciousness is focused on the prenat, not the mother. There has yet to be substantial research on if, and how, the prenat's sentience influences the pregnant mother's consciousness. This study integrates PPN and MFA evidence of how the maternal-fetal relationship is influenced by dyadic communication on the psycho-emotional, consciousness levels combined with evidence on the neuroplasticity of pregnancy to demonstrate the likelihood that this dyadic relationship impacts a woman's consciousness.

Transition into Motherhood

Research acknowledges the transformational process that occurs for women in becoming a mother; however, much of the scholarly conversation has assumed that this process begins once a woman has given birth and research has been conducted accordingly. In addition, the historical trend has been to focus on what happens when things go wrong in the prenatal and perinatal period and the negative implications of this process. The need for investigation into the positive potential inherent to women during this life transition has been encouraged by maternal researchers (Davis-Floyd, 2004; Mercer, 2004; Prinds, Hvidt, Mogensen, & Buus, 2014; Wagner, 2006). In the past 4

decades, studies have begun exploring the potential—even to the degree of developing new terminology—for the evolving nature of motherhood (Fedele, 2016; Glynn & Sandman, 2011; Ludington-Hoe, 1977; Mercer, 2004; Partridge, 1988; Prinds et al., 2014).

Pregnancy has been recognized in anthropological literature as a rite of passage, a major life transition that serves as a monumental and defining part of woman's trajectory of self-development. The inherent transformation that occurs during major life passages has been known to catalyze significant change in one's sense of self, including evolution of a human being's consciousness (Davis-Floyd, 2004; Partridge, 1988). To better understand how and why big changes in life facilitate self-transformation during pregnancy it is necessary to draw upon research from diverse fields, such as anthropological research, developmental theories, and life theories. When synthesized, findings from these fields bring insight into how pregnancy changes a woman's sense of self and psycho-emotional identity, which may provide insight into this study's research question about a how a woman's experience of pregnancy can evolve her consciousness.

In the late 1980s it was theorized that a woman's sense of self and self-transformation occurs in tandem with the prenat's development (Partridge, 1988). Other theories, such as Becoming a Mother theory (BAM) acknowledge a woman's process of becoming a mother from pregnancy forward by emphasizing the shift in a woman's identity as mother after birth (Rubin, 1967). However, BAM theory focuses on the attainment of maternal identity through completion of maternal decision making and tasks. BAM theory acknowledges that maternal sense of self is dynamic and develops throughout a woman's journey as a mother from birth and beyond. There is mention

within the theory that a woman's identity begins to shift as early as pregnancy, but that is not explored via empirical research thus requiring further investigation. Anthropological research supplements BAM findings and provides insight into the psycho-emotional transformations that women experience beginning in pregnancy. None of these studies offer direct insight into the change in women's awareness or consciousness during the critical life transition of pregnancy.

Collectively there is significant evidence suggesting the potential for women's consciousness to evolve during pregnancy, yet these findings exist in disparate fields. A cohesive scholarly conversation that draws together research that supports women's evolutionary potential is yet to occur, thus necessitating the current study. This investigation is grounded in findings from psychology, social neuroscience of mindfulness training, neuroscience of pregnancy, neuroendocrinology, and consciousness, PPN, MFA, and transition-into-motherhood theories to create a synthesized investigation of pregnancy as a rite of passage that has the potential to evolve women's consciousness.

Statement of the Problem

There is public and professional concern regarding the current state of maternity care in the United States. Researchers have begun investigating various aspects of women's care during this critical life passage. Yet, there has been little focus on women's consciousness, an area that once understood better could provide insight and direction to maternity care as a whole.

The standard of care, which is fear-driven and pathology-focused, (even for low-risk pregnant women) has become normal in the United States. The predominant medical

model is crisis prevention and intervention based, with a focus on predicting and addressing worst-case scenarios, even for healthy low-risk pregnant women. This authoritative and management-centered approach to pregnancy induces fear. Research shows negative implications resulting from prenatal stress and anxiety for mothers and children through their life trajectory (Monk et al., 2000; Peña, Monk, & Champagne, 2012). These findings have not changed the prenatal and childbirth practice protocols, thus resulting in a culture of care that may promote stress, fear, and trauma during a critical developmental life passage.

The literature emphasizes the value and benefits associated with woman-centered care that tends to her whole self, physically, psycho-emotionally, and in some cases, spiritually (Axness, 2012; Davis-Floyd, 2004; England, 2017; Weinstein, 2016; Werner et al., 2016). There is an opportunity in research and practice to redefine healthy outcomes and experiences of childbearing, to look beyond the physical and integrate psycho-emotional health and well-being. The positive potential available to women's consciousness development during pregnancy has been understudied.

The lack of attention to consciousness as an aspect of pregnancy is a detriment to both mothers, children, and society. There are three major contributing factors that account for the under investigation of consciousness as an integral part of women's experience of pregnancy. The following is a brief summary of each of these factors.

Pathological Focus in Maternity Care Research and Practice

The prevalent allopathic maternity care model views pregnancy as a condition, disease, or crisis that needs to be medically treated and managed. This results in pathology research and crisis intervention protocols in prenatal and perinatal practice.

There is mounting research on the negative implications and risks associated with pregnancy and childbirth, (e.g., maternal and neonatal mortality and morbidity, postpartum depression, disrupted bonding and insecure maternal-child attachment, and a correlation between failing adult health and prenatal and perinatal conditions and events) (Attanasio et al., 2014; MacDorman et al., 2006; March of Dimes, 2006; Sakala & Corry, 2008; Hicks, Spurgeon, & Barwell, 2003; Keppel, Percy, & Klein, 2004). The surge in concerning pre- and perinatal outcomes has only recently been linked to the high intervention approach (even for low-risk women) of our current pathologically focused model of maternity care (Cook & Dickens, 2001; Hicks et al., 2003; Keppel et al., 2004; Shaw, 2006).

Financial incentives (the nearly doubled cost of cesarean section births compared to vaginal hospital birth) combined with the fear of litigation contribute to the continued and ongoing hyper focus of the pathological lens in which pregnancy is viewed and managed (Childbirth Connections, 2013; Wagner, 2006). The repercussions of this translate into increased interventions and negative psycho-emotional implications for low-risk pregnant mothers and babies.

Lack of Attention on the Positive Potential of Pregnancy

Only in the last 30 years have researchers begun to investigate the positive potential available to women through the process of pregnancy, childbirth, and

motherhood (Attanasio et al., 2014). Research that approaches pregnancy as a developmental passage for women includes the psycho-emotional component and what might be possible for women. There is much that is yet to be understood about this topic, particularly within the full realm of a woman's experience during this life transition. At the time of this study there was no research that investigated consciousness during pregnancy. A clear understanding of how women's consciousness can evolve by their experience of pregnancy is yet to be scientifically explored.

Some insight into if and how a woman's consciousness may evolve during and beyond pregnancy is found within studies of consciousness, social neuroscience, prenatal and perinatal theory, maternal-fetal attachment theory, and transition into motherhood. However, these studies are limited and have yet to be brought together in one cohesive scholarly discussion. Without a clear understanding of the dramatic neuroplasticity of pregnancy and the effects this has on a woman's consciousness it is hard to know if, and how the current model of care is influencing a woman's consciousness development in tandem with her physical developmental changes during pregnancy. This is reflected by the lack of discussion on the positive potential inherent in pregnancy for a woman.

Although there is a gap in scholarly research and discussion regarding maternal consciousness during the transition period of pregnancy, there has been mounting scholarly investigation on consciousness in general over the past 40 years (Bayne, Hohwy & Owen, 2016; Casali et al., 2013; Davidson, 2012; Lutz, Dunne & Davidson, 2007; Mandler, 2002; Siegel, 2016; Vago & David, 2012). There are multiple challenges inherent in studying consciousness, let alone maternal prenatal consciousness. For instance, there is a lack of an interdisciplinary definition of consciousness which presents

challenges for consciousness researchers. This is compounded by the necessity to maintain noninvasive safety measures when designing prenatal studies. Another challenge in studying and understanding women's consciousness during pregnancy can be found in the lack of literature focused on women's inner experiences, which has been interpreted by many as a continuation of the historical oppression of women.

Oppression of Women

The historic oppression of women along with the medicalization of pregnancy and industrialization of birth have created detrimental implications for mothers and children. The long-standing management and medicalization of women's bodies during pregnancy and childbirth have minimized women's rights, decision-making authority, and ability to be active participants. This authoritative model has consequently also left little room for pregnancy and childbirth to be recognized as a potentially consciousness expanding time of growth and development for women. All of this has collectively limited the potential available to women today. As Marsden Wagner (2006) wrote, our "maternity care is not primarily a health issue but a women's issue" (p. 122). Part of this issue is the lack of acknowledgement and support for the evolutionary nature of consciousness within maternal prenatal development. In addition to Wagner's point that this is a women's issue it is also argued that this is a humanitarian issue (Chi et al., 2015).

The oversight or diminishment of women's issues is now recognized as problematic for women, couples, families, communities, and society at large. Recognition of the importance of changing the oppressive climate for women within maternity care has been adopted as United Nations Millennium Development Goals (Waage et al., 2010). In March 2016 the United Nations Sustainable Development Department adopted

the promotion of mental health and well-being of pregnant women as a global target for the year 2030 as a means of preventative treatment (United Nations, 2018). In tandem with the acknowledgement that change is necessary to better support women's experiences of pregnancy and childbirth, there is a simultaneous discussion regarding the long-standing oppression of consciousness in human history and the need to better understand consciousness for all ages and stages of development.

Purpose of the Study

The purpose of this study is to explore how a woman's experience of pregnancy can evolve her consciousness. The lack of discussion among the relevant fields pertaining to consciousness and mindfulness research, positive neuroplasticity research, prenatal and perinatal theory, maternal-fetal attachment theory, and transition into motherhood research call for the need to create synthesized coherence. This is done by “(1) formulating overarching ideas that articulate and constitute the research areas, (2) constructing congruent relationships among different research domains to create common ground, and (3) reinterpreting previous work to show underlying consensus about the configured investigative ground” (Locke & Golden-Biddle, 1997, p. 1023).

Using an abbreviated constructivist grounded theory research method and reviewing the literature with a coherent synthesis lens, this research bridges these independent fields of study as a way to determine if, and how, a woman's experience of pregnancy can evolve her consciousness. This study attempts to unify the literature across various research disciplines to provide scholarly corroboration on the discussion of how a woman's consciousness may evolve during pregnancy. There has been some progress with synthesis between the fields of neuroscience and prenatal and perinatal research on

mindfulness meditation and its applications to pregnancy. However, for the most part the interdisciplinary integration of these bodies of research have not been previously attempted to date. Doing so will expand upon existing knowledge to create a theory that attempts to explain how a woman's consciousness can potentially evolve during pregnancy and simultaneously fill this gap in the literature. The goal is for this study to serve as a valuable contribution by providing insight into what is possible for women's consciousness during the process of becoming mothers.

A qualitative mode of inquiry was selected as a way to gain insight into participant-generated meaning about the social process that occurs within the culture that supports pregnancy. Abbreviated constructivist grounded theory was selected as the most appropriate methodology to better understand how a woman's experience of pregnancy can evolve her consciousness during the prenatal period. The abbreviated version of social constructionist grounded theory invites the researcher to participate in the construction of the knowledge gained from the data collected. Grounded theory is useful for investigating life cycles (Glaser, 1992) such as pregnancy. The abbreviated grounded theory method (Strauss & Corbin, 1994) was a pragmatic selection in consideration of time and resources.

A remote 2-hour focus group of eight professional experts within the perinatal field was conducted as part of the data collection. The semi-structured focus group was moderated by the primary researcher via a remote teleconference using a service called Free Conference Call. Open-ended questions that were prepared in advance were presented one at a time in order to facilitate a conversation among the participating experts about the research question in a conversational matter. The focus group was

transcribed verbatim by a transcription service, Verbalink, and then reviewed by the primary researcher for accuracy. The next step in analysis was to write down memos in response to the transcription and then code the transcription in order to generate themes and categories that were then used to generate the study results.

The goal of the focus group was to simulate a microcosm of the progressive aspect of our society who professionally support pregnant women in diverse, interactive ways. The focus group method was used as a way to capture data that is dynamic and relational and can be applicable for the generation of a grounded theory. The abbreviated version of social constructivist grounded theory design (Willig, 2013) invites the researcher to participate in the construction of the knowledge gained from the data collected from one round of inquiry.

Research Statement

The goal of this study was to explore the following research question: “How can a woman's experience of pregnancy evolve her consciousness?” The investigation began with a field of inquiry—“maternal consciousness during pregnancy” rather than formulating a specific research hypotheses (Charmaz, 2006).

Importance of the Study

The importance of this study is twofold. First, the literature review synthesizes research that had not been integrated. There was a gap in the scholarly understanding of the potential available to women to evolve during pregnancy. The synthesized coherence of the literature illustrates scientific evidence that may help explain how a woman’s experience of pregnancy has the potential to evolve her consciousness. At the time of this study there was no other research that synthesized these diverse fields within psychology,

science, and consciousness. Presented in this dissertation is literature garnered from siloed fields to support an interdisciplinary exploration of the research inquiry guiding this study. The contribution of synthesized coherence is based on the ability to bring together disparate domains of knowledge that have not previously been linked. This study bridges findings from the literature on consciousness and mindfulness, social neuroscience and the neuroplasticity of pregnancy, and PPN, MFA, BAM, anthropological and developmental theories to generate and substantiate a new understanding of how a woman's experience of pregnancy can evolve her pregnancy.

Second, the data collected in the focus group explores the answer to the research question, "How can a woman's experience of pregnancy evolve her consciousness?" Gaining input from professional prenatal experts substantiated how pregnant women experience a significant internal identity shift while managing the cultural expectation that they should function just as they were prior to pregnancy. This data collected provides insight into how a woman's consciousness can evolve during pregnancy.

The findings from this study may present information that can be used in theory and practice which in turn can support the physical and mental-emotional health and well-being for women and children during the prenatal and perinatal period and beyond. This dissertation focuses on the positive potential available to women instead of the prevalent discussion about the risks and negative implications of pregnancy. The study's interest is in women's and humanity's evolutionary potential available in the prenatal-maternal stage of human development. The value of creating awareness around the capacity and right to evolve consciousness for women who are becoming mothers is founded upon the primary researcher's goal to contribute to the elevation of the

perception, role, and support of mothers. There are four main domains in which this study hopes to offer contributions: (a) childbearing women, (b) providers and educators, and (c) macro-level maternity system, as well as (d) future research.

Childbearing Women

This study aims to support women during pregnancy and to elevate the cultural perception of pregnant women and the process of becoming a mother. The results may be used to empower pregnant women with education on the potential for the positive neuroplasticity of pregnancy. The grounded theory that emerged from this study, the Maternal Consciousness Sequence Theory, may serve as a maternal consciousness map for some pregnant women to help promote self-awareness and context for the consciousness expanding nature that is potentially inherent in pregnancy. This study may provide pregnant women understanding of how their experience of pregnancy holds a potential to evolve and motivation to conscientiously engage with the Maternal Consciousness Sequence (MCS). In addition, this research may be used to garner support and resources to provide body-mind, consciousness-engaging activities and mindfulness training for women during the self-transformative time of pregnancy.

Providers and Educators

The findings from this study may also be of value to prenatal health care providers and educators. Prenatal and maternal care professionals have the potential to promote the development of the whole woman as she evolves into a mother with references and resources throughout her prenatal care thus contributing to a woman's potential to utilize the neuroplasticity of pregnancy to promote her own evolution of consciousness. This study may help educate maternity care professionals about how this

critical period of human development for women can be better supported. This information may then be integrated into the curriculum for maternity care provider training, childbirth preparation classes, and outreach/educational materials for expecting parents. The findings from this study may increase prenatal professional sagacity and contribute to ways in which providers can help inform pregnant parents about the opportunity for a woman to grow and increase her awareness during this stage and the importance of psycho-emotional-consciousness support.

Maternity Care System

This research addresses a critical period of human development that has not been explicitly acknowledged and may therefore inform maternity system-level perception and consideration, thus impacting prenatal and perinatal services. This research intends to highlight within scholarly literature, and at the same time deepen the appreciation of, the value of this stage of human development which can help lead to resources getting allocated to support the empowerment of women's development during pregnancy. The overarching research goal is to ground this information into public and professional understanding so that change may occur that better supports pregnancy for mothers, babies, families, and society. A grounded theory regarding the evolution of consciousness during pregnancy may offer a platform to help justify and promote further investigation of the needs of pregnant women and how to support this population who are vital to all of humanity.

Future Research

This study creates a platform for future scientific research aimed at better understanding the potential for women during the highly neuroplastic phase of human development—pregnancy. Succeeding studies may further investigate the inherent body-mind maternal, prenatal adaptations and how to positively direct the neuroplasticity of pregnancy.

Limitations of the Study

This pragmatic study design has some limitations worthy of mention. A classic grounded theory study would have involved multiple focus groups producing richer and more saturated data. However, due to time and financial constraints the study was limited to an abbreviated version. In addition, grounded theory has only recently been accepted as a qualitative research method for psychological research. The suitability of grounded theory for psychology research was once challenged because it was originally intended to study and explain social processes as compared to the nature of experience.

Other limitations relate to the lack of inclusion of a more diverse group of health care professionals as well as pregnant or recently pregnant women. The decision to limit participants and focus on professional input was done to create a more global versus personal context and produce findings grounded in professional data. A more detailed explanation of the limitations of this study are discussed in the methodology and the discussion chapters.

Assumptions of the Study

There are several assumptions guiding this research that are worthy of mentioning many of which stem from the field of PPN, a discipline that studies the effects of stressful or overwhelming experiences that occur from conception through the prenatal and

perinatal developmental time periods. PPN theory holds that prenatal and perinatal experiences have a lifelong impact on health and human behavior for mother and child. This study assumes that the presence of a prenatate (from conception onward) influences the mother's consciousness.

The second assumption is that there is a psycho-emotional component of a woman's experience during pregnancy and birth. This internal aspect of her experience of becoming a mother, as well as her relationship with her prenatate in utero, impact the trajectory of both mother and child. The dyad is seen as fundamentally interconnected. This study assumes that the prenatal and perinatal period matter for women and society at large, thus requiring further investigation of how women's consciousness is impacted during this time. APPPAH writes,

We believe that [prenatal and perinatal] experiences are *formative* for both babies and parents, and tend to establish patterns of intimacy and sociality for life. At stake here is *quality of life*—the quality of personal growth and the quality of society itself. Ultimately, we like to point out, “Womb ecology becomes world ecology.” (Birth Psychology, 2017)

This study is founded upon the belief that by better understanding the transformation that women undergo during pregnancy we can improve the quality of life and state of the world for everyone. In other words, supporting pregnant women benefits humanity.

Thirdly, this study assumes mentally healthy women have an innate drive to take care of their prenatates during pregnancy. This drive translates as an incentive for women to better care for themselves. Self-care often includes addressing personal and interpersonal issues that in turn help free a woman from past limiting patterns and

behaviors and propel her into a growth stage of intrapersonal development. It is assumed that prenatal inspired self-care is a part of the process of self-transformation and self-awareness.

Lastly, it is assumed that maternity care professionals have an important role to offer in helping to better understand the landscape of maternal consciousness during pregnancy and the implications for mother. The diverse perspectives of maternity care professionals can help to generate insight as well as a positive impact on pregnant women's experiences of becoming a mother. It is assumed that practitioner input for this investigation is necessary.

Definitions

The following definitions are designed for this study:

Awareness: A sense of knowing, a felt-sense that allows for choice and change for the human being experiencing (Siegel, 2012a, 2018a). Awareness and consciousness are sometimes used synonymously in the literature.

Consciousness: Every human has fundamental consciousness, the innate ability to exercise the capacities of attention and awareness (Lutz et al., 2007). According to Noetic Sciences, consciousness explains, "how an individual perceives and interprets his or her environment" (Noetic Sciences, 2017). Basic or fundamental consciousness has also been referred to as localized consciousness as it pertains to cognitive brain activity (Woollacott, 2015). This study is interested in higher functions and qualities of consciousness. Research on awareness and mindfulness (or mindful awareness) is presented in the literature review to provide a more in depth understanding of consciousness and the evolution of consciousness.

Evolution of consciousness: The evolution of consciousness is referred to within this study as a transformation of consciousness, an increase of consciousness, or an increase in awareness. Ready and skillful access to awareness and insight is also considered an integral part of the evolution of consciousness. As the function of awareness increases there is an upward spiral process of realizing, integrating, and embodying greater awareness and insight (mindfulness) and consequently consciousness. Claudia Welss, Board Chair of Institute of Noetic Sciences (IONS), defines consciousness transformation as a:

Shift in perspective or worldview that results in an expanded understanding of self and the nature of reality. Such transformations usually lead the person to a greater sense of meaning and purpose and a reorientation of priorities toward the health and wholeness of both self and the larger community. There is often a realization that self, social and planetary healing depend on each other. (personal communication, March 2, 2019)

Note: The term *evolve* is not to imply that women need fixing or are subpar, and therefore they need to evolve. To the contrary, in this dissertation, the term *evolve* refers to the process of growing and gaining more skillful access to, and application of, awareness and insight, also called mindfulness (or mindful awareness).

Maternal Consciousness: Maternal consciousness within this study refers to a pregnant woman's growing connection with the mothering or maternal principle of caring for and nurturing life and sentient beings. Maternal consciousness includes a woman's shift in perspective from herself as woman to an expanded awareness that includes the

conceptualization of herself as mother. The operational definition of maternal consciousness used in this study encompasses the following:

- A pregnant woman's capacity to observe, reflect on, and gain perspective and understanding regarding her needs, thoughts, emotions, and behaviors in regard to mothering.
- A woman's ability to intentionally direct her attention inwardly toward the dyadic relationship with her baby in utero and perceive feedback within this unique, reciprocal, interpersonal communication flow.
- A pregnant woman's attention to and awareness of her developing maternal self.
- A woman's awareness of the transformation and expansion of self in relationship to her developing baby in utero, and how this influences her perception of, and relationship with herself, partner, parents, community and humanity at large.

Healthy Pregnancy: There is yet to be an official, consensus definition for healthy pregnancy. For the purpose of this study, healthy pregnancy occurs when a woman has mental-emotional well-being and an uncomplicated, low-risk, first time, singleton pregnancy with the absence of lifestyle risk factors (such as substance abuse and domestic violence).

Clarification of the key terms (i.e., health, mental health, and low risk) used in this definition are offered to provide a more concrete understanding of healthy pregnancy. The word *healthy* is drawn from the World Health Organization (2014) as “a state of complete physical, mental and social well-being and not merely the absence of

disease or infirmity.” The World Health Organization (2014) also offers a comprehensive definition of mental health as “a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community.”

The term low risk is loosely defined in research. According to the Board on Children, Youth, and Families; Institute of Medicine; National Research Council (2013), Gregory defined low risk as:

Singleton, term, vertex pregnancies, and the absence of any other medical or surgical conditions. Low risk is a dynamic condition, one subject to change over the course of the antepartum, intrapartum, and postpartum periods. The change can be acute and unexpected” (Board on Children, Youth, and Families; Institute of Medicine; National Research Council, 2013).

The American Academy of Pediatrics (2013) and the American College of Obstetricians and Gynecologists (2017) identify candidates for a home birth as low risk, defined as the “absence of preexisting maternal disease, absence of significant disease occurring during the pregnancy, a singleton fetus estimated to be appropriate for gestational age, and a cephalic presentation” (The American Academy of Pediatrics, 2013, p. 1017). Low risk is an essential component of a healthy pregnancy.

Maternal-fetal dyad: The reciprocal relationship between mother and baby in utero.

Mind: In the field of Interpersonal Neurobiology, the mind is defined as the emergent self-organizing, embodied and relational process that regulates the flow of energy and information within an individual, between people, and in the environment in

which one lives (Siegel, 2012a, 2016). In terms of awareness, sometimes the mind has awareness of subjective, felt experiences and information, and sometimes not. There are fundamental information processes that do not require awareness to function. The brain organ is responsible for neuronal firing (Siegel, 2016). While the mind can use the brain, the mind far exceeds brain activity and is not contained within the human skull. The mind is an emergent process of a complex system (Siegel, 2012a) that gives rise to the subjective experience of thought, memory, and emotion and gives rise to interpersonal connections and sense of purpose and meaning (Siegel, 2016). This definition is a composite derived from Daniel Siegel's extensive work elucidating the mind (Parker, Nelson, Epel, & Siegel, 2015; Siegel, 2012a, 2014, 2016, 2018a, 2018b).

It should be noted that contemplative traditions differentiate between the functions of human mind and the nature of mind and suggest that humans can advance and use the functions of the mind, such as awareness and insight, to uncover the nature of mind.

Positive neuroplasticity: Neuroplasticity is often referred to as brain plasticity, brain adaptation, or brain modification. Neuroplasticity refers to the brain's ability to reorganize itself by forming new neural connections that create either positive adaptations (Cozolino, 2002; Davidson & Lutz, 2008).

Prenatal period: The stage of human development (i.e., pregnancy) from conception to childbirth.

Perinatal period: The time period prior to and surrounding childbirth. Specificity ranges regarding the start and end of the perinatal period. Some say the perinatal period begins as early as 22 weeks gestation and ends 1 to 2 weeks post birth; however, others

use the word perinatal to refer to the time including labor, birth, and the immediate days post birth.

Psycho-emotional: Interrelated factors of a person's psychological and emotional state of being.

Summary

This chapter provided an overview of relevant background information, including a statement of the problem that supports this study. A summary of how this study was conducted followed by the research statement, importance of the study, and study limitations were presented. This chapter concluded with a discussion regarding the study's assumptions and key definitions. Presented in the following chapter is literature that examines the research inquiry, "How can a woman's experience of pregnancy evolve her consciousness?"

CHAPTER 2

LITERATURE REVIEW

This literature review aims to create synthesized coherence by linking components of existing theories and studies from several fields in an effort to understand the potential for the expansion or evolution of a woman's consciousness interdependent with her experience of pregnancy. This review commences with an examination of consciousness and mindfulness continued by a comprehensive research review and comparison of the neuroplasticity of mindfulness training and the neuroplasticity of pregnancy. Followed by a presentation of literature relevant to the neuroplasticity of pregnancy, specifically the theories of prenatal and perinatal psychology and maternal-fetal attachment. Finally, succeeding the attempt to create synthesized coherence with these disparate fields of literature, this review will culminate with a summary of theories related to becoming a mother, life transitions, and human development in light of the research question, "How can a woman's experience of pregnancy evolve her consciousness?"

Consciousness

There are hundreds of articles related to consciousness, awareness, self-awareness, mindfulness, and meditation respectively. Scholars and theorists have spent decades attempting to demystify and articulate these complex and overlapping constructs (Cahn & Polich, 2006; Craig & Craig, 2009; Farb et al., 2007; Lutz et al., 2007; Raffone & Srinivasan, 2010; Siegel, 2012a, 2016, 2018a). For the scope of this study, definitions

of consciousness, mindfulness (as a state and practice), and meditation will be presented followed by a description of the relevance of these interrelated terms.

Distinctions of Consciousness

There are various approaches to define consciousness within the literature making this construct a challenge to define. Philosophers, scientists, meditators, scholars, and theorists have made great efforts to show how consciousness is not generated by or contained within the brain organ and human body (Bayne et al., 2016; Casali et al., 2013, 2016; Farb et al., 2007; Siegel, 2012b, 2016, 2018a; van der Wal, 2013). Awareness and insight (mindfulness) are functions of consciousness. More specifically, awareness of, and insight about, one's inner life (thoughts and emotions) are functions of consciousness (Lutz et al., 2007; Siegel 2016, 2018a). Since this study is focused on the process of evolving consciousness, it is important to differentiate between basic/fundamental consciousness and the transformational process of evolving one's awareness of, and access to, greater consciousness. Brief definitions are presented below. Beyond this section the word consciousness is used throughout this dissertation to refer to the evolution of consciousness versus fundamental consciousness.

Fundamental Consciousness

Fundamental or basic consciousness refers to the inherent ability to exercise the capacities of attention and awareness (Lutz et al., 2007). Fundamental consciousness pertains to cognitive brain activity—thoughts and emotions (Noetic Sciences, 2017; Woollacott, 2015). The ability to be aware of being aware is an innate part of being human.

Evolution of Consciousness

The evolution of consciousness is a process of realizing, integrating, and embodying greater awareness and insight (mindfulness). The definition of human consciousness has been expanded by social neuroscientists to include the existence of a non-physical and infinitely powerful mind (Siegel, 2012b, 2016; Woollacott, 2015), which supports the understanding of how consciousness or the access to consciousness evolves.

For the purpose of this study, evolution of consciousness is the process of gaining access to clearer awareness and presence through which one perceives and relates to self, other, and the world. The Institute of Noetic Sciences defines consciousness transformation as a:

Fundamental shift in perspective or worldview that results in an expanded understanding of self and the nature of reality. Such transformations usually lead the person to a greater sense of meaning and purpose and a reorientation of priorities toward the health and wholeness of both self and the larger community.

(Noetic Sciences, 2017)

Integral to the evolution of consciousness is the capacity to choose intentional behavior versus reactive, conditioned behavior (Woollacott, 2015). When an individual is in a state of awareness, a plane of possibility is accessible allowing for a choice in response versus reaction (Siegel, 2018a).

Awareness as a function of consciousness is the knowing of consciousness (Siegel, 2018a), and it is the knowing and process of clear-seeing perception of consciousness that is integral to the evolution of one's consciousness. In other words, evolving in this study refers to becoming conscious of the thoughts, emotions, and

memories that obscure one's access to perceiving and responding clearly. Research on awareness, self-awareness, and mindfulness is presented in this literature review in order to provide a more in depth understanding of the functions of consciousness and the evolution of consciousness. The following definition of maternal consciousness provides insight into how consciousness applies to the prenatal maternal period.

Maternal Consciousness

Maternal consciousness within this study is based on a woman's shift in perspective and awareness from self as woman to her expanded awareness that includes herself as mother. Pregnancy inherently provides a concentrated period of time for a woman to physically, emotionally, and mentally transform, all of which may have the potential to impact her consciousness. The unique experience of growing and relating to a pre-nate allows for change in how a pregnant woman experiences and perceives her sense of self and the world (Alhusen, 2008; Barha & Galea, 2017; Glynn & Sandman, 2011; Hoekzema et al., 2016; Lyman, 2005; Rubin, 1967). The developmental phase of pregnancy for a woman may catalyze a positive change in priorities. A similar perspective can be found in the Becoming a Mother theory and is paramount as Rubin (1984) explains, "from onset to its destination, childbearing requires an exchange of a known self in a known world for an unknown self in an unknown world" (p. 52). The operational definition of maternal consciousness used in this study encompasses the following:

- A woman's capacity to observe/witness/understand her own needs, behaviors, and attitudes in regard to mothering.

- A woman's ability to intentionally direct her attention inwardly toward her dyadic relationship with her fetus in utero and perceive a feedback loop.
- A woman's awareness of her developing identity as a mother and how this influences her perception of herself, partner, parents, siblings, and world.
- A woman's awareness of the evolution of her maternal self in relationship to her developing fetus in utero.

This study examines how the transformation of a woman's consciousness during pregnancy may give her greater access to higher states of consciousness. In other words, might healthy pregnant women be predisposed to higher states of awareness similar to what is achieved as a result of mindful? Mindfulness is commonly known as a state of higher consciousness. There is mounting research on this particular state of higher consciousness therefore necessitating review of this body of research.

Mindfulness

Mindfulness is considered an attribute of higher consciousness that requires intentional cultivation (Brown & Ryan, 2003; Cahn & Polich, 2006; Farb et al., 2007). Mindfulness and higher consciousness share the common characteristics of an increase of self-awareness, insight, connection, and compassion for self and others, as well as a sense of well-being (Brown & Ryan, 2003; Siegel, 2018a).

There are various attributes of higher consciousness within contemplative practice, mindfulness is heavily researched. The evidence presented on the neuroplasticity of mindfulness training provides an exploration of how clear awareness is accessed and consciousness evolves. The comparison of the positive neuroplasticity of mindfulness training to the positive neuroplasticity of pregnancy (to be discussed in the

pregnancy section) may demonstrate how a healthy woman's experience of pregnancy can evolve her consciousness.

Mindfulness is a term that has been translated from two ancient sacred languages Pali and Sanskrit. Sati (Pali) was translated as having awareness or mindfulness (Bodhi, 2011) and Smṛti (Sanskrit) has been translated as mindfulness, a convergence of awareness and remembering (Brazier, 2013). Pali is the language of the texts of Theravada Buddhism. The translation of these terms has been a challenge for Western scholars in that it is difficult to convey their complete meanings within English language. Looking more closely into the translation of mindfulness offers insight into the related meaning of mindfulness and higher consciousness.

The root of the word mindfulness provides greater understanding of how this term refers to a higher state of consciousness. Sanskrit is the language of the sacred Vedic texts. In Sanskrit, Smṛti, as it relates to the Vedic teachings (Sharf, 2014), essentially means "to remember" or "to bear in mind," similar to Brazier's (2013) translation of "awareness and remembering" (2013). The Pali term sati also means "to remember" one's cultivated awareness as a result of the teachings and practices, in tandem with one's moment-to-moment experience and awareness (Sharf, 2014). Some scholars point out that the English meaning is too reduced, and that Sati or "mindfulness" is actually the practice and experience of perceiving the true nature of the phenomena of the mind in relationship to a greater perspective of reality (Sharf, 2014). The deeper understanding of the translation of sati provided in the 1800s by Pali-language scholar Thomas William Rhys Davids offers additional insight. He refers to sati as being "mindful and thoughtful" in view of the activity of the mind which is accompanied by a constant presence or peace

of mind (Rhys Davids, 1881). Hanh (1976) contributed the translation of mindfulness as “keeping one’s consciousness alive to the present reality” (p. 11). These definitions help us understand the depth and meaning held within the root of these ancient terms.

Mindfulness is commonly used to refer to a quality or function of awareness. In Eastern philosophy, *mind* refers to a great mind, an infinite mind of consciousness and not to the brain or brain activity. A popular definition of the state of mindfulness has been provided by mindfulness researcher, teacher, and author, Jon Kabat-Zinn (2003):

“awareness that emerges through paying attention, on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment” (p. 145).

Kabat-Zinn recognizes mindfulness as a capacity inherent in all human beings that with intentional practice can become greater in quality and degree bearing fruits of insight, empathy, compassion, higher states of awareness, and health.

In addition to the discussion of mindfulness as an attribute of higher consciousness as explored in the history of the word, the term mindfulness also refers to contemplative meditation techniques and practices. While there has been discussion to differentiate the two uses of the term mindfulness (state and practice), there has yet to be agreement on a new term that would create clear distinction between the two meanings. Because the term mindfulness is used interchangeably when referring to an attribute of consciousness and practice, researchers are careful to define the application of the term in use. An exploration of the definition of meditation is helpful in differentiating the two uses of the word mindfulness.

Meditation

It is argued that although many have attempted to define meditation, since there are so many different practices and theories on the subject, the definition by default is highly imprecise (Lutz et al., 2007). Nash and Newburg (2013) claim that the term meditation is:

Used to describe a host of secular, spiritual, and/or religious contemplative activities; as well as becoming a synonym for many other more mundane cognitive functions such as contemplation, reflection, concentration, and terms such as ponder, ruminate, cogitate, and deliberate. (p. 1)

Nash and Newburg (2013) argue there are two predominant definitions of meditation (similar to the term mindfulness). The first is a method or a “mental training technique.” The second refers to the enhanced state that is cultivated as a result of meditation practice, commonly known as “altered states of consciousness, which arise from the use of these methods” (p. 1).

For this study, meditation is referred to as a practice known to help cultivate emotional awareness and self-regulation by bringing intentional presence into daily moments. Meditation is a well-known tool that has been used to improve self-regulation and enhance health and well-being (Brewer et al., 2011; Desbordes et al., 2012; Duncan, & Bardacke, 2010; Goldin & Gross, 2010; Kaur & Singh, 2015; Mascaro, Rilling, Tenzin Negi, & Raison, 2012; Matousek, Dobkin, & Pruessner, 2010; Siegel, 2007; Taren et al., 2015). Mindfulness meditation techniques (Focused Attention, Open Monitoring, Mindfulness-Based Stress Reduction, Compassion/Loving Kindness, and Compassion-Based Cognitive Therapy) have been widely studied and therefore are discussed within

this literature review because of the dense amount of supporting research and empirical evidence behind them. In addition, there is some research on other meditation techniques (Transcendental Meditation, Yoga Nidra, and Zen) incorporated into this review.

Mindfulness Meditation

Mindfulness meditation practice is the art of skillfully choosing where to place attention with an attitude of loving kindness or friendliness to one's self and others as inspired by Buddhist philosophy from over 2,500 years ago (Germer, 2004).

Mindfulness is defined as a refined, systematic, attention-based strategy that focuses on the promotion of present moment awareness, in which thoughts, feelings and/or sensations that arise in the attentional field are to be acknowledged and accepted non-judgmentally. (Matousek et al., 2010, p. 14)

Mindfulness practices are techniques to help cultivate and maintain intentional awareness of thoughts, feelings, breath, choices, and behaviors. According to Garland, Tamagawa, Todd, Speca, & Carlson (2012), "mindfulness refers to the cultivation of conscious awareness in the present moment and is often fostered through the practice of meditation, in which individuals learn to observe both their internal state and their external environment" (p. 1). The focus of mindfulness practice is on experiencing conscious awareness of the present moment with a tone of non-judgment, acceptance, and patience. Dan Siegel (2007), renowned clinician, author, executive director of the Mindsight Institute, and founding co-director of the Mindful Awareness Research Center at UCLA describes mindfulness meditation as an approach to mental training via:

A series of exercises that enable the student to focus awareness on present experiences and return the attentional focus to the target of attention repeatedly as

the mind becomes distracted by other objects of attention, such as discursive thoughts or preoccupations with memory or plans for the future. (p. 259)

The Mindfulness-Based Stress Reduction (MBSR) program is the most widely used and studied mindfulness program to date. MBSR research set the precedent for other mindfulness-based research. The MBSR program was developed by Jon Kabat-Zinn in 1979 at the University of Massachusetts as a secular way to support patients who faced incurable conditions. MBSR was initially offered as a last resort when doctors had nothing else to offer. Two cornerstone techniques that make up MBSR training are: (a) Focused Attention meditation, which is the practice of continually refocusing one's attention on a chosen object (such as breath, body sensation, or feelings); and (b) Open Presence meditation, which is the practice of non-reactively paying attention to the content of experience from moment to moment as a way to realize the nature of one's cognitive and emotional patterning (Davidson & Lutz, 2008). Evidence indicates that increasing attention on breath, heartbeat, or the present moment inner experience increases self-awareness (Axness, 2012; Craig, 2009; Farb et al., 2007; Siegel, 2007). In other words, un-obscured awareness of the self along with skillful observation of the respective mind of thoughts and emotions is more accessible.

Benefits of Mindfulness Training and Meditation Practices

The contemplative wisdom tradition that is the source of mindfulness training explains that there is the mind of thoughts and emotions to be skillfully observed, and the nature of mind that is fundamentally clear-perception awareness available to be revealed as the “basic goodness” or “inherent positiveness” of existence (Trungpa, 1985). “By broadening one's perspective and becoming mindful of the ‘basic goodness’ in life, one

may come to find benefit in challenges and re-construe them as meaningful opportunities for growth and actualization” (Garland, Gaylord, Fredrickson, 2011, p. 8). In terms of the human potential to evolve, mindfulness training appears to promote resilience so one may thrive amidst the joys and struggles of living (Garland et al., 2011). Research indicates that mindfulness training can result in the cultivation of a clearer perception of self, an increase in self-regulation, and a decrease in emotional reactivity, which in turn have been shown to enhance well-being and improve quality of life (Brown, Ryan, & Creswell, 2007, 2015; Davidson et al., 2003; Davidson & Lutz, 2008; Kaur & Singh 2015; Warriner, Williams, Bardacke, & Dymond, 2012).

Over the past 4 decades a significant amount of research has investigated the clinical application of mindfulness meditation as a therapeutic technique for a multitude of psychological and physical conditions in diverse populations and settings (Carlson et al., 2001; Garland et al., 2012; Krishnakumar et al., 2015) Although mindfulness practice has gained popularity within various healthcare sectors due to its ability to reduce a vast array of symptoms, the aim of mindfulness practice is not symptom reduction, rather it is to increase one’s psychological flexibility (Warriner, Dymond, & Williams, 2013). Warriner et al., (2013) define psychological flexibility as “an individual’s capacity to make choices in accordance with their authentic values in the present moment, despite the symptoms they may be experiencing” (p. 520). This also includes refrain from the habituation of preprogrammed, reactionary responses, which can positively impact symptom reduction as an added benefit (Warriner et al., 2013). There is mounting evidence that mindfulness training and practices can have a positive impact on “the structure and neural patterns present in the brain” (Flaxman & Flook, 2017, p. 1) which in

turn enhances immune system functioning, supports successful social emotional relationships, and improves pain and stress-related disorders (Davidson et al., 2003; Kabat-Zinn, 2003; Siegel, 2007; Kabat-Zinn & Hanh 2009; Hölzel et al., 2011; Garland et al., 2012). By paying attention to one's mind, the brain changes (Siegel, 2007). Training the mind to maintain a state of mindfulness has been shown to rewire the brain's function and structure (Davidson et al., 2003; Hölzel et al., 2011), which in turn can create a cascade of benefits for the entire system. Hanson (2010), renowned mindfulness expert and researcher explains how mindfulness meditation practices impact the brain by:

(a) triggering patterns of neural pulsing that produce relaxed alertness; (b) activating positive emotion circuits, building resilience, and resistance to depression; (c) increasing serotonin, a neurotransmitter that supports mood, sleep, and digestion; (d) thickening anterior cingulate, strengthening attention and self-observation; (e) thickening the insula, strengthening internal sensing and empathy for others; (e) stimulating the parasympathetic nervous system for relaxed well-being; and, (f) strengthening the immune system, improve cardiovascular health, dampen chronic pain. (p. 1)

Dan Siegel (2007) provides a grounded understanding of how mindfulness practices change the brain by influencing neural pathways. He explains how cultivating awareness of one's mind:

Enables the individual to discern different streams of awareness. With such a new ability, the capacity to intentionally alter the direction of information flow to use the skilled focus of attention to change the mind enables us to amplify the activity of certain pathways and inhibit others. Without this refined inner view of the mind

itself, such discrimination among specific patterns of neural firing is not possible. With the acquisition of a stabilized and refined focus on the mind itself, previously undifferentiated pathways of firing become detectable and then accessible to modification. It is in this way that we can use the focus of the mind to change the function and ultimately the structure of the brain. When we achieve new skills of self-observation through mindful practice, it becomes possible to disengage automatically coupled pathways. With this new skill, the mind may create an important ability to free itself from the enslavements of prior learning.

(p. 260)

The effects mindfulness training may have on the brain have been widely studied in diverse health care settings. The positive reduction of pain and stress response associated with mindfulness-based practices with populations with critical health conditions and the subsequent physical and mental-emotional stress have led researchers to explore the possible benefits of applying mindfulness-based practices to the prenatal period.

Pregnancy is often fraught with unique physiological, mental, and emotional stress, strains, and pains.

The goal of mindfulness meditation practice is to reduce suffering by developing equanimity in the mind and body, as well as insight into the mental and physical conditions that inhibit an individual's capacity to respond pro-actively and effectively to everyday events. (Matousek et al., 2010, p 14)

In other words, since mindfulness meditation research has shown a reduction in stress response and experience of pain (Davidson & Lutz, 2008) it would make sense to investigate the potential positive implications for pregnant women.

Benefits of Mindfulness Training and Practices During Pregnancy

The biological changes of pregnancy and the enormity of the life transition requires maternal support services. While there is a need for maternal support there is also an opportunity to promote a potential increase of awareness and evolution of consciousness due to the rite of passage and dramatic neuroplasticity of pregnancy that will be further explored through the lens of synthesized coherence in the following sections. Duncan & Bardacke (2010) developed a 10-session Mindfulness-Based Childbirth and Parenting (MBCP) program (modeled after MBSR) facilitated during pregnancy with the intention to introduce a resource that has the potential to help parents counterbalance the high stress that is often associated with pregnancy and parenting by building confidence, presence, and self-regulation capacities. The goal of MBCP is to,

Help participants practice being in the present moment so that they may develop greater confidence and a deeper sense of well-being during this normative life transition. Mindfulness practice then becomes a resource for birthing, parenting, and living with awareness, kindness, connectedness, and care.” (Duncan & Bardacke, 2010, p. 192)

Duncan & Bardacke (2010) conducted a small, mixed-method, uncontrolled pilot study of 27 pregnant women who participated in the MBCP program. These researchers found significant decrease in pregnancy anxiety and increase in mindfulness in daily living, along with an increase in the ability to successfully apply non-reactivity skills. Duncan and Bardacke’s (2010) findings indicate that the training helped pregnant women “cope with salient stressful aspects of pregnancy and family life post-intervention, suggesting that teaching mindfulness during the perinatal period may expand pregnant

women’s repertoire of adaptive strategies for coping with stress” (p. 198). In addition, their study participants reported a plethora of benefits, including enhanced emotional equilibrium and inner calmness as well as improved quality of relationship with partner and baby. Similar studies have demonstrated benefits of helping women prepare for childbirth and motherhood at large by reducing the escalation of negative thinking and preprogrammed negative patterns (Chan, 2016; Hughes et al., 2009; Vieten, & Astin, 2008; Warriner et al., 2012; Werner et al., 2016). For a pregnant woman, mindfulness training and practice may preempt challenges from being perceived and reacted to as threats and lead to more proactive, adaptive coping efforts and positive affect, resulting in a reduction in stress responses and overwhelm that can be hurtful to her well-being and subsequently that of her developing prenat (Duncan & Bardacke, 2010; Duncan & Shaddix, 2015).

A meta-analysis of 17 mindfulness-based studies (Taylor, Cavanagh, & Strauss, 2016) (eight of which provided qualitative and quantitative data) examined the effectiveness of mindfulness-based interventions (MBIs) during the perinatal period. The report determined some evidence of reduction in depression, anxiety, and stress as well as improved ability to stay present, self-regulate, and greater acceptance of life (Taylor et al., 2016). Although these findings are promising, the quality of the studies was limited, therefore making it difficult to confidently claim validity of said benefits as a result of mindfulness-based practices during pregnancy. Plus, there was a lack of consistency in the interventions that were used. However, the qualitative results indicate that the women felt “more able to focus on the present moment, to regulate their negative responses to difficult situations, and to become more accepting of current experiences” (Taylor et al.,

2016, p. 17) thus suggesting noteworthy benefits of introducing mindfulness to the prenatal period.

Hall, Beattie, Lau, East, & Biro (2016) conducted a systematic review of nine studies (seven pre- and post- group interventions and two randomized controlled trials) to determine the “best available evidence regarding the effectiveness of mindfulness training during pregnancy to support perinatal mental health” (p. 62). The review included a variety of interventions aimed at cultivating mindfulness, including programs that integrated mindfulness yoga, mindfulness childbirth education, mindfulness mothering, and mindfulness stress reduction. The researchers noted that the overarching goal and commonality of the interventions was to include “psycho-education and activities that promote awareness and non-judgmental acceptance of thoughts and emotions, through breath and body awareness, as well as movement such as yoga and walking meditation” (p. 69). The reviewed studies demonstrated mixed improvements to stress, anxiety, depression, and mindful awareness. However, small sample size and other design limitations were noted as possible limitations to the validity of these results.

Despite these somewhat inconclusive findings, various researchers argue that there are substantial benefits for pregnant woman associated with mindful awareness increasing practices, including “increased sense of well-being, life satisfaction, self-esteem, and positive feelings one month after the birth” (Newman, 2016); reduction in anxiety (Bastani et al., 2005; Duncan & Bardacke, 2010; Hall et al., 2016; Vieten & Astin, 2008), reduction in negative affect (Duncan & Bardacke, 2010; Vieten & Astin, 2008; Werner et al., 2016), reduced stress (Bastani et al., 2005; Duncan & Bardacke, 2010; Hall et al., 2016; Newman, 2016); reduction of anxiety (Bastani et al., 2005).

Although mindfulness meditation has earned the focus of countless empirical investigations, it is not the only practice known to enhance consciousness available to pregnant women today. The prolific field of complementary and alternative medicine (CAM) is a testament to the popularity of other approaches that enhance spiritual, emotional, mental, and physical health and is particularly popular in childbearing populations.

Childbearing Women Most Likely to Use CAM

Research indicates that childbearing women are the leading demographic group to take advantage of complementary and alternative medicine practices and services (Frawley et al., 2014; Hall, Griffiths, & McKenna, 2011; Hall & Jolly, 2014).

Complementary and Alternative Medicine (CAM) services are commonly recognized as practices that help promote one's self-growth, wellness, and evolution. CAM refers to a group of diverse health care practices and products not traditionally associated with the medical profession or public health system, including "acupuncture; Ayurveda; biofeedback; chelation therapy; chiropractic care; energy healing therapy; special diets; folk medicine or traditional healers; guided imagery; homeopathic treatment; hypnosis; naturopathy; nonvitamin, nonmineral dietary supplements; massage; meditation; progressive relaxation; qi gong; tai chi; and yoga" (Clarke, Black, Stussman, Barnes, & Nahin, 2015, p. 19). According to National Health Statistics most recent report, 33.2% of adults age 18 and over reported use of CAM approaches in the past 12 months, "11% of U.S. adults ages 18 to 44 have used yoga in the past year and meditation was reported practiced by 8% of adults in 2012 (Clarke et al., 2015). These rates demonstrate interest and engagement in complementary practices, some of which are considered to help

evolve consciousness either in tandem with or as an alternative to traditional allopathic care (Kessler et al., 2001).

Researchers indicate that the use of CAM services during pregnancy have become increasingly attractive and popular (Adams et al., 2009; Cramer et al., 2016), with estimates of 20–60% of pregnant women today using CAM (Cramer et al., 2016). This rate is higher than what is seen in the general population. There are potentially numerous reasons for the higher use of CAM among pregnant women versus non-pregnant. One possibility is that the traditional allopathic model offers “medical supervision and technological interventions to ensure safe outcomes” (Mitchell & McClean, 2014, p. 102), but typically does not provide significant attention to the body-mind connection and information on how that impacts pregnancy and maternal/fetal/infant well-being.

One of the most popular forms of CAM is yoga. It is estimated that 20% of women in the United States practice yoga while pregnant (Adams et al., 2009). For these women there are numerous evidence-based positive, psycho-emotional implications. For example, prenatal yoga may contribute to greater optimism and improved quality of life by decreasing stress (Babbar, Parks-Savage, & Chauhan, 2012), enhanced feelings of power and well-being, self-efficacy during labor, and facilitation of the labor process, as well as empowerment and resilience (Reis & Alligood, 2014). Physical benefits include fewer pregnancy-related discomforts, reduction in anxiety and sleep disturbances, and improved birth outcomes such as higher birth weight babies and decreased risk for preterm birth (Babbar et al., 2012). The question remains, without the support of a mindfulness-based or other consciousness promoting practices, is there a shift in

consciousness inherent to pregnancy that positions a pregnant woman to evolve her consciousness?

According to Guardino et al., 2014, pregnancy in and of itself may create a disposition that promotes an increase in mindfulness. In the randomized control pilot study of 47 pregnant women who were assigned to either Mindfulness Awareness Practice classes or to a reading control (Guardino et al., 2014) found that mindfulness increased in both the control and intervention groups. In an attempt to explain this unexpected outcome the researchers postulated that the experience of being pregnant in and of itself might very well increase mindfulness. Guardino et al. (2014) explain:

This pattern could be due to measurement effects, as completing two extensive questionnaires on mindfulness may have primed participants to become more aware of their thoughts, emotions and behaviours. Yet suggestion alone seems unlikely. Another possibility is that the experience of pregnancy contributes to increases in dispositional mindfulness. (p. 345)

Based on this premise, one can presume that being pregnant can create optimal conditions for enhanced self-awareness and the subsequent attributes of an increase in consciousness which supports this study's investigation. Review of the neurobiology of pregnancy provides insight into the potential for the evolution of consciousness.

Neuroplasticity of Pregnancy

Prenatal hormone exposures are critical for priming the maternal brain for the challenges of motherhood and have implications for the mother's brain structure

and function that may last the rest of her lifetime. Just as the reciprocal nature of the parent-child relationship must be understood during the postnatal period, in order to understand the persisting influences of the intrauterine environment on neurodevelopment, the effects of the prenatal environment on both fetus and mother, as well as their reciprocal influences, must be appreciated. (Glynn & Sandman, 2011, p. 384)

There is a common cultural term, *pregnancy brain*, used to describe pregnant women's altered experience, commonly viewed as spacey and forgetful. Research validates that pregnancy brain is unique and very different from a non-pregnant brain (Barha & Galea, 2017; Brunton & Russell, 2007, 2008; Brunton, Russell, & Hirst, 2014; Glynn & Sandman, 2011; Hillerer et al., 2014; Hoekzema et al., 2017). The overall goal of this section of the literature review is to explore research that illustrates the neuroplasticity of pregnancy to understand if, and how a woman's neurobiology might promote the evolution of her consciousness.

Studies indicate that a woman's brain adapts to support both her and her baby through and beyond pregnancy (Glynn & Sandman, 2011; Hillerer et al., 2014; Hoekzema et al., 2017). Studies demonstrate changes in brain structure, function, and activity during pregnancy (Brunton & Russell, 2007, 2008; Brunton et al., 2013; Glynn & Sandman, 2011; Hillerer et al., 2014; Hoekzema et al., 2017). Research has also begun to investigate the naturally occurring changes in the brain states of pregnant women all of which will be briefly identified in relationship to the evolution of consciousness within this section.

The following questions guide this section's literature review. Not all of these questions can be answered by existent research thus reinforcing the need for this study's exploration of the possibility of a woman's consciousness evolving during pregnancy. Some of the questions that motivate this review are: "Could the biological event of pregnancy promote the possibility for a woman to increase her awareness?" "Is a pregnant woman's brain biologically inclined to be in an altered state similar to a meditative state, which naturally gives a pregnant woman greater access to higher states of consciousness given supportive conditions?"

The dramatic and fast neuroplastic changes of pregnancy for a woman come with gifts and risks. In order for a woman to best optimize the potential available within this unique neuroplastic time, it is conducive for her to experience a felt sense of support. Complementary alternative medicine (CAM) research suggests that the integration of CAM practices can be an important and essential way to support the positive manifestation of the neuroplasticity of pregnancy for a woman.

A definition of neuroplasticity is presented, then a discussion of neurobiological research that is associated with the adaptations of the pregnant brain, followed by a comparison between the naturally occurring neuroplasticity pregnancy and the self-directed neuroplasticity that occurs during meditation practices.

Definition of Neuroplasticity

Life events, experiences big and small, are known to change the brain (Kasala et al., 2014). According to Davidson & Lutz (2008), "Neuroplasticity is a term that is used to describe the brain changes that occur in response to experience. There are many different mechanisms of neuroplasticity ranging from the growth of new connections to

the creation of new neurons” (p. 174). Neuroplasticity is also referred to as brain plasticity, brain adaptation, or brain modification. In science, neuroplasticity is defined, in part, by the brain's ability to reorganize itself by forming new neural connections that create either positive or negative adaptations (Cozolino, 2002; Davidson & Lutz, 2008). Although neuroplasticity encompasses positive and negative changes, this review solely focuses on the potential for positive adaptations.

The neuroplasticity that happens during pregnancy is naturally occurring and very complex. Research demonstrates that significant neuroplasticity occurs during pregnancy and researchers have gone so far as to highlight that pregnancy is the most neuroplastic time in a woman’s life (Barha & Galea, 2017; Brunton & Russell, 2007, 2008; Brunton et al., 2014; Glynn & Sandman, 2011; Hillerer et al., 2014; Hoekzema et al., 2017). The following sections explore pregnancy neuroplasticity by first discussing (a) the role of the HPA axis in non-pregnant women, (b) hormonal changes during pregnancy, (c) neurotransmitter changes during pregnancy, (d) brain state changes during pregnancy, and (e) brain structure changes during pregnancy.

HPA Axis Function in Non-Pregnant Women

Normal HPA axis functioning is offered in order to give a foundational understanding for the significant neurological and biological changes that occur throughout pregnancy.

The normal activation of the HPA axis and Sympathetic Nervous System (SNS) is in reaction to psychological stress (Kasala et al., 2014). The HPA axis responds to a perceived stressor. This stress response activates the secretion of the neuropeptide hormone, corticotropin-releasing hormone (CRH) from the hypothalamus. CRH moves to

the anterior pituitary gland and stimulates the secretion of adrenal cortico trophic hormone (ACTH) which is released into the bloodstream and travels to the adrenal cortex. This is the normal stress hormone pathway. Then the ACTH stimulates the adrenal cortex. This causes the release of glucocorticoids, in particular cortisol, a stress hormone. The release of cortisol in response to a stressor promotes survival functions, such as increase in blood pressure and increase in blood sugar level, while simultaneously reducing reproductive, immune, and digestive system functioning. This biological stress response prepares the body for fight, flight, freeze, or collapse. The needed levels of cortisol are regulated by means of a negative feedback mechanism (stress modulator) which informs the HPA axis to stop releasing cortisol; this function is critical in stress regulation because it protects the system from going into chronic stress and over-stress response:

The HPA axis contains at least two negative feedback loops that serve to prevent hyperactivation. First, circulating endogenous glucocorticoids (like cortisol) feedback to the hypothalamus and pituitary to inhibit secretion of CRH and ACTH. Second, the hippocampus and parts of the frontal cortex also aid in negative feedback to the pituitary and hypothalamus. (Britton, 2007, pp. 22–23)

Dysregulated HPA axis functionality can result in either a hypostress or hyperstress response which can lead to psychological, emotional, and physical health issues, such as pain (Ulrich-Lai, Xie, Meij, Dolgas, Yu, & Herman, 2006), loss of memory (Pomara, Greenberg, Branford, & Doraiswamy, 2003; Wolf, 2003), depression (Pariante & Lightman, 2008), anxiety (Van den Bergh, Van Calster, Smits, Van Huffel, & Lagae, 2008), inflammation and disease (Branford, & Doraiswamy, 2003; Wolf, 2003;

Demitrack & Crofford, 1998). When the HPA axis is dysregulated due to chronic stress there is disruption to the negative feedback loop and an increase in circulatory cortisol, and impact on the sympathetic nervous systems (SNS). The following figure illustrates healthy HPA axis function in non-pregnant women.

Figure 1. Healthy, Non-pregnant HPA Axis Function

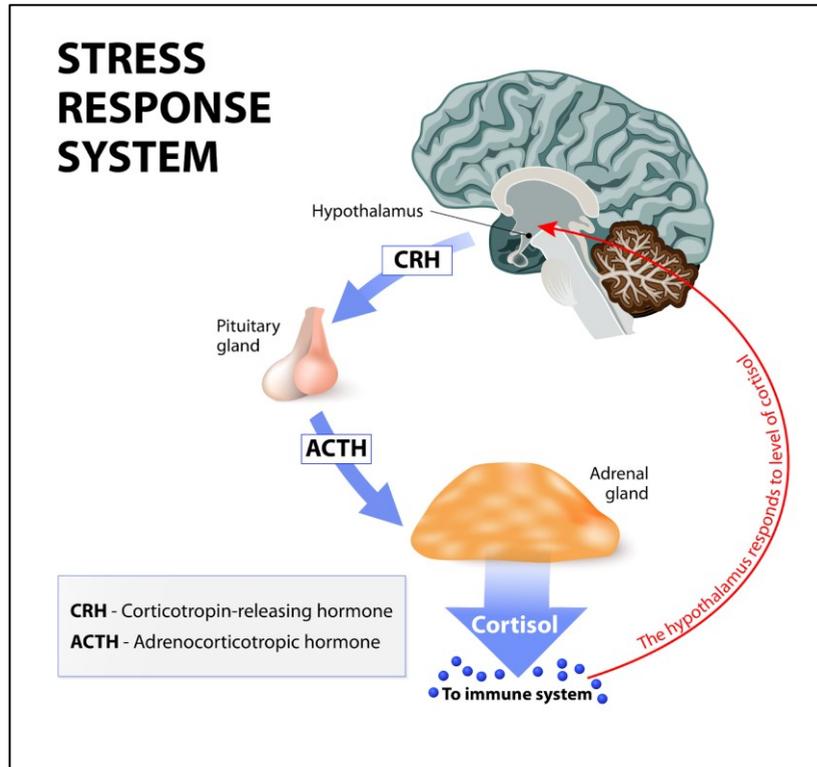


Image: (Tatta, 2016).

Nervous System Function in Non-Pregnant Women

The SNS activated by stress, results in the release of epinephrine and norepinephrine (stress hormones) into general circulation by activating the adrenal medulla. The release of epinephrine and norepinephrine into circulation also increases the proinflammatory cytokines causing an increase in macrophages which produce an overall inflammatory response in the body. Proinflammatory cytokines can access and influence

pathological-physiological pathways of the brain. Research shows a connection between proinflammatory cytokines and depression (Kasala et al., 2014; Miller, Maletic, & Raison, 2009; Raison, Capuron, & Miller, 2006).

In contrast, the parasympathetic nervous system (PSN) inhibits the proinflammatory cytokines as a result of the release of acetylcholine (a neuropeptide) and thereby decreases the systemic inflammatory response. This process helps the body rest and recover after stress.

Once proinflammatory cytokines access the brain they signal specific brain nuclei such as nucleus tractus solitarius (NTS) (which is of interest due to the notable changes that occur to this process during pregnancy as well as meditation—to be discussed) and triggers pathological-physiological pathways involved with depression. These pathways include alterations in metabolism of transmitters such as serotonin and dopamine, activation of the CRH axis in the paraventricular nucleus (PVN) of the hypothalamus with subsequent production and release of ACTH from the pituitary, and then cortisol release from the cortex of the medulla. The changes to these pathological-physiological pathways causes disruption of synaptic plasticity, normal neuronal firing, and a reduction of neurogenesis. Another result is an increase in oxidative stress due to glutamatergic (a fundamental excitatory neuropeptide) hyperactivity. Chronic oxidative stress will cause a repeated and continuous pattern of proinflammatory cytokines causing damage to the tissues of the body over an extended period of time. This description of the HPA axis shows how critical it is that the neuroplasticity of pregnancy includes a reduction in HPA axis sensitivity. The following section will describe how an increase in acetylcholine and

the fortification of a pregnant woman's PSN play a critical role in lowering her biological response to stress while offering protection of her health and her prenat's health.

HPA Axis Function and Hormonal Shifts in Healthy Pregnant Women

The natural biology of pregnancy adapts to support and protect a pregnant woman by lessening her biological sensitivity to stress and thereby reducing her stress response. The HPA axis function dramatically shifts from its normal non-pregnant functionality (described above) during pregnancy as a result of the increased production of estrogen and progesterone. The neuroplastic changes to the maternal prenatal HPA axis function are fundamental in supporting a pregnant woman's stress management (Glynn & Sandman, 2011; Sandman et al., 2011). Dr. Brizendine (2006) elucidated, "Progesterone spikes from ten to a hundred times its normal level during the first two to four months of pregnancy, and the brain becomes marinated in this hormone, whose sedating effects are similar to those of the drug valium" (p. 97).

The HPA axis stress response is inhibited during pregnancy; that is a key factor in increasing a pregnant woman's resiliency when faced with stress (Brunton & Russel, 2008; Glynn & Sandman, 2011). Without this biological protective transformation, the normal HPA axis sensitivity to stressors would increase a pregnant woman's vulnerability to dysfunction, disease, and potentially loss of baby (Glynn & Sandman, 2011).

During pregnancy there is the well-known and largely discussed increase in estrogen and progesterone. These two primarily create a cascade of other hormonal changes that occur uniquely during gestation. (A more in-depth explanation of the cascade of hormonal changes that occur during pregnancy and the effect these alterations

have on neuroplasticity is discussed in the following section.) As estrogen levels increase in response to fertilization, an increase in progesterone follows. The simultaneous increase of estrogen and progesterone activates two enzymes that transform some of the excess progesterone into allopregnanolone (Brunton & Russel, 2008). Allopregnanolone acts as a stress response inhibitor and plays an important role during pregnancy in that it has anxiolytic (inhibits anxiety) and antidepressant actions (as indicated by the research done with pregnant animals) (Brunton & Russell, 2008; Hillerer et al., 2014).

Allopregnanolone decreases HPA axis activity, which inhibits a pregnant woman's typical physiological and psychological response to stress (as demonstrated through research in both humans and animals) (Brunton & Russell, 2008; Hillerer et al., 2014). The above-mentioned typical HPA axis stress response process in a nonpregnant woman is reduced during pregnancy, which lessens production of glucocorticoids, such as cortisol.

The suppressed HPA axis response to stress during pregnancy is also attributed to the increased production of endogenous opioids. The endogenous opioids now affecting the hypothalamus from the NTS will fail to evoke noradrenaline release from the paraventricular nuclei (PVN) within the hypothalamus. In other words, the natural uplifting neuropeptides in the body (that increase confidence and self-esteem, elevate mood, and provide pain relief) inhibit the hypothalamic stress response and thereby increase a pregnant woman's capacity to respond to stress. The inhibitory opioid mechanism in the hypothalamus created by allopregnanolone prevents activation of the CRH neurons (the cortisol releasing stress hormones). This creates a decrease in cortisol response to various stressors (Hillerer et al., 2014). This entire process inhibits HPA axis

stress response, which increases a pregnant woman's resiliency when faced with stress (Brunton & Russel, 2008; Glynn & Sandman, 2011).

During pregnancy, allopregnanolone stimulates the nucleus tractus solitarius (NTS) in the brain stem to produce greater amounts of endogenous opioids (naturally occurring opioids in the body that are uplifting in nature), such as endorphins and enkephalins. These endogenous opioids then act as neurotransmitters and are picked up by neurons in the NTS that connect directly to the hypothalamus (Brunton & Russel, 2008), which is a significant part of the HPA axis. In other words, the overproduction of internal opioids (feel good hormones) travel to the hypothalamus which has a direct inhibitory effect on stress response. Decreased reactivity in the hypothalamus and reduction in the production of CRH illustrates the mitigated impact on stress response in pregnant women. According to Hillerer et al., 2014:

There is growing evidence that pregnancy (and lactation) are associated with a variety of alterations in neural plasticity, including adult neurogenesis, functional and structural synaptic plasticity, and dendritic remodeling in different brain regions. All of the mentioned changes are not only believed to be a prerequisite for the proper fetal and neonatal development, but moreover to be crucial for the physiological and mental health of the mother. (p. 1)

Pregnant brain adaptations are required for supportive maternal behavior and responses to her baby post birth (Glynn & Sandman, 2011; Hoekzema et al., 2017). Brizendine, MD (2006), explains, "These (hormonal) changes result in a motivated, highly attentive, and aggressively protective brain that forces the new mother to alter her responses and priorities in life" (p. 97).

Another critical component in the complex interaction between the HPA-axis and the reproductive system in pregnant women is the dynamic between the significant increase in circulating CRH in the bloodstream (stress hormone) and the simultaneous neutralization of CRH by a CRH binding protein that the liver produces. CRH is produced by the ovaries, endometrial lining, and the placenta. Later in pregnancy, to help catalyze labor and birth, there is a neutralization of CRH which typically diminishes by approximately 60% at 35 weeks gestation and leads to a gradual rise in circulating CRH (Chrousos, 1999).

To further highlight the intelligence behind the biological changes of pregnancy and how these changes naturally protect a woman and her prelate, it is helpful to discuss the potential risks associated with disruption of the process. Research has shown a correlation between prenatal development and later life disease when a fetus is overexposed to glucocorticoids, specifically cortisol (Erhuma, 2012; Sandman et al., 2011). While there is a dramatic rise in cortisol as pregnancy progresses, the fetus is protected from maternal cortisol by the active placental enzyme 11 β -hydroxysteroid dehydrogenase type 2, which binds the cortisol, making it inactive (Duthie & Reynolds, 2013). This enzyme converts active cortisol into inactive cortisol, called cortisone. However, if a woman undergoes chronic stress causing maternal HPA axis dysregulation, then both she and her baby can be exposed to too much cortisol. Dr. Brizendine (2006) notes, "Fight or flight chemicals, such as cortisol, are produced in large quantities by the fetus and placenta" (p. 99), making it important to support the pregnant body's natural inclination to regulate and protect the pregnant woman and prelate from excess cortisol.

Fetal studies done with animals indicate that this often results in shorter gestation and lower birth weight as well as long-term repercussions, such as the programming of the HPA-axis to react to stress in ways linked to mental illness as well as neurodevelopmental issues and cardiometabolic disease (Brunton & Russell, 2008). In addition, this impacts the pregnant mother by making her more vulnerable to mental-emotional challenges and postpartum depression (Osborne & Monk, 2013; Sandman et al., 2011).

There is an incremental rise of cortisol as gestation progresses with a peak in available cortisol soon before labor. Pregnant women have three times the amount of cortisol as compared to non-pregnant women when researchers included both the free circulating (available) and bound (not available) cortisol (Jung et al., 2011). There are two notable ways that the biology of pregnancy helps protect a mother and fetus from exposure to too much cortisol. One safety pathway is by way of the liver that produces a protein called cortisol-binding-globulin (CBG) that binds cortisol, making it inactive and therefore neutral to both mother and fetus. Another safety pathway is by way of the placenta, which metabolizes approximately 80–90% of maternal cortisol in order to protect the fetus from unhealthy amounts. However, a fetus is at risk when the protection that the placenta provides is weakened as a result of a pregnant mother experiencing chronic stress or acute stress that cause significant levels of anxiety, infection, and inflammation (Duthie & Reynolds, 2013). Feeling nurtured and supported during pregnancy acts as a protective factor in helping a pregnant woman regulate her HPA axis. Research indicates that dysregulation of the pregnant HPA axis puts a woman and her prenatate at risk (Duthie & Reynolds, 2013).

Figure 3. Healthy Pregnancy HPA Axis Function

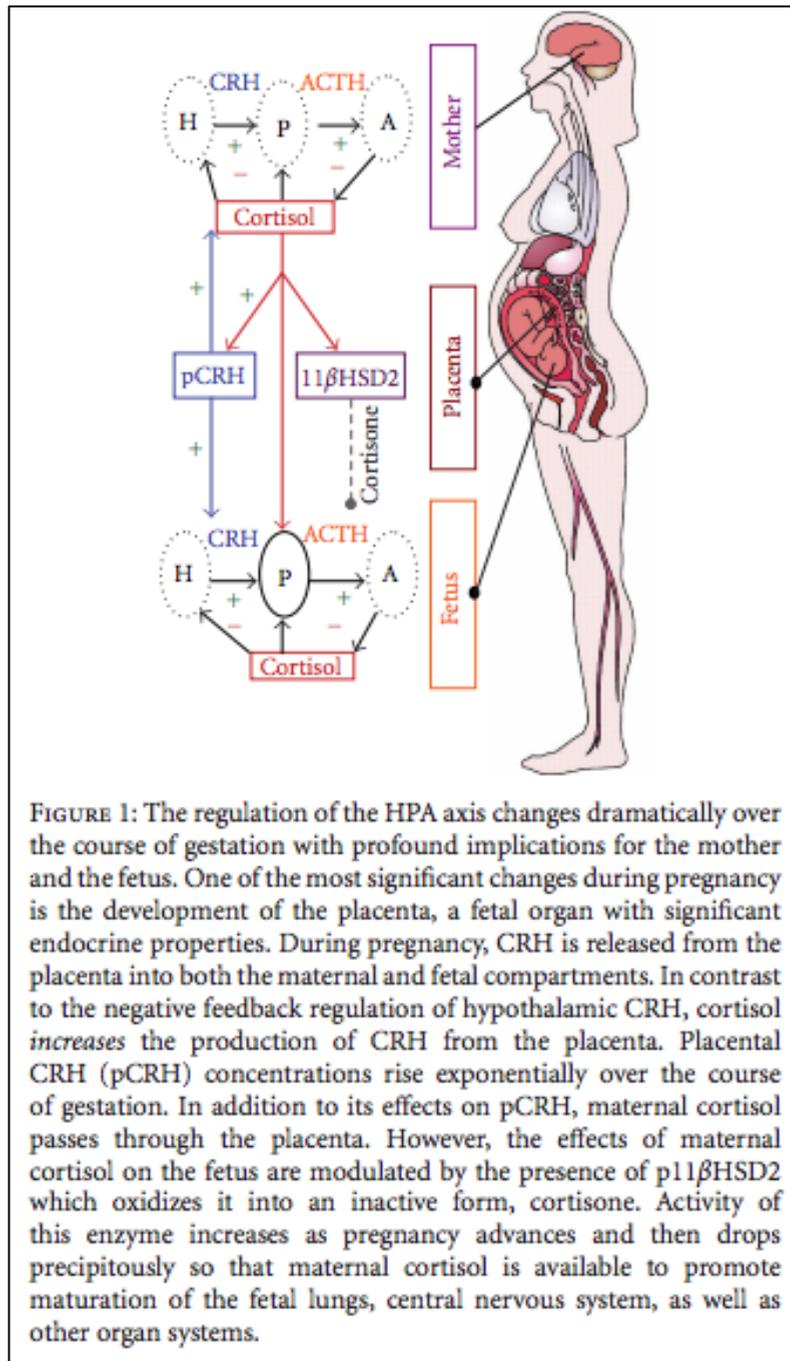


FIGURE 1: The regulation of the HPA axis changes dramatically over the course of gestation with profound implications for the mother and the fetus. One of the most significant changes during pregnancy is the development of the placenta, a fetal organ with significant endocrine properties. During pregnancy, CRH is released from the placenta into both the maternal and fetal compartments. In contrast to the negative feedback regulation of hypothalamic CRH, cortisol *increases* the production of CRH from the placenta. Placental CRH (pCRH) concentrations rise exponentially over the course of gestation. In addition to its effects on pCRH, maternal cortisol passes through the placenta. However, the effects of maternal cortisol on the fetus are modulated by the presence of p11βHSD2 which oxidizes it into an inactive form, cortisone. Activity of this enzyme increases as pregnancy advances and then drops precipitously so that maternal cortisol is available to promote maturation of the fetal lungs, central nervous system, as well as other organ systems.

Image: (Sandman et al. 2011, p. 2)

Figure 4. Healthy Pregnancy HPA Axis Function

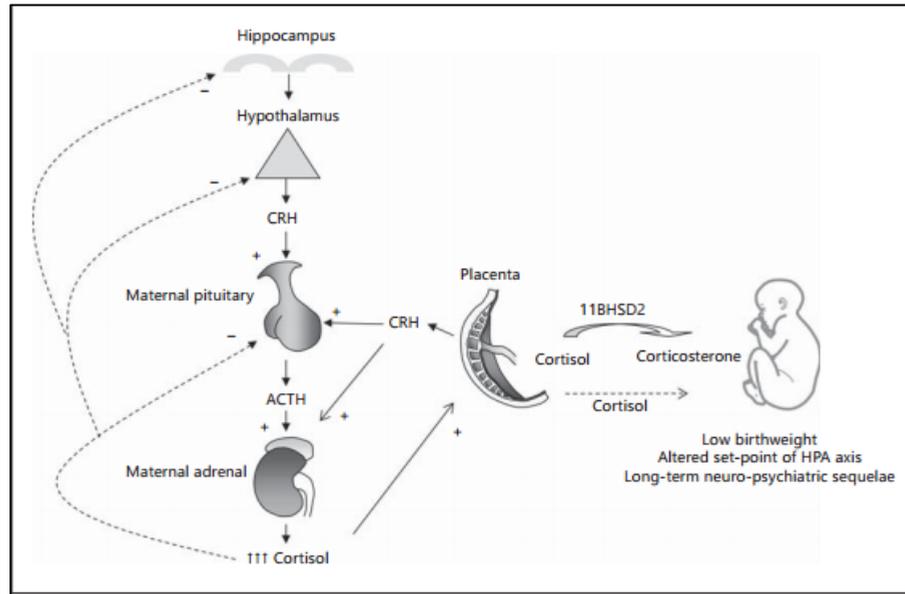


Image: (Duthie & Reynolds, 2013)

Figure 5. Dysregulated Pregnant HPA Axis Function

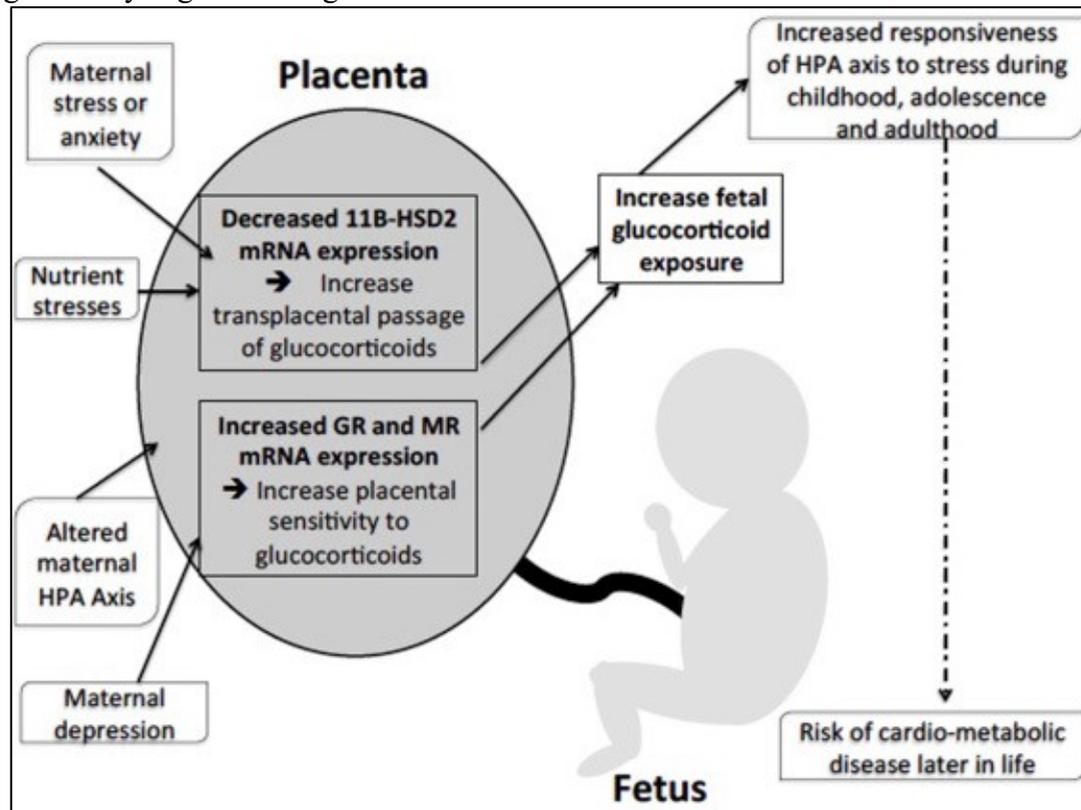


Image: (Stirrat & Reynolds, 2016)

Duncan, & Bardacke (2010) studied the effect of mindfulness and stress reduction on pregnancy. They explain the connection between threat perception and stress reactivity as compared to challenge perception and positive coping:

According to Stress and Coping Theory (Lazarus and Folkman, 1984), not everyone has the same experience when faced with a stressful event. Some individuals make appraisals of an event as threatening or harmful while others may appraise the same event as a challenge. The stress appraisal of an event, such as the transition to parenthood, prompts the coping process and produces affective responses that are associated with physiological reactivity. Threat appraisals tend to lead to negative affect, and exaggerated physiological stress reactivity (hypothalamic-pituitary-adrenal axis and autonomic nervous system reactivity) (Maier et al., 2003) and are linked to patterns of chronic physiological arousal that are in turn related with poor health. In contrast, if the same event is appraised as a challenge instead of a threat, the individual may experience more positive affect (e.g., excitement) and thus engage in more adaptive coping. (Duncan & Bardacke, 2010, p. 191)

Research indicates that a pregnant woman's neurobiology naturally supports and protects her and her prenat by diminishing her stress response. There is mounting evidence indicating that there are negative implications regarding excess prenatal exposure to cortisol due to maternal stress on her fetus, thus emphasizing the importance of a pregnant mother's natural biological protective decrease in cortisol levels and desensitization of her HPA axis (Sandman et al., 2011).

Hormonal Changes

This section reveals how the significant hormonal changes that occur during pregnancy promote the brain plasticity of a pregnant woman. The decrease in HPA axis activity, immune function changes by way of the reduction of the inflammatory cascade, decrease in stress response, increase in serotonin, and the supportive sequence of biological changes that occur as a result of the increase of endogenous opioids will be reviewed in this section.

According to Donegan (2015) “during pregnancy and in the postpartum period, the maternal and infant brains undergo incredible neural structural changes” (p. 62). She continues:

With all the focus on self-directed neuroplasticity, we have to consider that we may be missing out on a nine-month window of opportunity for moms to take advantage of this plasticity to bring about positive changes—not just for mom’s mental, physical and emotional health but for her baby’s health, too. (p. 62)

The following describes the neurobiological changes in more detail.

Supportive Hormonal Changes During Pregnancy

Pregnancy is recognized as a physically and emotionally stressful event for a woman. At the same time, the significant biological changes that occur during pregnancy appear to help a woman deal with stress by producing hormones that soften/inhibit her response to stress. The contributing hormones are: serotonin, progesterone, allopregnanolone, and oxytocin. These hormonal and neural circuitry changes seem to be the way nature protects the health of both the development of mother and fetus. The significant hormonal changes a woman experiences during pregnancy alter the function

of her brain and account for reduced stress reactivity and an increase in well-being (Glynn & Sandman, 2011; Hillerer et al., 2014; Hoekzema et al., 2017). The following is a brief summary of the hormonal changes. It is not within the scope of this paper to go into the complete scientific complexity behind the hormonal changes that occur during pregnancy.

The dramatic change of hormones during pregnancy is what initiates the brain adaptations for a pregnant woman (Barha & Galea, 2017; Brunton & Russell, 2007, 2008; Brunton et al., 2013; Glynn & Sandman, 2011; Hillerer et al., 2014; Hoekzema et al., 2017). Conception (fertilization) is the catalyst for the significant increase of estrogen and progesterone and the subsequent cascade of hormonal changes that are fundamental to sustaining pregnancy for both mother and prenat. In addition to the hormones being produced by the woman's body, the placenta produces key hormones such as estrogen (estriol) to support the pregnant woman. There is evidence that nature promotes mutual, biological cooperation between pregnant mother, fetus, and placenta (Glynn & Sandman, 2011). Researchers suggest that both the biology of the fetus and placenta otherwise known as the "fetal-placental unit" (Hillerer et al., 2014) are responsible for the maternal neural implications of pregnancy. Evidence indicates that the placental release of hormones to the pregnant woman promote brain neuroplasticity and support the health of the pregnant mother and healthy development of baby in utero (Glynn & Sandman, 2011). Furthermore, studies show a correlation between pregnancy hormonal changes, and an increase in maternal behaviors that nurture and/or protect baby (Brunton & Russel, 2008; Hoekzema et al., 2017).

The following is a brief description of pertinent hormones during pregnancy and the relevant changes that occur. The catalyst for all of these hormonal changes is the simultaneous increase in estrogen and progesterone.

Adrenocorticotrophic hormone (ACTH). ACTH decreases during pregnancy. It is an important component of the HPA axis and is produced in response to biological stress along with CRH released in the hypothalamus. ACTH signals the production and release of cortisol from the cortex of the adrenal gland. The reduction of ACTH during pregnancy helps to lessen a pregnant woman's biological response to stress.

Allopregnanolone (ALLO). ALLO increases during pregnancy. It is a neurosteroid that starts to be produced by the corpus luteum in sync with the high increase of human chorionic gonadotropin (HCG) in response to conception. It is a metabolite of progesterone as mentioned previously. ALLO has neurogenic, neuroprotective, antidepressant, and anxiolytic effects. In other words, this important derivative or metabolite of progesterone helps to calm the stress response.

Brain-derived neurotrophic factor (BDNF). BDNF decreases during pregnancy. A reason why BDNF decreases in a pregnant woman's brain might be because this neurotrophic factor is directed and used to make the placenta. Researchers now recognize that the brain continues to reorganize itself by forming new neural connections throughout life. Neurotrophins are chemicals that promote neuroplasticity and help to stimulate and control neurogenesis, synaptogenesis (create dendrites and new neurons), and helps cognitive function. Environmental enrichment increases BDNF. Lack of BDNF has been used as a biomarker for prenatal and postpartum depression. In the brain, BDNF is active in the hippocampus, cortex, and forebrain—areas vital to learning,

memory, and higher thinking. While there is a natural decrease in BDNF in a pregnant brain there is research that shows an increase in maternal prenatal BDNF related to exercise. Based on prenatal exercise, yoga, and meditation research it seems that pregnant women can increase their BDNF levels with the use of these healthy activities which may help prevent postpartum depression.

Corticotropin releasing hormone (CRH). CRH decreases during pregnancy.

The way CRH functions is that it is secreted by the paraventricular nucleus (PVN) of the hypothalamus in response to stress. Studies of non-pregnant people show that an increase in CRH is correlated with depression. During pregnancy, CRH is synthesized and released in the placenta to support fetal development. Researchers have determined that CRH is a marker that determines length of gestation and timing of labor. In late pregnancy, the rapid increase of circulating CRH from the placenta into a pregnant woman's body may act as a trigger for labor. It makes sense that there is a natural decrease in the release of CRH in pregnancy to help reduce a pregnant woman's stress response and possibly to preterm labor as a result of circulating CRH too soon.

Cortisol. Cortisol increases during pregnancy. Cortisol is the main glucocorticoid and stress hormone. Cortisol is produced by the adrenal glands. The complexities of cortisol and the HPA-axis are discussed above. A substantial amount of the increased cortisol is converted into inactive cortisol called cortisone until labor. It is the most important human glucocorticoid because it regulates homeostatic functions, cardiovascular, and other functions.

Dehydroepiandrosterone (DHEA). DHEA increases during pregnancy. DHEA is a steroid hormone that is produced naturally in the body. It is a hormone with highest

levels during infancy that continue to decrease with age. DHEA is changed by the body into both estrogen and testosterone, both of which contribute to a woman's fertility, including the quality of her eggs. DHEA is produced in the adrenal gland, gonads, and brain. DHEA enhances emotional regulation, memory, and the connections between the amygdala and hippocampus (memory center). DHEA helps to reduce stress response.

Estrogen. Estrogen increases during pregnancy. Estrogen is a group of female sex hormones of similar chemical composition, including estrone, estradiol, and estriol. Estrogen helps maintain pregnancy and stimulates the vital process of fetal maturation. Estrogen controls lactation so that while there is an increase in prolactin and milk production in a woman's breasts, she does not lactate while pregnant.

Oxytocin. Oxytocin increases during pregnancy. Oxytocin has become popularly known as the "love" hormone. It is both a hormone and neurotransmitter. Research indicates that oxytocin is related to an increased experience of feeling trust when a person feels safe, along with empathy, love and attraction, a sense of security within one's self and/or with another, and bonding and connection with another. Oxytocin increases throughout pregnancy and is mostly stored in a pregnant woman's body until she is near labor and birth. Oxytocin contributes to reduced HPA axis response during pregnancy. Natural dilation of a woman's cervix releases oxytocin to support labor.

Progesterone. Progesterone increases during pregnancy. Progesterone is a neurosteroid and progestogen sex hormone. Progesterone is typically produced by the corpus luteum (in the ovaries). During pregnancy, progesterone is produced in two ways, first in the corpus luteum and then from the placenta beginning at 10 weeks gestation. Progesterone supports implantation and gestation, and helps the uterus grow without

tearing. An increase in progesterone helps a woman's body maintain pregnancy and helps prevent miscarriage. Pregnant women are often told to make sure to keep their stress low, and that is because the body's reaction to stress is to release stress hormones (active cortisol, norepinephrine, epinephrine) which lower progesterone. When progesterone gets too low a woman's body might not be able to hold the pregnancy and she may miscarry.

Prolactin. Prolactin increases during pregnancy. Prolactin is commonly thought to serve the purpose of creating breast milk, and it does a lot more. Prolactin is responsible for increasing the following: immune tolerance of the fetus during pregnancy, breast milk, maternal nurturing, fetal brain development, fetal lung development, and maternal and fetal neurogenesis. Prolactin is found to be secreted from the uterus, placenta, immune cells, brain, breasts, prostate, skin, and fat tissue. Prolactin receptors are present in the pregnant woman's breasts, ovaries, pituitary glands, heart, lung, thymus, spleen, liver, pancreas, kidney, adrenal gland, uterus, skeletal muscle, skin, and areas of the brain. Prolactin stimulates the growth, development, and metabolism of the fetus and stimulates the formation of myelin coatings on axons in the brain. Prolactin is also responsible for reducing HPA axis response activity and at the same time increases neurogenesis which can promote neuroplasticity.

Figure 6. Hormonal Changes During Pregnancy.

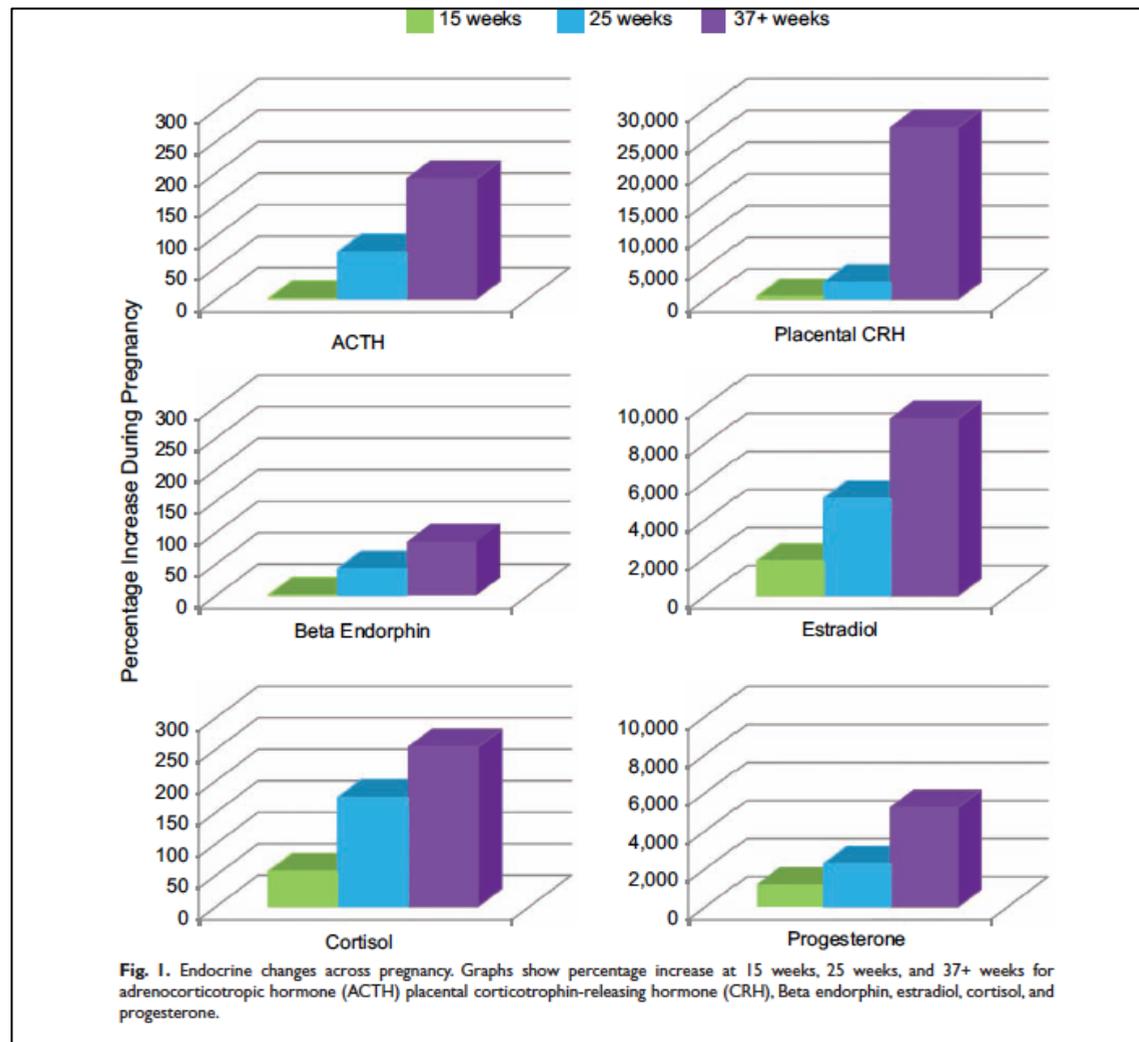


Image: (Glynn & Sandman 2011, p. 386)

Figure 7. HPA Axis and Role of Placenta During Pregnancy.

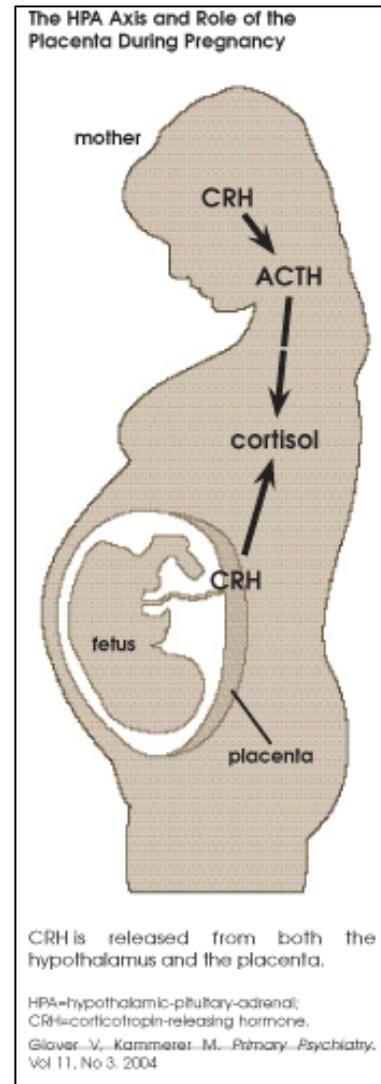


Image: Glover & Kammerer (2004)

Figure 8. Interdependent Maternal and Fetal HPA Axis.

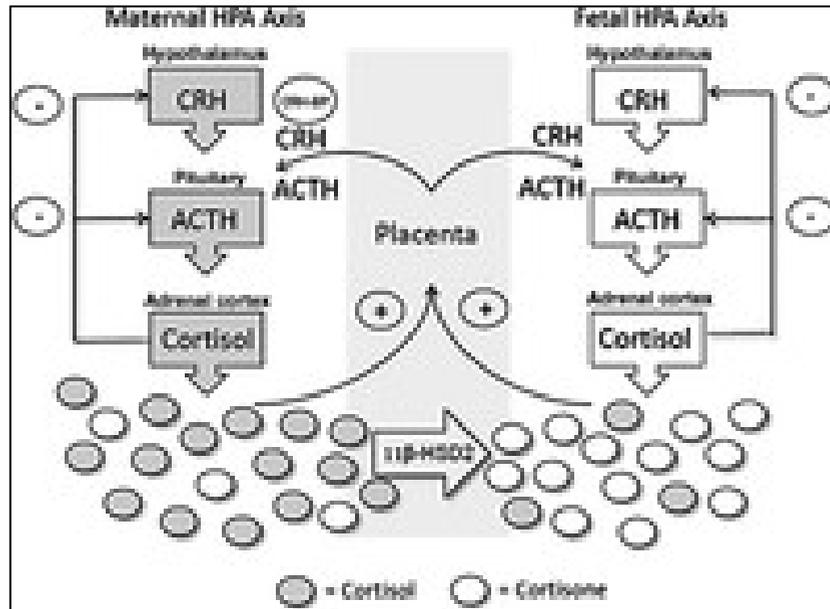


Image: (La Marca-Ghaemmaghami & Ehlert, 2015).

Summary of Hormonal Changes

The natural neuroplasticity of healthy pregnancy and respective biological changes during pregnancy provide a critical reduction in a pregnant woman's stress response and increase her resilience to psychological and physical stressors. The typical brain adaptations that occur during pregnancy also help a pregnant woman to feel positive about herself, her pregnancy, and her fetus. These neuroplastic changes all support her prenaté's growth and development as well as the development of nurturing feelings and bonding impulses in the woman. Furthermore, the positive neuroplasticity of pregnancy helps reduce a pregnant woman's immune response to inflammation which helps protect her from physical disease.

Neurotransmitter/Neuropeptide Changes

A woman's neurotransmitters (also known as neuropeptides) change during pregnancy. Neurotransmitters are a type of chemical that relays brain signals from one

area of the brain to another. According to Bowyer (2016), “neurons communicate with other neurons by releasing one of over 50 different types of neurotransmitters in the brain, some of which are excitatory (stimulate the brain) and some are inhibitory (calm the brain)” (p. 1). Research suggests that there is an incremental increase of serotonin during pregnancy and this is partially responsible for a pregnant woman’s elated mood and sense of confidence (Brunton & Russell, 2008). Heightened estrogen levels increase dopamine in the pregnant woman’s brain, which enhances feel good sensations. An increase of enkephalins and endorphins in pregnancy also generates a more relaxed state of being.

The maternal biological changes inherent to pregnancy seem to be designed to protect mother and prenatate by increasing the pregnant woman’s capacity to deal with stressors. The significance in reduction of a woman’s stress response during pregnancy is due to the following three factors: (a) decrease in HPA axis activity, (b) increase in endogenous opioids and neuroactive steroids, and (c) increase in GABA. The following section presents an overview of how a woman’s neurotransmitters (also known as neuropeptides) dramatically change during pregnancy, which will be followed by a review of the significance of similar neurotransmitter changes that have been documented as a result of meditation practices and how this relates to evolvment of consciousness. The pregnant brain is more sensitive to the positive neuropeptides and less sensitive to the stress neuropeptides. These neuropeptides changes in the pregnant brain reduce the stress response mechanisms and increase her resilience. The neurotransmitters that increase, do so in the amount and effectiveness.

Acetylcholine. There is an increase of acetylcholine during pregnancy. This neurotransmitter helps to improve memory and mental alertness. The increase of acetylcholine decreases the potential for systemic inflammatory response which helps prevent health conditions and disease. This neurotransmitter helps the body rest and recover after stress which is critical for health pregnancy.

Endorphins and enkephalins. These are two endogenous opioids that increase during pregnancy. Endorphins and enkephalins are naturally occurring opioids that are produced within the body. These neurotransmitters create feelings of pleasure that range from a sense of well-being to bliss. Laughter, dance, exercise, and sex are activities that cause a release of endorphins. In addition to enhancing feel good sensations and states of being, endorphins and enkephalins play a central role in reducing physical pain and providing natural pain relief. Naturally occurring boosts in pain relieving neurotransmitters during pregnancy are necessary to counteract the major structural changes that a woman's body undergoes, including the dramatic shifting of her bones and the significant changes in her muscles, tendons, and organs to make space for her growing fetus in utero. Endorphins and enkephalins provide relief from stress, depression, and anxiety. They help a person relax and at the same time counteract fatigue. These endogenous opioids help increase motivation, optimism, and self-esteem.

Dopamine. Dopamine increases during pregnancy. This increase is related to the increase in progesterone and is also cultivated by exercise and feelings of gratitude. Dopamine is a naturally occurring neurotransmitter in our brains associated with pleasure and reward. Dopamine is key in the feeling of accomplishment a person experiences when reaching a goal. Depression, fatigue, apathy, and hopelessness can be an indication

of low dopamine levels. Another primary function of dopamine is to inhibit norepinephrine (stress hormone). Dopamine is in the catecholamine family. Catecholamines are the neurotransmitters in the nervous system produced by the adrenal glands.

Gamma-aminobutyric acid (GABA). There is an increase in GABA during pregnancy. During pregnancy, allopregnanolone increases the amount of GABA sensitivity which inhibits a pregnant woman's typical physiological and psychological response to stress. Estrogen and oxytocin together help GABA to reduce overall excitability in the central nervous system (CNS) and therefore dampens the effect of stress on the CNS. GABA is very supportive because it is the main inhibitory neurotransmitter that modulates cortical excitatory activity, emotional regulation, and neural plasticity. GABA is the most potent endogenous sedative and is critical for relaxation. GABA causes a calming response post-stress.

Glutamate. Glutamate, overall decreases during pregnancy. However, glutamate does increase in certain brain areas in order to stimulate an increase in the production of GABA. Glutamate plays a very important role because it is the main excitatory neurotransmitter of the brain and it promotes synaptic plasticity. Glutamate also supports cognitive function. Glutamate and GABA help promote highly synchronous functional brain activity and, therefore, contribute to directing information flow in the brain.

Melatonin. Melatonin increases during pregnancy. It is an endogenous antioxidant. Melatonin also entrains the body's circadian rhythms, including the sleep-wake cycle, blood pressure regulation, and seasonal, physiological changes. This neurotransmitter helps protect the DNA inside the nucleus and mitochondria. Serotonin is

acetylated and then methylated to release melatonin within the pineal gland. During pregnancy, melatonin helps reduce the sensitivity of the immune system so that a pregnant mother's body does not perceive and react to the embryo as an invasive substance, such as mistaking it for a tumor.

Norepinephrine (circulating). Circulating norepinephrine (stress hormone) decreases during pregnancy, which supports the parasympathetic response. This neurotransmitter is a part of the catecholamine family.

Serotonin. Serotonin increases during pregnancy as a result of an increase in estrogen. Serotonin contributes to happiness and well-being, regulates mood, appetite, sleep, and dreaming. Nearly every one of the 40 million brain cells we have are influenced either directly or indirectly by serotonin. Serotonin is in the monoamine category, which is considered to be the group of neurotransmitters that is involved in arousal, emotion, and cognition.

Hormones are a catalyst for the adaptation of the pregnant brain structure and function. The following section reviews the neuroplastic changes within brain structure and function.

Brain Structure and Function Changes

In this section the limited literature on brain structure changes during pregnancy will be reviewed, beginning with the meaning of the maternal brain structure adaptations, followed by a more in-depth examination of these structural changes.

Limited research has investigated the potential influence pregnancy has on the structure of a woman's brain and the subsequent impact her adapted brain structure has on her physiologically and psychologically during and beyond her pregnancy (Hoekzema

et al., 2017). However, the few studies published indicate that a profound change in maternal brain architecture occurs (Hillerer et al., 2014; Hoekzema et al., 2017). The literature suggests that the meaning and purpose of these changes for a mother and her relationship to her fetus are significant. The limited, yet rigorous, research indicates that the undeniable structural changes and respective synaptic pruning in the pregnant brain promote the experience and expression of maternal-fetal bonding and maternal behaviors beginning during pregnancy and continuing post-birth (Hoekzema et al., 2017).

Hoekzema et al. (2017) speculate that the “female brain undergoes a further maturation or specialization of the neural network subserving social cognition during pregnancy” (p. 294). Other researchers suggest that the dendritic plasticity that occurs in these particular brain regions may contribute to maternal mental health (Hillerer et al., 2014).

Hoekzema et al. (2017) discovered an overlap with the brain sections affected by pregnancy and the neural substrates involved in the processes of theory of mind.

Professor Uta Firth explains that Theory of Mind is not an actual research theory, rather a term used to describe an ability most human beings have to generate a theory (or good guess) of what is going in the mind of another person (SeriousScience.org, 2016).

MacKinnon and associates have proposed that theory of mind mediates the link between oxytocin and maternal interactive behavior (2014). According to MacKinnon et al. (2014):

Theory of mind requires the cognitive ability to attribute mental states to one’s self, and to infer the mental states of others. The ability to interpret social cues is of particular importance to respond effectively to an infant’s needs, as a mother

must be able to determine those needs based on subtle cues such as facial or non-verbal signals. (p.53).

The perception of another person's state of being helps a person to attune and respond appropriately to what that person is thinking and feeling. The areas of the brain associated with the capacity to accurately read what is going with another person are the same areas of the brain that are refined during pregnancy. Researchers who studied the pregnant brain have made sense of the overlap in brain regions (prenatal brain structure changes and theory of mind processing) by explaining that a healthy pregnant brain evolves to support a mother to be able to better perceive her baby's expression of his/her needs and nonverbal cues, as well as to support a mother's bond with her baby post birth (Hoekzema, et al., 2017).

Hoekzema, et al., 2017 articulate this process in scientific detail as follows:

The theory-of-mind system is considered a core component of the human parental brain, and a mother's ability to comment accurately on her infant's mental states and processes has been shown to be important for secure parent–infant attachment and for the development of the child's own social cognitive functions. Gestational alterations in brain structures subserving social processes can be conceived to confer an adaptive advantage for motherhood in various ways: for instance, by facilitating a mother's ability to recognize the needs of her highly altricial child, to decode social stimuli that may signal a potential threat, or to promote mother–infant bonding. (p. 294).

As demonstrated, the restructuring of the brain during pregnancy benefits a woman's transition into motherhood and is fundamental in facilitating aspects of maternal behavior (Hoekzema, et al., 2017).

Next is a brief review of the limited, yet rigorous, research which shows that, in addition to functional changes, there are prominent structural adaptations within a woman's brain during pregnancy that seem to occur in support of a woman's transition into motherhood. The literature suggests that the intense hormonal changes that occur during pregnancy likely contribute to these pregnant brain modifications (Hoekzema et al., 2017).

A common misperception is that a brain with greater Grey Matter Volume (GMV) equals better function and intelligence. Yet the literature shows otherwise and that a decrease in grey matter could mean more efficient communication between brain regions due to the pruning of cells and synapses as explained in the field of biology called ontogeny (Barha, Galea, Nagamatsu, Erickson, & Liu-Ambrose, 2017). Research shows that the pregnant brain decreases in GMV in specific brain regions, along with respective synaptic pruning (Hoekzema et al., 2017). The other time in life that shows significant reduction of GMV is during adolescence. Synaptic pruning in adolescence is generally regarded as an "essential process of fine-tuning connections into functional networks and is thought to represent a refinement and specialization of brain circuitry, which is critical for healthy cognitive, emotional and social development" (Hoekzema, et al., 2017, p 294). Research shows that the neurobiological alterations of pregnancy that specifically modify areas of the cerebral cortex involved in social processes may serve the purpose of supporting a woman's transition to becoming a mother (Hoekzema et al., 2017).

The pregnant brain is modified in a symmetrical pattern of remarkable GMV reductions mostly to the “anterior and posterior cortical midline and specific sections of the bilateral lateral prefrontal and temporal cortex” (Hoekzema, 2017, p. 293). There is long lasting reduction of GMV of several brain structures involved in social cognition in first time human mothers, such as the hypothalamus, amygdala, nucleus accumbens, and several cortical areas such as: superior temporal sulcus, inferior frontal cortex, and fusiform (Hoekzema et al., 2017). The changes in these areas seem to alter brain function in ways that are supportive to a new mother and her baby. Hoekzema et al. (2017) demonstrate that the pronounced GMV reductions are located in the same brain regions that show higher neural activity in women’s brains during a fMRI task that demonstrated strong maternal response to their babies 2.5 months after birth. GMV changes during pregnancy predict qualities of postpartum mother-to-baby attachment. These researchers explained that all of the women could have been correctly classified as having been pregnant or not between the MRI sessions on the basis of the GMV changes in the brain (Hoekzema et al., 2017).

Hoekzema et al.’s (2017) analysis suggested that GMV changes of pregnancy significantly predict the quality of mother-to-infant attachment and the absence of hostility from mother to newborn in the postpartum period. They noted the same brain area that lost GMV is the area of the brain that had strongest neural activity postpartum when mothers respond to their baby (Hoekzema et al., 2017).

GMV changes during a woman’s transition into motherhood have been noted to last as long as 2 years post-pregnancy (Hoekzema et al., 2017). According to Barha et al. (2017), “what is perhaps less appreciated in the literature is that the pregnancy-induced

alteration in brain plasticity, brain morphology and behavior can have long lasting effects that are seen well past the reproductive event” (p. 135). This evokes the question of how this might support the increase of consciousness for a woman and support her evolution.

Another noteworthy change that occurs within the maternal brain is a result of the presence of fetal cells. Researchers have found fetal cells in the maternal brain after childbirth. Cells of the fetus often migrate through the placenta and enter various areas of the mother’s body (Dawe, Tan, & Xiao, 2007). The presence of fetal cells in maternal tissue is known as fetal microchimerism. Evidence related to fetal cell migration suggests benefits such as bonding and increased milk production. Fetal cells have been considered to act as stem cells and have been seen to develop into epithelial, heart, and liver cells, and fetal cells have been located in the breast, thyroid, and brain of pregnant women (Boddy, Fortunato, Wilson Sayres, & Aktipis, 2015). Conversely research suggests challenges that may include an autoimmune and inflammatory response during pregnancy, which may occur when pre-existing health challenges make the woman more vulnerable to fetal cells and where they migrate in her body. Research suggests that fetal cells cross into the maternal body and then act like stem cells and can act in a positive or negative expression of neuroplasticity depending on the woman’s health predisposition. Research has demonstrated the presence of fetal cells in the breast, thyroid, and brain (Boddy et al., 2015). How the presence of fetal cells affects the maternal brain is still being investigated. The next section will explore changes in pregnant brain states.

Overview of Delta and Theta Brain States

Some neuroscientists support the theory that brain states (also referred to as brain waves or brain frequencies) could be a physical measure of consciousness (Saarman, 2006). According to Turow, visiting scholar at Stanford University's Center for Computer Research in Music and Acoustics, brain wave activity seems to help explain real-time changes in consciousness (Turow & Will, 2012). Throughout the day and night brain waves can show five types of frequencies (beta, alpha, theta, delta, gamma) and often occur simultaneously in different parts of the brain. However, one wave is typically dominant depending on the state of consciousness (Cahn & Polich, 2006; Takahashi et al., 2005). The following section describes the healthy expression of two of the five brain states (delta and theta) due their relevance to prenatal maternal neuroplastic research. The unhealthy versions of each of the brain states are possible and can happen when there is an excessive amount or when the location is a suboptimal brain region. A description of unhealthy brain states is outside the scope of this study. Before defining the two healthy brain states a brief description of how brain waves are measured is presented.

Measuring brain states (brain waves) is done via brain mapping with devices called electroencephalographs (EEGs) that measure the electrical impulses in the brain. The communication among brain neurons is the matrix underlying thoughts, feeling, and behaviors. Synchronized electrical pulses from masses of neuron communication make brain waves, which are then categorized by bandwidths and measured in hertz to delineate their function as part of a spectrum of consciousness (Niedermeyer & da Silva, 2005; Travis & Shear, 2010; Von Stein & Sarnthein, 2000). According to Bowyer (2016), “the functional network communications across the brain networks is dependent on

neuronal oscillations . . . Detection of the synchronous activation of neurons can be used to determine the wellbeing or integrity of the functional connectivity in the human brain” (p. 1).

Delta. Similar to a drum beating, delta brainwaves are deep, slow, and low in frequency. Delta has been observed in deep meditation and dreamless sleep. Delta waves have been linked to empathy as well as compassion. In this brain state attention on the external is paused while an internal focus is emphasized. Delta is considered a healing and regenerative state (Niedermeyer & da Silva, 2005). Delta brainwaves decrease cortisol and release neurotransmitters and chemicals that support immune function and restoration. Further, Delta replenishes the body and brain partly as a result of the deep relaxation provided (Fannin, 2015).

It is rare for a person to have delta brain waves while awake as this state is predominant during sleep (Fannin, 2015). However, during specific developmental periods healthy people have predominant delta brain waves during waking hours. These developmental stages include fetuses in utero, full-term babies post-birth, preterm babies, infants, and children through age 5 (Niedermeyer & da Silva, 2005; Travis & Shear, 2010). High delta levels have also been found in people who have been recognized to have achieved rare states of advanced consciousness, particularly because they were aware that they were in a delta state and were able to intentionally navigate. High levels of inner awareness and interconnectivity have been associated with a person’s capacity to directly perceive that they are experiencing delta brain frequency (Fannin, 2015).

Simultaneous Theta and Delta. The presence of healthy theta and delta brain states together is related to intuition and awareness of one’s feelings (Fannin, 2015). In

addition, spiritual and metaphysical phenomena (such as out of body experiences and connecting with the presence of non-physical beings such as guides and angels) seem to happen when people's brains significantly increase in delta and/or theta frequencies (Fannin, 2015).

Theta. Similar to delta, healthy theta brainwaves occur mostly in sleep and meditation. While in theta brain state a person's attention is drawn to focus on his/her inner life and away from external stimuli. Theta frequency produces a dreamlike quality known to create access to intuition, daydreams, imagination, insights, and understanding beyond regular states of conscious awareness. In addition, theta indicates relaxation or a reduction in stress response. Theta state can be helpful in reducing anxiety and increasing a more resilient response to stress (Niedermeyer & da Silva, 2005; Travis & Shear, 2010).

EEG researcher, Jeffrey Fannin, PhD (2015), explains that theta connects our spiritual and physical selves and thereby increases spiritual awareness and insight. Fannin (2015) also points out the risk of too much theta can result in symptoms such as difficulty concentrating, boredom, and depression. It is important to note that theta waves can be found in different parts of the brain that can produce different results. Healthy theta activity may enhance our ability to process emotions, respond creatively, and access empathy and intuition. Theta state is considered helpful in healing both the body and the mind. The reason for this might be because theta can slow down the body and mind and at the same time reduce stress (Niedermeyer & da Silva, 2005; Travis & Shear, 2010).

Based on the limited research on pregnant brain activity it appears that healthy pregnant women show healthy theta activity. It appears that the pregnant brain is adapting

so the mother is better able to turn her attention inward to herself and her pre-nate.

However, the challenge in this altered brain state (theta-delta) is that it is typically found when someone is meditating or sleeping, and not usually found during daily functioning (i.e., working, driving, managing appointments, life changes, family obligations, etc.).

This brain state provokes several questions for the research. Could the pregnant brain state create problems for today's pregnant woman? Does she need to override her theta-delta brain state in order to manage her life and function in her everyday routines? What could help her benefit from the naturally occurring brain state of theta-delta? If she is able to utilize the naturally occurring brain state, then what is possible for her? Current research does not have the answers to these questions thus reinforcing the need for the current study to start the exploration of if and how pregnancy changes a woman's consciousness.

Brain State Changes During Pregnancy

Now that an understanding of healthy, non-pregnant Delta and Theta brain states have been established, the next step is to understand the changes in prenatal maternal brain states. There is very little research on prenatal brain states. An extensive search produced only two relevant studies (Qureshi et al., 2016; Walia et al., 2013). The results from Walia et al.'s (2013) preliminary research suggest that pregnant women are in a predominant theta and delta state. Unfortunately, this study lacks scientific rigor, so the results should be considered inconclusive, yet with promising insight for future research to examine. Despite the limitations (to be discussed) a recent study in China (Qureshi et al., 2016) on fetal brain states (again not a rigorous scientific investigation produced interesting results in that it found that the fetus is also in a predominant theta delta state.

These results from these two independent studies suggest the possibility that the presence of the fetus creates a neuroplasticity change in the pregnant woman's normal, non-pregnant brain states. Further discussion on the role of maternal-fetal symbiosis and regulation will be discussed in Pre and Perinatal Attachment section. The following presents the research on prenatal theta and delta states followed by a critique of the research supporting these results.

Pregnant theta and delta states. The following is a brief review of the two key studies that inform this section's findings. The intention is to make both the pioneering research efforts and limitations transparent. Preliminary research on pregnant brain states showed an increase of theta and delta during regular waking states, which was dramatically different than nonpregnant brain states (Walia et al., 2013). Brain states are considered by some scientists as a reflection of a person's consciousness. Walia et al.'s (2013) point of view was that "the entire consciousness of a living organism lies intertwined with the brain" (p. 2). The neurobiological changes of pregnancy may act as a precursor in potentiating an increase in consciousness (according to mindfulness meditation-based research to be discussed). This suggests that the neuroplasticity of pregnancy may predispose a woman to the opportunity to evolve her consciousness given supportive conditions.

These findings are based on Walia et al.'s (2013) EEG study of a pregnant woman and a non-pregnant woman's waking and sleeping brain states. The results demonstrated a significant difference between the two women and more specifically that the pregnant woman was in a predominant theta-delta state which is normally found in non-pregnant people when meditating or sleeping. The researchers suggest that the change in a

woman's brain state during pregnancy, which also reflects a change in her consciousness, could be due to the presence of the fetus, which is in theta-delta state.

The increased theta levels could contribute to why pregnant women are inclined toward daydreaming, imagination, heightened intuition, and the ability to access information beyond regular conscious awareness. A predominant theta brain wave is commonly seen in people's brains during meditation, suggesting that the pregnant woman's brain is inclined toward a state that is typically achieved during meditation practice. The delta brain state, the other state that was found to be predominant in the studied pregnant woman, is often prevalent during sleep (Teplan, 2002) and more rarely achieved in extremely advanced states of meditation (Fannin, 2015). Unlike nonpregnant women who are only in a delta state while sleeping, findings from Walia et al.'s (2013) study suggest that pregnant women are in a predominant delta state in conjunction with theta.

These findings are limited and must be taken with caution. Beyond the women's age (30–32 years) and the fact that the pregnant woman was in her third trimester, no other sample characteristics were provided. Details related to the women's waking and sleeping experiences (activity levels during waking, quality of sleep, etc.) and discussion of any control factors were also missing, which made it difficult to judge the validity and reliability of the study's findings. Yet, the study was published in a scholarly peer reviewed, open source journal in India, thus suggesting a certain level of rigorous evaluation prior to publication. Overall, the article is difficult to understand due to the fact that it was originally written in Hindi and translated to English.

A closer look at the results reveals further insight into the potential differences in pregnant and nonpregnant brain states. The difference in the participant's' brain states suggests a significant change in consciousness may be occurring during pregnancy. The results indicated that a pregnant woman's brain activity was dramatically different from the non-pregnant woman's brain during waking and sleeping hours. During waking hours the pregnant woman had far greater delta-theta activity than her non-pregnant counterpart. Cortical neuronal firing (e.g., thinking, active mental processing, etc.) within the pregnant woman was recorded as remarkably lower than what is found in non-pregnant women. This makes sense, because she was in a higher theta (typically high during meditation) and delta (typically high during sleep) state. It seems that the one area of the pregnant woman's brain that showed reduced theta activity was in the part of the brain related to motor function, also referred to as the motor cortex. This means that the part of a pregnant brain that controls motor functioning is not impacted by the enhanced theta-delta levels.

It is noteworthy that the pregnant woman's brain was actively processing more while sleeping than waking compared to her nonpregnant counterpart. The sleeping state of the pregnant woman looked similar to the waking state of the non-pregnant woman and the pregnant woman's sleeping brain state showed reduced delta and theta, compared to the non-pregnant woman's state. While the pregnant woman was sleeping it appears there was significant amount of overall brain activity with focused areas of alpha-beta activity (which demonstrates mental processing usually found while awake in the day). A voltage map of the pregnant and non-pregnant woman's brain during sleep showed a

dramatic contrast indicating that the pregnant brain was surprisingly active and the non-pregnant brain was resting (as would be expected during sleep).

According to Walia et al. (2013) there was significant delta frequency throughout the pregnant woman's entire brain with mild reduction in left medial prefrontal and left posterior lateral. The significant theta activity was recorded in left occipital and left and right prefrontal areas with reduced theta activity across the anterior to central sulcus. (To better understand the different lobes of the brain referred to in this section please see the brief description in the next section.)

Theta-delta reduces stress response. There seem to be several ways in which the pregnant woman's neurobiology changes to reduce her response to stress. These findings of a predominant theta-delta complex state during waking hours of pregnancy may be a significant contributing adaptation that lowers her stress response. It seems plausible that although Walia et al.'s (2013) findings are not without limitations, they suggest the potential that a woman's brain states may be working in tandem with the previously discussed reduced sensitivity in the HPA axis. More research is needed to validate and further understand the implications of this study's results. However, recent study in China on fetal brain states (Qureshi et al., 2016) found that the fetus is in a similar brain state (theta-delta) as the pregnant mother as reported by Walia et al. (2013).

Perhaps this mirroring in fetal-maternal brain states is due to co-regulation between pregnant mother and fetus. A closer look at Qureshi et al.'s (2016) results adds credence to Walia et al.'s (2013) findings.

Qureshi et al. (2016) used noninvasive EEG methods to investigate the brain states of fetuses in utero during the third trimester. One of the objectives of the study was

to further research fetal EEG performance. The results indicated that the fetus is in theta-delta brain state (Qureshi et al., 2016) similar to what was found in the pregnant woman in the previous study.

Again, the methodology of this study is not without critique. Two pregnant women (ages 29 and 26) participated during their second trimester. Four electrodes were placed on the women's abdomens based on where the fetus' head placement was identified via ultrasound.

The first EEG recording of the first fetus (inside the uterus of the 29-year-old) showed theta and delta in abundance (approximately 70% theta and 30% delta). Researchers noted that there was an overlay of beta and gamma which they determined was likely due to maternal interference and a technical error in placement of the electrodes. In order to control for maternal (EEG) interference, the recording was repeated.

The second EEG recording of the first fetus included four electrodes positioned by the fetal head plus four additional electrodes positioned away from fetal head to identify and filter out maternal EEG influence. The fetal EEG results were again theta and delta in abundance (approximately 50% theta and 50% delta). The first and only EEG recording of second fetus (inside the uterus of the 26-year-old) showed approximately 30% theta and 70% delta. Yet these findings were not deemed conclusive given the limitations of non-invasive technology available at the time of the study, and further investigation is required.

An examination of the brain lobes helps to understand the context and meaning of these two studies results.

Figure 9: Lobes of the Brain

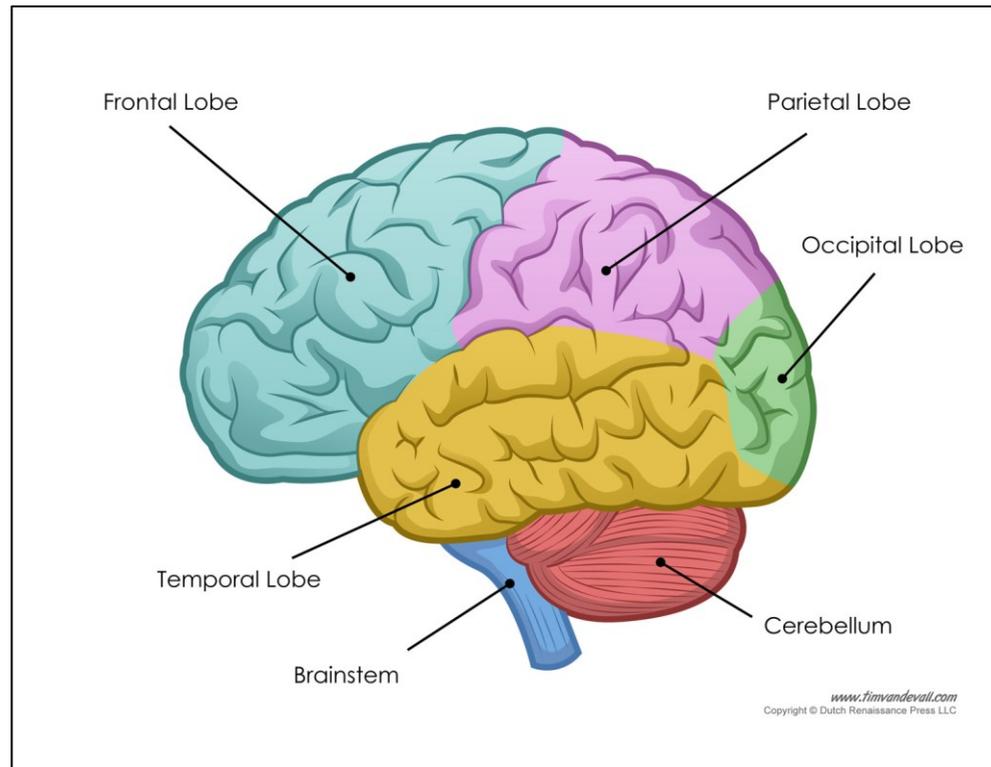


Image (Brain Diagram #1647679 Clipart Library).

A Brief Description of the Lobes of the Brain

The frontal lobe. The orbitofrontal circuit is involved in empathy, altruism, and interpretation of facial expressions. This section manages emotional impulses in socially appropriate ways for productive behaviors. The dorsolateral prefrontal circuit organizes responses to complex problems, plans steps to an objective, searches memory for relevant experience, adapts strategies to accommodate new data, guides behavior with verbal skills, and houses working memory. The area of the brain that evolved most recently (Goldberg, 2002).

Temporal lobe. The right side of the temporal lobe controls memory storage area, emotion, and hearing. The left side of the temporal lobe controls language (Goldberg, 2002).

Parietal lobe. This section of the brain receives and processes sensory information from the body, including calculating location and speed of objects (Goldberg, 2002).

Occipital lobe. This section of the brain processes visual data and routes it to other parts of the brain for identification and storage (Goldberg, 2002).

Summary of Maternal Prenatal Neuroplasticity

The previously discussed components of the neuroplasticity of pregnancy (sympathetic and parasympathetic nervous systems, hormones, neurotransmitters, brain states, and brain structure changes) are significant and numerous. The combination of these adaptations suggests that the changes that occur during pregnancy may promote the potential for an expansion of consciousness.

Based on the literature reviewed, pregnant women may have an opportunity to proactively engage, direct, and optimize the positive potential of maternal, prenatal neuroplasticity, and promote her increased internal capacity for self-regulation and stress management. The interrelated and synergistic prenatal maternal neuroplastic changes may have the ability to collectively support a woman's biological potential for growth and evolution.

Complementary alternative medicine (CAM) practices, such as meditation, are resources that support people in cultivating self-awareness, evolution, self-regulation, and stress reduction. The neuroplastic changes of pregnancy are similar to the neuroplastic

changes that occur through mindfulness meditation, suggesting that like meditation, the neuroplasticity of pregnancy offers a woman the unique opportunity to expand her awareness and evolve.

Comparison of Neuroplasticity During Pregnancy and Meditation

The goal of this section is to compare research on the neuroplasticity that occurs during pregnancy and mindfulness training and meditation practice. Rigorous meditation research, particularly mindfulness meditation research, sprang out of the 1990s, after the Dalai Lama challenged scientists to consider refocusing their attention on the healthy mind and the mechanisms and applicable benefits associated with positive human attributes, such as kindness and compassion (Davidson, 2016). Prior to this, researchers were primarily focused on the pathology of the mind. This new field of meditation research has produced evidence-based documentation (Fox et al., 2016; Kaur & Singh, 2015; Vandana, Vaidyanathan, Saraswathy, Sundaram, & Kumar, 2011) demonstrating the inner workings and benefits of the neuroplasticity of meditation for mind-body human potential. Similarly, this dissertation is focused on the mind-body potential for pregnant women as compared to the more typical, historical research that has explored the pathological risks during pregnancy.

Significant findings, particularly the rigorous research done in the field of mindfulness meditation, illustrate how meditation practices can positively change brain structure and function (Davidson et al., 2003) thus creating neuroplasticity. Research indicates that the neuroplasticity that occurs as a result of mindfulness training and practices helps foster the evolution of consciousness (Davidson et al., 2003). Newberg's (2009) review of the neurobiological research on meditation explains how meditation

impacts the communication between the brain and body functions. According to Newberg (2009), “Meditation is a complex mental process that involves changes in cognition, sensory perception, emotions, hormones, and autonomic activity” (p. 339). Research indicates that similar neurobiological changes occur during pregnancy.

Our brains do not contain fixed hardwiring; the neural pathways and circuits can in fact change with learning and with mental exercises, and meditation may be a harmless way to encourage the growth of new neurons (neurogenesis) along with the formation of new connections between existing neurons (synaptogenesis). By tying together the neurobiological effects of neurotransmitters, brain waves, mental exercise and the empirical evidence from the psychological experiments, it is evident that meditation is an effective treatment for anxiety, and it does not suffer from any side effects. It may also function as a preventive medicine.

(Krishnakumar et al., 2015, p.6)

Pregnancy and mindfulness practices generate remarkably similar neuroplasticity.

The following is a description of neuroplastic changes that are common to pregnancy and meditation.

Table 1: Similar Neuroplastic Changes That Occur During Healthy Pregnancy and Meditation

Hormonal Changes	Pregnancy	Meditation
Adrenocorticotrophin (ACTH)	↓	↓
Cortisol	↓	↓

Corticotropin Releasing Hormone (CRH)	↓	↓
Dehydroepiandrosterone (DHEA)	↑	↑
Neurotransmitters/Neuropeptides Changes		
Acetylcholine (Ach)	↑	↑
Dopamine	↑	↑
Endorphins	↑	↑
(GABA)	↑	↑
Glutamate	↓	↑*
Melatonin	↑	↑
Norepinephrine	↓	↓
Serotonin	↑	↑
Brain Structure and Neurobiological Function Changes		
Amygdala Activity	↓	↓
Anterior Cingulate Cortex Activity (ACC)	↑	↑
Parasympathetic Activity	↑	↑
Prefrontal Cortex Activity (PFC)	↑	↑

Sympathetic Activity	↓	↓
Immune / Inflammatory Changes		
Proinflammatory cytokines	↓	↓
Brain State Changes		
Delta	↑	**
Theta	↑	↑

* Both promote reduction in stress response

** Inconclusive research

The following is a description of the common elements of the neuroplasticity of healthy pregnancy and meditation. The changes in hormones, neurotransmitters, brain structure, and brain states account for the increase in parasympathetic nervous system function. Of interest, an increase in parasympathetic nervous system activity creates a calming, buoyant effect and therefore a primary point in introducing this section. The critical component in parasympathetic and sympathetic activity is the HPA axis function. Parasympathetic nervous system function and modulation of sympathetic nervous system function mutually occur during pregnancy and meditation. Additionally, research demonstrates that mindfulness meditation during pregnancy showed a reduction in sympathetic activity and a respective decrease in the daily perception of stress (Muthukrishnan, Jain, Kohli, & Batra, 2016). The following is a summary of the neuroplastic changes that occur during pregnancy and meditation.

Similar Neuroplastic Hormonal Changes

ACTH. ACTH decreases in healthy pregnancy (Linton et al., 1993) and during meditation (Newberg, 2009), specifically Transcendental Meditation (Infante et al., 1998). Reduction in the ACTH stress hormone means less activation of the adrenal cortex and therefore less cortisol is released. The cascade result is a reduced stress response and a softening of the fight, flight, freeze response, which can allow a person to respond instead of to react.

Cortisol. Cortisol decreases in healthy pregnancy (Muthukrishnan et al., 2016) and a wide range of meditation techniques (Guglietti, Daskalakis, Radhu, Fitzgerald, & Ritvo, 2013; Matousek et al., 2010; Newberg & Iversen, 2003; Robert McComb, Tacon, Randolph, & Caldera, 2004; Walton et al., 2004). Cortisol is the major stress hormone in the human body that is secreted by the HPA axis and has been found to be a useful marker for measuring stress management. The reduction of cortisol supports a reduction in stress response for pregnant women and meditators.

Corticotropin Releasing Hormone (CRH). CRH decreases during healthy pregnancy (Hillerer et al., 2014; Sandman et al., 2011) and meditation (Arias, Steinberg, Banaga, & Trestman, 2006; Davidson et al., 2003; Hölzel et al., 2011; McNamara, 2006; Mohandas, 2008). As beta endorphins increase in the NTS in the brain stem the beta endorphins follow pathways to the hypothalamus that signal a reduction in CRH. As a result of a reduction in CRH, less ACTH gets produced by the pituitary component of the HPA Axis. Therefore, the adrenal gland does not get the stress signal that activates an increase in adrenaline. There is a plethora of meditation research indicating that CRH decreases during meditation (Davidson et al., 2003; Hölzel et al., 2011; Kasala et al,

2014; McNamara, 2006; Mohandas, 2008; Newberg & Iversen, 2003). That said, at the time of this literature review there was an older study done in 1995 that compared the effects on CRH post meditation and running, but not during those activities (Harte, Eifert, & Smith, 1995). The results suggested that CRH increased *after* “meditation;” however, those meditators used an integrated meditation of yoga, chanting, breath exercises, and meditation, which may have involved significant physiological effort. Since 1995, the definition of meditation and meditation research has become more rigorous. It is possible that form of meditation was stimulating differently than the meditations researched more recently. It is noteworthy to add that according to Sprouse-Blum, Smith, Sugai, & Parsa (2010), beta endorphins are also produced as a result of physiological effort, stress, or extensive pain.

Dehydroepiandrosterone (DHEA). DHEA increases during healthy pregnancy (Mulder et al., 2002; Mastorakos & Ilias, 2003) and meditation (Bushell & Theise, 2009; Glaser et al., 1992; Hankey, 2006; Kasala et al., 2014). DHEA hormone is involved in counterbalancing the effects of glucocorticoids (stress hormones) such as cortisol and supports immune function (Shealy, 1995). An increase in DHEA promotes physical health and a reduced stress response.

Neuroplastic Neurotransmitters/Neuropeptides Changes

Acetylcholine. Acetylcholine increases during healthy pregnancy (Glynn & Sandman, 2011) and likely increases during meditation (Kasala et al., 2014; Newberg, 2009). According to Newberg’s review of neuroplasticity (2009), he states:

While no studies have evaluated the specific role of acetylcholine in meditation, it appears this neurotransmitter may enhance the attentional component as well as

the orienting response in the face of progressive deafferentation of sensory input into the parietal lobes during meditation. (p. 352)

Dopamine. Dopamine (in plasma) increases during healthy pregnancy (Brunton & Russell, 2008; Ben-Jonathan & Munsick, 1980; MacKinnon et al., 2014) and various meditation techniques (Kasala et al., 2014; Kjaer et al., 2002; Krishnakumar et al., 2015; Newberg, 2009;). Dopamine is a feel-good hormone and is in the catecholamine family.

Endorphins (Beta-Endorphins). Endorphins (in plasma) increase during healthy pregnancy (Brunton & Russell, 2008; Cahill, 1989; Genazzani et al., 1984) and meditation (Kasala et al., 2014; Kjaer et al., 2002,). Endorphins, also referred to as beta endorphins, are involved in reducing pain. Endorphins are also involved in giving pleasurable feedback after eating, sex, and maternal behavior (Sprouse-Blum et al., 2010).

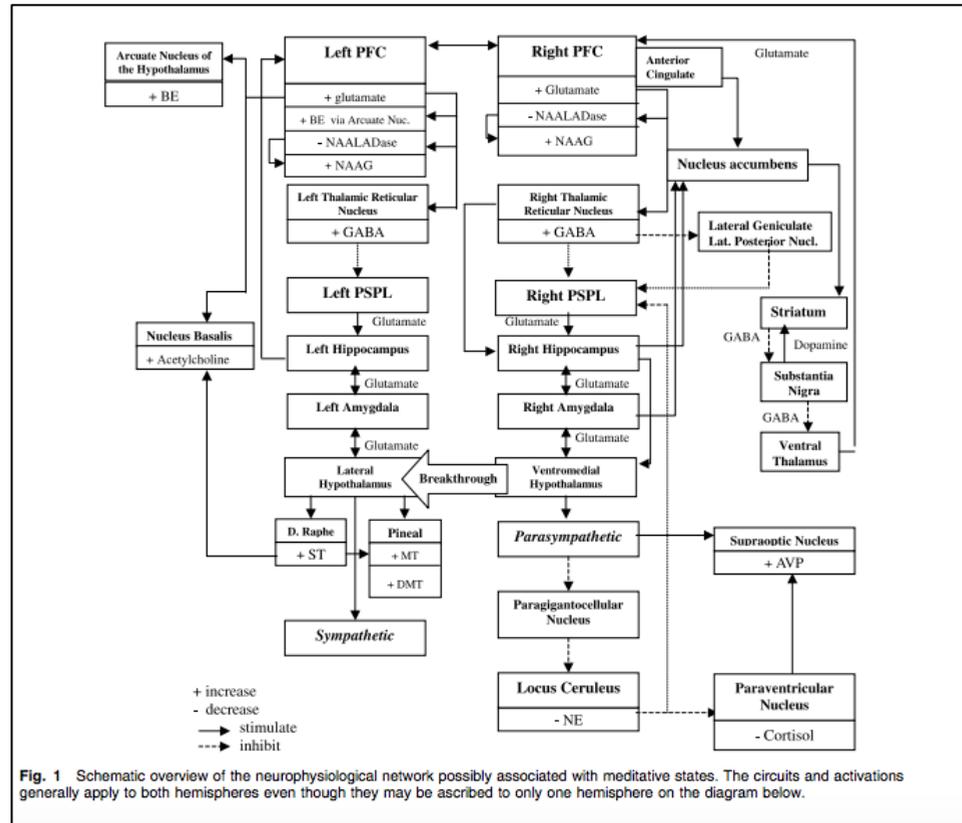
GABA. GABA function and level increase during healthy pregnancy (Brunton & Russell, 2008), and it increases in production and delivery with various forms of meditation, including mindfulness meditation (Guglietti et al., 2013; Kasala et al., 2014; Newberg, 2009; Newberg & Iversen, 2003) and Transcendental Meditation (Krishnakumar et al., 2015). GABA is a natural sedative produced by the thalamus in the brain and is essential for relaxation. GABA causes a calming response post-stress. According to Bowyer (2016), “coherent neuronal communications are based on neurotransmission dynamics dictated by major neurotransmitters like the amino acids glutamate and GABA” (p. 2).

Glutamate. Glutamate levels increase during meditation (Fayed et al., 2013; Newburg, 2009) and decrease during healthy pregnancy (Tsisis et al., 2013). During

pregnancy there is a gradual decrease of glutamate from first to third trimester until birth. There is a unique interplay that occurs among estrogen, progesterone, and glutamate, as well as a specific interaction between oxytocin and glutamate during pregnancy. It is interesting to note that although there is an increase of glutamate during meditation and a gradual decrease during pregnancy, the change in glutamate levels and glutamatergic activity that occurs produces similar effects, such as calming and expanded awareness (Tsesis et al., 2013). There is much to still understand about this process that research has yet to examine. According to Newberg's (2009) neurobiology review of meditation the prefrontal cortex produces more glutamate during meditation. This excess glutamate communicates with the thalamus that then transmits GABA to the parietal lobe which results in an inhibition of the parietal lobe (PSPL) function. It seems that in order to increase an inhibitory function in the brain there needs to first be this important increase in glutamate from the PFC (McNamara, 2009). More glutamate in the brain has been seen to increase GABA in the brain. It also produces beta endorphins from the hypothalamus (McNamara, 2009). Further, this relaxes a person's external focus and supports internal attention as well as a reduced stress response per a decrease in norepinephrine and cortisol (Newberg & Iversen, 2003). This cascade of events that occurs as a response to an increase of glutamate in PFC during meditation has the end result of relaxing attention on external stimuli and expanding awareness to include a sense of interconnectivity. This is because a sense of time and space expands to a universal awareness as compared to the non-meditative focus of a more limited, personal, immediate view of self and world. Furthermore, a study conducted by Fayed et al. (2013) on long-term Zen meditators showed glutamate decreased in the left thalamus which is consistent with Newburg's

(2009) research on the overall brain function of glutamate to create an inhibitory function with GABA during meditation. Most meditations stimulate the prefrontal cortex, which causes an increased release of glutamate during meditation, which increases GABA ultimately generating a relaxed focus on the external (McNamara, 2006).

Figure 10: Neurophysiologic Network Associated with Meditation



(Newburg & Iversen, 2003, p. 284)

Melatonin. Melatonin (nighttime serum concentration) increases during healthy pregnancy (Nakamura et al., 2001; Tamura et al., 2008) and meditation (Kasala et al., 2014; Krishnakumar et al., 2015; Newburg & Iversen, 2003; Tooley, Armstrong, Norman, & Sali, 2000). Melatonin helps to calm the body, supports sleep, and decreases awareness of pain. In pregnancy, melatonin can support circadian rhythm, endocrine and modulation and helps provide protection from free radicals, oxidative stress and

inflammatory response (Tamura et al., 2008). Researchers have considered the possible association between an increase in melatonin and access to endogenous DMT (Newberg & Iversen, 2003). States of elation and other positive effects of meditation could be related to increase of serotonin and melatonin (Newburg, 2009).

Norepinephrine (Noradrenaline). Norepinephrine (in plasma) decreases during healthy pregnancy (Tunbridge & Donnai, 1981) and meditation (Kasala et al., 2014; Krishnakumar et al., 2015; Newberg & Iversen, 2003). The stress hormone norepinephrine is released into circulation when the sympathetic nervous system (SNS) is activated by stress. The decrease in norepinephrine is involved in the reduction in SNS activity during healthy pregnancy. This generates an inflammatory response in the body and may cause symptoms of depression (Osborne & Monk, 2013).

Serotonin. Serotonin increases during healthy pregnancy (Brunton & Russell, 2008), mindfulness meditation (Newberg & Iversen, 2003), and Transcendental Meditation (Krishnakumar et al., 2015). Serotonin is involved in the experience of happiness and well-being.

Neuroplasticity Changes to Brain Structure and Neurobiological Function

Amygdala. Amygdala volume and activation decreases during pregnancy (Hoekzema et al., 2017) and meditation (Goldin & Gross, 2010; Taren et al., 2015). The amygdala function is related to emotional reactivity.

Anterior Cingulate Cortex. Anterior cingulate cortex (ACC) activity increases during pregnancy (Hoekzema et al., 2017) and mindfulness meditation (Cahn, & Polich, 2006; Brewer et al., 2011). The ACC is integral to self-regulation. In addition, the default mode network (medial prefrontal and posterior cingulate cortices) changes during

pregnancy (Hoekzema et al., 2017) in a similar way as it does in mindfulness meditation thereby decreasing reactivity and increasing self-regulation (Berkovich-Ohana, Glicksohn, & Goldstein, 2012; Brewer et al., 2011; Davidson & McEwen, 2012; Farb et al., 2007; Heatherton, 2011; Kaur & Singh, 2015).

Prefrontal Cortex Activity (PFC). Left prefrontal cortex activity increases during pregnancy (Hillerer et al., 2014); Hoekzema et al., 2017) and in meditation (Brewer et al., 2011; Davidson et al., 2003; Kaur & Singh, 2015). The prefrontal cortex is critical to the modulation of emotions. The left prefrontal cortex has been correlated to positive moods and the right side to negative moods (Davidson, 1998). More precisely, mindfulness meditation research has shown an increase in relative left-sided anterior activation associated with reductions in anxiety and negative affect and increases in positive affect (Davidson et al., 2003). Studies have shown that the medial prefrontal cortex (MPFC) activity decreases as a result of the increase in awareness and decrease of engagement in thoughts and emotions associated with mindfulness meditation (Farb et al., 2007).

Neuroplasticity Immune/Inflammatory Changes

Proinflammatory cytokines decrease during healthy pregnancy (Brunton & Russel, 2008; Hillerer et al., 2014) and meditation (Kasala et al., 2014). Mindfulness meditation studies show positive immune adaptation, for example, examination of blood cells indicate that the mindfulness-based stress reduction (MBSR) program reduces cytokine secretion, oxidative stress, and DNA damage (Carlson et al., 2003) and mindfulness practice increases antibodies (Davidson et al., 2003).

Activation of the SNS due to a stress response releases norepinephrine into circulation that increases the proinflammatory cytokines. Proinflammatory cytokines can influence pathological-physiological pathways of the brain that are related to depression. Whereas in healthy pregnancy and meditation, when the PSN is activated there is an inhibition of the proinflammatory cytokines as a result of the release of acetylcholine (a neuropeptide) and thereby a decrease in the systemic inflammatory response (Kasala et al., 2014; Newburg & Iversen, 2003). This process helps the body rest and recover after stress as compared to a negative inflammatory reaction.

Neuroplastic Brain State Changes

Delta. Delta increases during third trimester of pregnancy in the waking state (Walia et al., 2013) and likely in extremely advanced meditators (Fannin, 2015). Delta is categorized as a brain state that promotes healing and regeneration most typically during dreamless sleep. Transcendental Meditation (open eyes) has demonstrated strong delta coherence (Kaur & Singh, 2015).

Theta. Theta increases during pregnancy (Qureshi 2016; Walia et al., 2013) and meditation (Krishnakumar et al., 2015; Lagopoulos et al., 2009). Babies and children are in a predominantly theta state. The theta brain state indicates an internal focus as compared to an external focus. The intuitive, dreamlike, insightful state of theta also indicates a relaxed response to stimuli including stress. Various meditation techniques show an increase in theta in frontal and temporal-central lobes as compared to posterior regions (Krishnakumar et al., 2015; Lagopoulos et al., 2009) and theta-alpha has been shown to increase during mindfulness meditation techniques (Cahn & Polich, 2006; Kaur, & Singh, 2015) and Transcendental Meditation (Kaur & Singh, 2015).

Unknown areas of neuroplasticity overlap during pregnancy and meditation.

There is insufficient meditation research on the effects on the following hormones: estrogen, oxytocin, progesterone, and prolactin (all of which have been demonstrated to increase during pregnancy). Despite this, Mascaro et al., (2012) hypothesize that there is a possible enhancement of the oxytocin system that occurs resulting from Cognitive Based Compassion Training meditation (CBCT). The authors state, “CBCT might operate, in part, by enhancing some aspect of the oxytocin (OT) system” (p. 53) and suggest future research delve into this area. Research also shows that stress reduces progesterone levels, which in turn suggests that stress reduction practices like meditation may increase progesterone, although there is no known research that substantiates this at the time of this review. Lastly, research indicates that allopregnanolone increases during pregnancy (Brunton & Russell, 2008; Hillerer et al., 2014), and no identified research was found regarding allopregnanolone during meditation.

In addition, there also are a few noteworthy neuroplastic changes that occur during pregnancy and meditation that are different. It is beyond the scope of this review to explore the function and rationale of these differences. The following is an abbreviated summary of the contrary changes that occur during pregnancy and meditation.

Brain Derived Neurotrophic Factor (BDNF). BDNF decreases during pregnancy (Christian, Mitchell, Gillespie, & Palettas, 2016) and increases during meditation (Kasala et al., 2014). BDNF is active in the hippocampus, cortex, and forebrain—areas vital to learning, memory, and higher thinking. Pregnant women can benefit greatly from exercise, meditation, yoga, and other CAM practices to help increase BDNF.

Hippocampal volume. Hippocampal volume decreases during pregnancy (Hoekzema et al., 2016) and increases during meditation (Newberg, 2009). During pregnancy, hippocampal volume decreases progressively from first to third trimester due to synaptic pruning to prepare for motherhood (Hoekzema et al., 2016). The hippocampus is part of the limbic system which regulates emotion.

Alpha. Alpha, specifically lower band alpha (indicating internalized attention) increases during various meditation practices (Kaur & Singh, 2015). At the time of this literature review there was inconclusive evidence for alpha activity during healthy pregnancy. It appears that alpha decreases during the day for pregnant women and may, surprisingly, increase during sleep. There is not enough research to comment further. Alpha has been shown to increase in meditation, specifically mindfulness meditation techniques (Cahn & Polich, 2006; Davidson, et al., 2003) and Transcendental Meditation (Hankey, 2006).

Summary of the Neuroplastic Similarities Between Pregnancy and Meditation

Although research has investigated the neurobiological changes that occur during pregnancy and meditation independently, at the time of this literature review a small amount of studies have begun to investigate the overlap in these scholarly conversations. Examining these two fields of study under one lens creates synthesized coherence. This serves to establish a baseline understanding of the possibility of how the neuroplasticity of pregnancy can benefit a woman's consciousness in a way similar to the way research has demonstrated the neuroplasticity of meditation benefits practitioners' consciousness (Brown et al., 2007; Cahn & Polich, 2006; Davidson et al., 2003; Kabat-Zinn, 2003;

Kabat-Zinn & Hanh, 2009; Hölzel et al., 2011; Garland et al., 2013; Siegel, 2007; Warriner et al., 2012).

Conclusion of Neuroplasticity During Pregnancy

There is a significant amount of evidence indicating that the prenatal maternal brain and body are undergoing significant neurobiological changes during this period. Yet, no research has specifically investigated whether or not a woman's consciousness changes as a result of pregnancy. One could assume that a healthy pregnant woman's consciousness can evolve or is evolving based on the substantial similarities between the neurobiology of pregnancy and meditation. The neuroplasticity of pregnancy and meditation share many outcomes, for example, reduction of stress response and improvement of inner resilience, self-regulation, co-regulation, and self-introspection, all of which are key ingredients in expanding or evolving consciousness.

The prenatal maternal neuroplastic changes, collectively and collaboratively appear to optimally position a woman for growth, for the development of her pre-nate and herself. However, while the neuroplasticity of pregnancy seems to be designed to support a healthy woman, it is not without risk, particularly if there are psycho-emotional and environmental vulnerabilities at play. It may be important for a woman to take action and intentionally direct this intense period of change toward positive neuroplasticity. There is research suggesting that mindfulness meditation training and practices are an optimal complement to maximize the positive potential available within the neuroplasticity of pregnancy (Chan, 2016; Duncan & Bardacke, 2010; Guardino et al., 2014; Hughes et al., 2009; Muthukrishnan et al., 2016; Vieten & Astin, 2008; Warriner et al., 2013; Warriner et al., 2012).

Preliminary research suggests that a pregnant woman may be in a theta-delta state during waking hours with little beta or alpha activity, which is typical for the average healthy (non-pregnant) human being while awake. A pregnant woman might be particularly receptive to the benefits of meditation in light of her already existing theta state. One of the ways that mindfulness meditation training might benefit pregnant women is the possibility of increasing alpha brain wave activity that is noted within mindfulness meditation research (Cahn & Polich, 2006; Kaur & Singh, 2015). Alpha brain activity is associated with an increase in mental clarity and focused thought processes.

Although the research thus far suggests that mindfulness meditation training and practice has favorable results during pregnancy (Chan, 2016; Duncan et al., 2017; Duncan & Bardacke, 2009; Guardino et al., 2014; Hughes et al., 2009; Vieten & Astin, 2008; Warriner et al., 2013; Warriner et al., 2012) more research is needed to understand if, and how maternal consciousness evolves. The evidence of the dramatically similar neuroplastic changes that occur within a normal, healthy pregnant woman and a meditator suggest the potential for evolution of consciousness. Yet, there is minimal to no research that has explicitly investigated whether or not a pregnant woman's consciousness changes and evolves, thus underscoring the need for the present study. This study aims to address this gap by examining the question: "How can a woman's experience of pregnancy evolve her consciousness?" by using a synthesized coherence model in reviewing existing literature.

The field of Interpersonal Neurobiology developed by Dan Siegel (1999) integrates the science of neurobiology, psychotherapy, and other disciplines in order to

integrate disparate fields to support understanding of the experience of well-being. Research from Interpersonal Neurobiology may help substantiate the potential for maternal positive neuroplasticity during pregnancy by providing context for how emotional relationship experiences impact the brain and mind (Siegel, 2012a, 2017). According to Siegel (2019a), "An interpersonal neurobiology of human development enables us to understand that the structure and function of the mind and brain are shaped by experiences, especially those involving emotional relationships." During pregnancy, both a woman and her pre-nate are in the midst of a developmental milestone. Utilizing the lens of Interpersonal Neurobiology, this life passage may be informed by the emotional dyadic maternal-pre-nate relationship which may also be a contributing factor to the potential positive neuroplasticity within a woman's brain structure and function. The emotional dyadic relationship between mother and pre-nate is an interpersonal neurobiology relationship that influences the potential for both a woman and her pre-nate. The following sections use synthesized coherence to explore how the presence of a pre-nate may influence maternal consciousness by exploring the literature on the psychoneurobiological dyadic relationship inherent within maternal-prenatal co-regulation.

Maternal-Fetal Dyadic Influence on Pregnant Women

The maternal-fetal dyadic relationship is a uniquely psycho-neurobiological relationship given the presence of a fetus inside a woman's body.

This section builds upon the neuroplasticity of pregnancy and discusses how the fetus influences a woman during pregnancy via the reciprocal nature of the dyadic maternal-fetal relationship. Research and theory from Prenatal and Perinatal Psychology

(PPN) and Maternal-Fetal Attachment (MFA) are presented in an effort to understand if and how the presence of the fetus informs a woman's process of becoming a mother.

There is mounting evidence regarding the impact of mother to fetus, particularly regarding pathological and negative implications (Axness, 2012; Weinstein, 2016). Neuroplasticity research shows that maternal influence informs adaptive and maladaptive infant development, including mental and emotional health (Davidson & McEwen, 2012). Early life stress impacts the infant's HPA axis function and respective stress response behavior. Studies of mothers and offspring examined what happens when there is a maternal-infant connection established in early development and found greater potential for neuroplasticity later in life among the offspring (Davidson & McEwen, 2012). PPN and MFA literature also provide empirical support for the one-way dyadic (mother to fetus) influence (Weinstein, 2016). The aim of this section is to focus on the positive potential available within the dyadic relationship by exploring areas of PPN and MFA that present theory and research regarding how the fetus positively impacts the woman. The goal is to create synthesized coherence among neuroplasticity research, PPN, and MFA regarding the prenatal dyadic relationship's influence on women during the transition into motherhood.

Focus on the prenatal development period is typically given to the woman's physiological changes inherent in growing a baby and preparing for childbirth. A lesser-known theory, Prenatal and Perinatal Psychology (PPN) focuses on the psycho-emotional implications of this period and acknowledges conception and pregnancy as the beginning of motherhood. However, PPN primarily studies the effects of stress and/or overwhelming events that occur from conception through the prenatal and perinatal

periods and explores how the maternal-fetal dyad impacts fetal development and the trajectory of his/her mental, emotional health into adulthood (Weinstein, 2016). The majority of PPN research and theory is based on how the implications of maternal experiences and states impact the developing fetus (Weinstein, 2016). Although motherhood is recognized as commencing during pregnancy, the focus within PPN research is primarily on the fetus (Lyman, 2005) and fetal consciousness (Melton, 2013) and less so on the women's experience of entering motherhood. Despite the lack of attention on the pregnant woman's experience, the insights gained from PPN research on the dyadic maternal-fetal relationship inform the present study.

PPN Pioneer researcher, Verny (2002), among many others, believes that the influential and impactful nature of the prenatal period, as well as the dyadic maternal-fetal relationship, is two-sided (Axness, 2012; Castellino, 2000; Lipton, 2015; Odent, 2007; Schore, 2002; Weinstein, 2016). In other words, both the mother and pre-nate are impacted during this critical period of development. Psycho-neurobiological research regarding the reciprocity of the maternal-fetal relationship and how the presence of the pre-nate influences the woman during pregnancy is presented to help illustrate the need for this study's exploration of if and how a woman's consciousness evolves during pregnancy.

Developmental, psychobiological research has revealed that in the interdependent relationship of the mother and fetus and mother and infant, their individual homeostatic systems are linked together which allows for mutual regulation of the vital endocrine, autonomic, and central nervous systems by their cohabitation and co-regulation (Axness, 2012; Castellino, 2000; Lipton, 2015; Odent, 2007; Perry, 2005; Schore 2002; Verny

2002). Psychobiologists further elaborate that the mother-fetus regulatory processes function so that the mother's mature, differentiated nervous system regulates the baby's "open," immature, homeostatic systems. This unique relationship of co-existing and the experience-contingent nature of dyadic regulation creates an open network that informs growth for both mother and fetus. Another component of maternal-fetal co-regulation has been mentioned in recent research investigating the connection between fetal microchimerism (embryonic stem cells in the pregnant woman's body and brain) and the promotion of neurogenesis for pregnant women and new mothers (Harth, 2015).

During the prenatal period critical psychobiological interactions occur that are determinant factors in the mother-infant attachment relationship (Lipton, 2015; Verny, Kelly & Pennycook, 1981; Weinstein, 2016). There is evidence that interactive conditions and regulatory functions start in the womb environment (Glynn & Sandman, 2011; Sandman et al., 2011; Weinstein, 2016). Yet, attachment theory, developed by Bowlby in the 1950s, only recognizes co-regulation in the mother-child dyad post birth (Cassidy & Shaver, 2018), not beginning during pregnancy. Bowlby's colleagues and predecessors, Mary Ainsworth and Mary Main, furthered his original theory of attachment in the 1960s and 1970s, yet it was still seen to begin during infancy. Based in affective neuroscience, Schore (2002) explained attachment as interactive regulation.

Maternal Fetal Attachment (MFA) theory and research expanded on the initial tenets of Attachment Theory to recognize that this interpersonal, neurobiological relationship and attachment begins during pregnancy (Brandon et al., 2009). According to MFA research beginning in the early 1980s, the prenaté's development of socio-emotional processing, stress coping functions, and self-regulation are contingent on

interactive regulation with her mother (Brandon et al., 2009). A brief historical overview of MFA theory sheds light on the importance of MFA to this study.

Brandon et al.'s (2009) review of the history and theory of prenatal attachment describe prenatal attachment as “a process in which a pregnant woman’s psychic energy was emotionally invested into the fetus” (p. 2). Although helpful, this does not address how the woman’s investment in her fetus impacts her own development. Nursing researcher Cranley (1981) is credited with developing the original concept of MFA as “the extent to which women engage in behaviours that represent an affiliation and interaction with their unborn child” (Brandon et al., 2009, p. 4). Ten years later, in 1990, Muller expanded the definition from focus on physical maternal behaviors to include maternal thoughts and fantasies. Muller’s definition, although key in propelling the MFA field, does not address the possibility of how becoming a mother impacts a woman’s sense of self. The most current and comprehensive definition of MFA to date is an “affiliative relationship between a parent and fetus, which is potentially present before pregnancy, is related to cognitive and emotional abilities to conceptualize another human being and develops within an ecological system” (Brandon et al., 2009, p. 4).

Maternal-fetal attachment is considered “both a developmental task of pregnancy and an indicator of adaptation to pregnancy” (Alhusen, 2008, pp. 325–326) that is sparked by maternal recognition of the fetus. Current MFA theory claims that the maternal-fetal relationship begins as early as when the mother becomes aware of her pregnancy, not when she feels the fetus moving (Wright, 2010). According to Wright (2010) the presence of her baby in utero and the connection she builds with him/her

influences her decision-making and actions which inform her sense of self as woman and mother.

Insight into a woman's experience within the transformative process of pregnancy has been largely focused on the woman's engagement in prenatal bonding behaviors, the development of the maternal-fetal relationship, and the transformation of the woman's self-identity. In Alhusen's 2008 update on Maternal-Fetal Attachment literature she noted that Cranley (1981) was the first to suggest that during pregnancy "both physical development of the fetus and transformation of a woman into a mother are occurring" (p. 315). In the early 2000s, researchers' understanding of the scope of maternal changes during pregnancy was expanded. The previous focus on the changes to the pregnant woman's persona/behavior-based changes progressed to include the possibility of psycho-emotional changes to the pregnant woman. Spletzer, O'Beirn, and Bishop (2008) stated, "pregnancy is a time of transformation, especially for first-time mothers. A pregnant woman undergoes psychological and emotional changes that affect not only her self-identity, but also her sense of self, her character and her self-esteem" (p. 33).

Although there is some acknowledgement and integration of a pregnant woman's inner psychological and emotional transformation within PPN and MFA theories, there is limited discussion on how the fetus impacts the mother within the dyadic relationship. Yet these theories clearly dictate that there is a change that women go through in becoming a mother as early as conception and interdependent relationship exists between fetus and mother. These pioneering theories opened the doors to considering pregnancy as a vital and important time in a woman's development of self as mother. Partridge (1988) stated, "somewhere among recognition of conception, delivery of an infant, and

the early months of the child's life, a parent is born" (p. 281). Partridge's (1988) statement reflects the hesitancy yet recognition that is common within the literature that parenthood begins during pregnancy. The conceptualization of a woman only in relationship to her fetus/child has limitations and requires further investigation.

The next section introduces developmental and anthropological-based research on the conceptualization of mother during the life transition of pregnancy to birth in order to understand what has been studied about how this developmental time from a woman's perspective. The aim of the following section is to create synthesized coherence among several theories regarding the transition a woman goes through in becoming a mother in order to demonstrate the unified yet disparate support for the potential available to women to evolve their consciousness during pregnancy.

Transition into Mother

PPN and MFA are paramount theories in acknowledging the importance of the perinatal period. However, the focus of these theories is fetus-centric. Although these two theories are inclusive of the mother, they are primarily concerned with the woman as she influences and impacts the development of her fetus/child. This highlights the disconnection in understanding the process of becoming a mother from the woman's perspective. There is substantial study and acknowledgment of the important transformational process that occurs for women in becoming a mother. This section aims to weave together the disparate research on this topic and create synthesized coherence of what has been studied on the process of becoming a mother. Becoming a Mother theory (BAM) as well as several life transition theories that examine pregnancy and motherhood

as part of a woman's trajectory of self-development will be explored in light of how pregnancy potentially impacts women's evolution of consciousness.

The transition into motherhood has been explored by various researchers with the attempt to better understand and define this role and life experience. However, maternal prenatal-based research has primarily investigated the pathological and medical potential of pregnancy (Attanasio et al., 2014). According to Sevón (2005), "pregnancy is often studied separately from motherhood, and has mainly been approached via medical and psychiatric investigations which have stressed the prescriptive and normative paths of pregnancy and have also focused on the pathologies and abnormalities related to it" (pp. 462–463). This study is interested in examining the research on the positive potential during pregnancy for a woman.

Nakamura et al. (2015), like many researchers focused on what happens when things go wrong in the prenatal and perinatal period, however they made a surprisingly positive note about the nature of pregnancy. Nakamura et al. (2015) mentioned that there are likely positive implications associated with pregnancy, particularly with regard to a pregnant woman's internal psycho-emotional state and how this affects the developing fetus and mother. These areas of study are worthy of future investigation according to these researchers. Similar to the theoretical perspective of PPN and MFA, Nakamura et al. (2015) claim that motherhood begins during pregnancy and should be nurtured to promote positive experiences and outcomes for both fetus/child and mother, such as emotional well-being, enjoyment gained from maternal-fetal dyad, as well as feelings of self-affirmation as a mother.

Scholars have begun to develop language and concepts related to the psycho-emotional evolutionary process of motherhood, yet this research is fragmented across various sectors and has been given little attention. Conceptual terms that capture the positive potential of the maternal prenatal experience found within the literature include: parental self-concept, the existential meaning making of becoming a mother, psychological birth of a parent, maternal programming, maternal self-confidence, becoming a mother, maternal role attainment, maternity, holistic mothering, humanising pregnancy and birth. These terms have been used somewhat casually and sometimes interchangeably yet not cohesively enough to infiltrate mainstream knowledge and practice. This study links and builds upon some of these terms in the scholarly review of the process of becoming a mother and continue to emphasize the positive potential within this period for women.

PPN and MFA are of the first theories to use a positive lens focused on the inherent potential of pregnancy, yet as mentioned these theories are primary focus on how the role of the mother impacts the developing fetus. As stated, the transformative psycho-emotional process women experience during pregnancy has gained little attention in the literature particularly in comparison to what is published about the child's development beginning in the prenatal period. Partridge (1988) proposed that the woman's transformation occurs in tandem with the child's, which mirrors the PPN and MFA maternal-fetal dyadic lens. She writes, "much as the child develops a sense of himself, a personal identity, or a self-concept, so does a parent develop a sense of self-as-parent" (p. 281). PPN and MFA propose that pregnancy inherently changes a woman's

psyche (Alhusen, 2008; Brandon et al., 2009; Glynn & Sandman, 2011; Lyman, 2005), yet do not investigate the nature of change.

Bailey (2001) emphasized the need for more investigation on the changes to a woman's psyche, "Whereas much contemporary sociology of the body focuses on bodily surfaces, pregnancy, childbirth, and the postnatal body are interesting not just in offering surface change but also in affecting internal experiences of the body" (p. 110). The psychological transformation of self that occurs as a woman becomes a parent has been noted as a rebirth of self as her sense of self-as-parent is cultivated (Partridge, 1988). According to Partridge (1988) as the fetus/child moves through developmental stages, the mother is propelled on her own transformational journey, one that she navigates consciously. This magnitude of change (from woman to mother) may initiate the opportunity for psychological, physical, emotional, and spiritual change.

Partridge (1988) describes the mother's process of developing a sense of self as parent, and parental identity as a complex psychological birth. Partridge's proposed practical implications, although applicable to the prenatal period, have no mention of pregnancy and are only suggested for evaluation of parenting related to crisis intervention for children. Partridge's recognition of the psychological birth women go through in becoming a mother aligns with BAM's theory.

BAM theory focuses on the dynamic development of a mother's identity and sense of self beginning with the birth of her baby. BAM recognizes the prenatal maternal period as integral to a woman's transition into motherhood; however, pregnancy is primarily viewed as the preparatory phase for motherhood. This will be followed by a review of research related to pregnancy as a rite of passage by drawing on developmental

and anthropological-based theories regarding the transformation of woman to mother that begins during the prenatal period.

Overview of BAM

The process of becoming a mother (Mercer, 2004; Rubin, 1967) has been largely explained through the Becoming a Mother (BAM) theory, which evolved from the earlier version formerly titled Maternal Role Attainment (MRA) theory. These theories create the foundation for much of what is known about the transformation women go through during pregnancy, childbirth, and early parenting. BAM theory views pregnancy as preparing a woman for her new identity as mother built on the woman's changing concept of self. This theory relies heavily on the woman's transformation of self-identity as mother with less attention to the woman's psycho-emotional aspects of self. A review of the history of BAM is presented followed by an overview of how BAM regards the pregnancy and the theory's view on the transformation of self.

History of MRA

Maternal Role Attainment (MRA) theory, the early version of BAM theory, was coined by Rubin in 1967 to explain and demystify maternal identity. The original theory was derived from nurses' field notes of their interactions with 15 women during pregnancy and in the first month after birth. The bulk of MRA research is based on external evaluation of how women absorb and retain information in order to function and perform tasks appropriate to their new role as mother. Maternal identity was considered an endpoint based on a woman's mastery of her new role as mother and successful "task fulfillment," or "performance and cognitive-affective phenomena" that pertain to motherhood (Mercer, 2004; Rubin, 1967).

Acceptance of maternal identity as a fixed role fulfilled post birth prevailed until the early 2000s. In 2004 Mercer, one of Rubin's students, challenged this concept and proposed retiring the term MRA and replacing it with the term Becoming a Mother (BAM) to reflect a "continual process-based experience into a role with no clear endpoint" (Mercer, 2004, p. 227). One of the challenges in critically evaluating what MRA and BAM theory offer to today's understanding of motherhood is that there have been significant changes and contradictions within the theory's progression from MRA to BAM.

Mercer's rationale for redefining and renaming MRA as BAM theory was to include the continuous and ongoing development and expansion of self as mother as a central component of the theory, rather than having it focused on an endpoint identity. With this Mercer explains, "an enlargement of self occurs as a woman achieves a maternal identity in BAM. An expansion of her maternal identity continues as she rises to new challenges in motherhood by making new connections to regain confidence in the self" (Mercer, 2004, p. 231). It seems Rubin (1984) was considering this concept as well in her later work, since she ceased using the term MRA and instead made reference to the continual evolvement and morphic changes of motherhood.

Pregnancy in BAM Theory

PPN, MFA, and BAM theories converge around the concept that becoming a mother occurs during pregnancy. BAM is one of the limited theories that explicitly discuss the importance of the prenatal period for women specifically, and not just women in regard to the development of the fetus. According to Rubin (1984), pregnancy offers the opportunity for a woman to begin constructing her maternal identity. Mercer (2004)

expanded the former MRA understanding of the role of pregnancy by drawing on prenatal attachment research (Siddiqui & Hagglof, 2000) and PPN concepts (Lyman, 2005; Verny et al., 1981). Mercer (2004) introduced the importance of a woman accepting her fetus as a separate being as part of the maternal activity that commenced during pregnancy. BAM acknowledges pregnancy as preparation time for a woman's behavioral and cognitive tasks associated with attainment of maternal identity to develop. Often referred to as a "preparatory or preliminary period," pregnancy was deemed the first stage in Rubin's progressive stages of maternal role attainment.

Rubin (1984) described an inward focus and "gathering in of herself" during pregnancy that was an essential aspect of how mothers prepared for this life transformation (p. 88). She also noted that a "psychological incorporation" of the woman's self-concept occurred as an "interdependent and symmetrically parallel [process with] the biological development of the fetus and the pregnancy" (Rubin, 1967, p. 9). This suggests that the development of a woman's sense of self parallels her fetus' growth beginning during pregnancy, not at birth. Additionally, a woman's acknowledgement of her pre-nate in utero and the developing relationship with her fetus are considered fuel that transforms the woman's sense of self. Mercer (2004) reinforces this concept by stating, "the qualitative research reaffirmed the transition to motherhood as an intensive commitment and active involvement that begins before or during pregnancy, with the woman beginning preparation by seeking information and caring for herself and baby" (p. 231).

Yet, there is reason to question whether BAM oversimplifies the transformation women undergo during pregnancy. BAM does not explicitly address a woman's

consciousness and more often than not, refers to changes in the woman's traits and behaviors rather than inner psycho-emotional state or self-concept. As mentioned, there is some discussion of the psycho-emotional, psychosocial, and self-system implications. The next section explores BAM's concept of transformation of self as a way to highlight what is known about the trajectory of becoming.

Transformation of Self within BAM

BAM recognizes the transition to motherhood as “a major developmental life event” (Mercer, 2004, p. 226) that includes a new conception and transformation of self (based on the persona) that results from “the woman's engagement or commitment in experiencing herself as a mother” (Mercer, 2004, p. 230). Engagement is central to the transformative process of self and is described as an “enlargement of self” and “commitment to and involvement in defining her new self” (Mercer, 2004, p. 226) as a mother. This process of transforming self involves: (a) moving from the known to unknown, (b) changing of self-system, and (c) experiencing external validation of self.

Known to unknown. The growth and transformation a woman experiences is a result of the transition from moving from the known to the unknown (Rubin, 1984; Rogan et al., 1997; Mercer, 2004). Rubin (1984) states, “from onset to its destination, childbearing requires an exchange of a known self in a known world for an unknown self in an unknown world” (p. 52). This suggests the possibility of evolution of consciousness yet that is not explicitly considered within BAM theory and research.

Change of a self-system. Later BAM literature (Rubin, 1984; Mercer, 2004) addresses the role of a woman's psycho-emotional integration of her whole self into the process of becoming a mother. Rubin (1984) names the various components that

comprise a woman's self-system, such as ideal self, self-image, body image, and womanly image. Although this is the first mention of a woman's whole self, including her psycho-emotional-spiritual aspects of self, there is very little discussion of the implications of these aspects of self in her transformative process from woman to mother and how that might impact her consciousness.

External validation of self. According to BAM, a woman's sense of self as mother is largely shaped by the feedback she receives from her environment, rather than from within herself. This external-based input and validation is fundamental in shaping a woman's maternal identity.

Although each of these categories help to better understand the transformations women experience in becoming a mother, they do not address the inner, psycho-emotional changes in consciousness and if and how these changes impact the woman's sense of self, thus requiring further investigation that this study aims to fulfill.

Summary of BAM Limitations

There are several limitations within BAM theory worthy of consideration. BAM theory is based on the objective and pathologically oriented evaluation of a nurse researcher who determines whether or not a woman is successful as a mother versus a more sociological and feminist approach that is based on the mother's perspective and experience (Rogan et al., 1997). Later BAM research acknowledges the shortcoming related to having a researcher rather than subjective maternal input to determine successful maternal role identity fulfillment (Mercer, 2004).

Another limitation relates to the emphasis on thoughts, behaviors, and traits, versus feeling and internal processes. Dan Siegel (2007) clarifies that emotions are not

traits, but states of being. It is a limitation to define a mother based on a state of being, especially since states of being are ever-changing. Mercer (2004) admits to this shortcoming by stating that the “observed maternal behavior may be inconsistent with a woman's perception of her confidence in mothering or how she feels as a mother” (p. 229). The limited attention to a woman’s inner world, including her conscious awareness, psychological growth, and emotional well-being and transformation eclipses the value of her potentially evolving consciousness as this shift in identity emerges, thus requiring further study of consciousness within the process of becoming a mother. This underscores the need for a deeper understanding of women’s inner experiences to better evaluate if and how a woman’s consciousness can evolve through the process becoming a mother.

Previous BAM research solely focused on how a woman performs as a mother whereas this study is looking at how a woman transforms as a person in the process of becoming a mother. Mercer & Walker (2006) highlight the need for future research to better understand how the internal processes can support resiliency and increased self-awareness.

The limitations of BAM’s theory of maternal identity are noteworthy in that the theory does not acknowledge the woman as an individual, larger than her role as a mother. Even though later BAM research acknowledges the continual process of becoming a mother throughout motherhood it does not recognize motherhood as the initiation into an opportunity where evolution of self is possible—whole self, not just mother-self. There is suggestion that the experience of mothering propels a woman’s transformation and personal growth within the BAM literature; however, it is not

explicitly explored. Rubin (1984) wrote, “the underlying stability and consistency of the feminine identity promotes the accommodation and adaptation in an enlarging and changing interpersonal and physical space during the lifetime” (p. 25).

BAM and Developmental Theories

Mercer (2004) acknowledges that the psychosocial development experienced by a woman as she becomes a mother is congruent with developmental and transition theories. BAM literature also recognizes the need for the process of becoming a mother to be acknowledged as a developmental milestone, which is commonly referred to as significant period of growth and transformation often marked as a rite of passage and/or meaningful transitions in life. Mercer (2004) states “the woman's transformation and growth of self in becoming a mother is congruent with psychosocial developmental and transition theories” (p. 231), thus warranting a closer look at the literature that focuses on life changes. In an effort to create synthesized coherence this literature review will now explore research on rites of passage, human development theory, and transition theories. The next section highlights research that addresses the movement of one stage of life to the next, such as the life transition women go through during pregnancy from woman to mother.

Pregnancy as a Life Transition

Viewing pregnancy through the lens of transformation offers the opportunity to understand the potential available for the evolution of consciousness during this life period. Mulkins and Verhoef (2004), predominant researchers on the transformative process, define transformation as “an evolving and expanding process of personal growth and enlightenment, during which, individuals experience shifts in how they think and

interact in the world” (p. 230). This definition of transformation is used as a framework for understanding how the movement from one stage of life to the next can catalyze the evolution of a woman’s consciousness during pregnancy. Theories that specifically address major life changes, such as rites of passage theories, liminal theory, human developmental theories, and life course theories are reviewed as a way to explore the significance of a woman becoming a mother and the potential this experience can have for her consciousness.

Rites of Passage

Becoming a mother has been recognized as a significant life event and rite of passage that has been explored through anthropological and psychological research (Davis-Floyd, 2004; Mercer, 2004; Prinds et al., 2014). Robbie Davis-Floyd, prolific women’s anthropologist, defines rites of passage as “a series of rituals designed to conduct an individual (or group) from one social state or status to another, thereby effecting transformations both in society’s perceptions of the individual and in the individual’s perception of her – or himself” (Davis-Floyd, 2004, p. 17). The transition into motherhood is understood as a rite of passage in that it has the potential to change a woman’s sense of self, her values, and her ideas about what gives meaning to life (Chan, 2016; Davis-Floyd, 2004; Prinds et al., 2014). The transformation of self that occurs when a woman becomes a mother has been referred to as a profound, psychological (Prinds et al., 2014) and bio-psycho-socio-spiritual change (Chan, 2016). Rites of passage are inherently positioned to promote profound internal change due to the opening that is made available via the transitional period. Davis-Floyd explains, “one of the chief characteristics of this liminal, or transitional period of any rite of passage is the gradual

psychological ‘opening’ of the initiates to profound interior change” (Davis-Floyd, 2004, p. 22).

The rite of passage of pregnancy is often punctuated with a sense of being in between worlds. In other words, pregnancy elicits a feeling of being different than who one was and not yet fully submerged into who one is becoming (mother). This feeling of being in between is described as liminality.

Liminal Period

The transitory nature within rites of passage is commonly referred to as liminal space, a term often used in relationship to pregnancy. Liminality is the “state of being betwixt and between, neither here nor there—no longer part of the old and not yet part of the new” (Davis-Floyd, 2004, p. 18). The Turnerian perspective (Turner, 1967) of the liminal nature of pregnancy is that it is both a state and a becoming at the same time (Davis-Floyd, 2004). According to Davis-Floyd (2004) the liminal state of pregnancy is inherently a place of profound growth. The interplay of inner and outer change is unique during pregnancy and unlike any other period in life. Theories of human development (the study of how people grow, change, and adapt across the lifespan) provide insight into how life-changing events shape, change, and establish a person’s sense of self and relationship to the world.

Human Developmental Theory

Developmentalists focus on life transitions and study the nature of change, the forces that stimulate it, and how people respond and change to different experiences throughout the lifespan within the context of a socially changing culture. “Transition experiences represent a strategic approach to the possibilities of studying lives in motion.

Transitions makes up life trajectories, and they provide clues to developmental change” (Elder, 1998, p. 7). Central to developmental theories is the concept that individuals “have the capacity to move forward, to change, to adapt, to heal, and to attain optimal mental health or wellness” through the process of moving from one experience and phase of life to the next (Eriksen, 2006).

The predominant developmental theories were reviewed to see how pregnancy and parenthood were addressed. According to Galinsky (1987), founder of the six stages of parenthood, “the studies of lifespan psychology, like those of adult development, have also minimized the place of parenthood” (p. 6) and pregnancy. Consequently, the review of literature revealed limited discussion of pregnancy and parenthood outside of BAM theories.

Black, Holditch-Davis, & Miles (2009) are among the few researchers who recognize the act of becoming a mother beginning in pregnancy as a developmental milestone within human development theory and life course theory. They acknowledge the role pregnancy has as an impactful transitional and developmental period for women. This vantage point is the foundation for the present study and is unique. It is more common within the literature to find that the event of childbirth (rather than pregnancy) is recognized as the life-changing event.

Black et al. (2009) used a life course theory framework to explain women’s experiences of becoming a mother of a medically fragile preterm infant. This multidisciplinary study was based on individual lives within a structural, social, and cultural context in effort to recognize the life span developmental passage for mothers of high-risk newborns as adult maturation that comes with being a parent. The researchers

were interested in the social context in which maternal development occurs and claimed that the study participants entered a prenatal maternal liminal state once they became aware of having a high-risk pregnancy. Black et al. (2009) discussed how being in this liminal state motivated the participating woman to integrate change of who they were and how they viewed the world as part of their process of development as an adult woman and mother. In other words, the researchers noted that the liminal state served to propel the women in the trajectory of their life course path. This study used a life course framework to evaluate the change that women go through in becoming mothers and found that high-risk mothers entered a state of being in between who they were and who they were becoming during pregnancy. It is likely that this life course framework of change would show that a similar process occurs for low-risk pregnant women.

Pregnancy has been recognized to propel internal growth and development for the woman (Duncan & Bardacke, 2010). Duncan & Bardacke (2010) state:

The life course perspective on human development suggests that each major period of development during the life span brings a unique set of opportunities and challenges. Human pregnancy is a remarkably dynamic period of growth and development that poses significant physical and psychological challenges for pregnant women and their partners. (p. 190)

Pregnancy has also been referred to as a psychosocial transition.

A psychosocial transition is a major life event that redefines how one sees the world, expectations of life, and oneself (Garland, Carlson, Cook, Lansdell, & Speca, 2007). The discovery of a disease can catalyze a psychosocial transition, a phenomenon that is widely discussed in the literature, particularly within the realm of cancer-based

research (Carlson et al., 2003; Garland et al., 2007). The enormity of change associated with a cancer diagnosis can, for some, be positive fuel to personal introspection, growth, and evolution. Garland et al. (2007) claimed that a cancer diagnosis can at times initiate positive change in a person's life. Their research demonstrated that a "diagnosis may actually provoke patients to begin an internal search for greater awareness and a sense of meaning and purpose in life" (Garland et al., 2007, p. 2). While pregnancy is a phase of development and not a disease, there is agreement within the literature that this major psychobiological life-changing event has the potential to propel a woman into a psychosocial, life-changing transition (Davis-Floyd, 2004; Donegan, 2015; Duncan & Bardacke, 2010; England & Horowitz, 1998; Fedele, 2016; Glynn & Sandman, 2011; Hoekzema et al., 2017; Mercer, 2004; Partridge, 1988).

Transition of Motherhood

Another study worthy of mention is Nelson's (2001) review of the findings from nine qualitative research papers on the transition to motherhood. According to the review's findings, engagement was seen as the entryway to personal growth and the catalyst of transformation. Nelson (2001) claimed that process of actively engaging in motherhood served as a catalyst of personal growth and transformation. However, these findings were based on women who were caring for and interacting with their infant (postpartum), thus relegating motherhood as a life experience that occurs post birth and not during pregnancy.

Nelson's (2001) core categories of engagement, growth, and transformation were defined as fundamental aspects of transitioning to motherhood that included: expansion of self, becoming, growth and development, encountering the ghosts of mothering

received, redefining self/relationships, incorporating motherhood into sense of self, world transforming, dreaming, alterations in self, sense of shared community with all mothers, question ourselves as transformed to mother, integration and wholeness, mindfulness to the child. These categories can be integral to a woman's evolution of self during pregnancy. Despite the fact that Nelson (2001) only studied mothers post birth, this framework and the key concepts outlined are applicable to pregnancy. This gap in addressing the prenatal period and the understudied potential available for women's growth during pregnancy further illustrates the need for the present study to investigate the potential for a woman to evolve her consciousness during pregnancy. Insight gained from PPN and MFA research demonstrates that motherhood begins during pregnancy yet the lack of synthesized coherence among the literature has historically prevented researchers from considering this perspective as a guiding point in research development.

The compilation of these findings, along with what has been presented in the rites of passage, liminal states, and developmental theories literature, demonstrates consistency in overlapping themes that pregnancy and childbirth are pivotal, life changing events for a mother's sense of self. The research and theory review of the life transition of pregnancy brings language and depth to the transformation that occurs within a woman's inner world that PPN, MFA, and BAM theories have been limitedly addressed. An understanding of the monumental psycho-emotional and spiritual opening and change that is instigated via the process of pregnancy presented in this section in combination with what is known about the neuroplastic changes provide strong evidence of the possibility for a woman to evolve her consciousness during pregnancy.

Similar to the BAM research, the research presented in this section has been based on an observer's perspective, not the subjective experience of pregnant women thus requiring examination of research regarding the meaning women make of their pregnancies.

Existential Meaning Making within Pregnancy

Existential meaning-making is a concept that transcends religion and spirituality and speaks to a person's own inner sense of how they make meaning in the world. According to Prinds et al. (2016) the past several decades of research have focused on how people make sense of pivotal life circumstances. Investigation of the spiritual and existential ways of making meaning of life have gained popularity within palliative care research and have minimally been applied to maternity-based studies (Prinds et al., 2016). Prinds et al., (2016) argue that the:

Previous research suggests that the impact of considerations related to the beginning of life may be similar to those at the end of life. These events are gateways that encircle life, and both of them may facilitate considerations related to existential meaning making. (p. 1)

This suggests that the prenatal maternal period may hold the potential for transformations in the same way that palliative care acknowledges meaning making and evolutionary potential of awareness at the end of life.

In 2014 Prinds et al. conducted a thematic analysis of the literature on existential meaning-making related to the transition to motherhood among mothers of full term born babies. The authors concluded that the:

Transition to motherhood is considered a pivotal and paradoxical life event.

Through the lens of existential psychology, it can be interpreted as an existentially changing event, reorganising values and what makes life worth living, and to some women also being interpreted as a spiritual experience. (p. 733)

Much of the review discusses the spiritual experiences women have as a result of becoming a mother and how these experiences transform and evolve her sense of self. Experiences of connecting with higher powers, having profound life-altering sensations, feeling the soul of the child, feeling blessed, and experiencing a closeness with spirit or god were all mentioned as key influences in women's existential experiences of becoming a mother (Prinds et al., 2014). These findings suggest the potential for consciousness evolving experiences that promote inner growth, transformation, and development for a woman during pregnancy.

Researchers have noted shifts in maternal consciousness (beginning as early as the first signs of pregnancy) as a result of the woman's awareness of her new identity as mother (Davis-Floyd, 2004). The lack of control a woman has of her body and pregnancy along with the changes in her body and sense of self often propel a woman into transformation of how she sees and experiences herself in the world, thus catapulting her into a new sense of self. Davis-Floyd (2004) explains:

Already her conception of self is being tested – her body is doing things on its own, and she must cope with her total lack of control over these changes. By the time she has fully accepted the reality of her pregnancy and gone public with the news, neither she nor those close to her will see her quite as they did before. (p. 22)

Davis-Floyd (2004) is widely recognized as being outspoken about the transformational nature of pregnancy to predispose a woman to experience psychological growth. Davis-Floyd (2004) claims the psychological growth and transformation that occurs during pregnancy is unique and unlike any other time in normal life. Researchers have noted the existential aspect of pregnancy, and even a spiritual element that includes and transcends the neurobiological experience of pregnancy (Prinds et al., 2014, 2016).

Prinds et al.'s (2014, 2016) theoretical examination through an existential lens supports the claim that women undergo a transformation during the process of becoming a mother through the use of prayer and meditation, yet there is no discussion about how this transformation impacts a woman's consciousness. As stated, meditation and spiritual practices are well known tools to evolve consciousness, so it is fair to assume that these practices would facilitate the evolution of consciousness, particularly during this time period when women are more inclined to be introspective and willing to grow, according to the literature on the neuroplasticity of pregnancy.

In conclusion, this section points to the milestone of development and one of the biggest transitions in life that a woman experiences. The magnitude of this life transition has the capacity to propel profound inner change for a woman's sense of self, psycho-emotional awareness, brain, mind and body, amplified by the neuroplasticity of pregnancy, which all contribute to the potential of a woman's consciousness to evolve.

Research Question

The goal of this study was to examine the following research question through a grounded theory lens: "How can a woman's experience of pregnancy evolve her consciousness?"

CHAPTER 3:
RESEARCH METHODS

Research Approach

This chapter presents the rationale for the methodology selected and includes a discussion of qualitative research with a description of grounded theory and focus group research; methodological problems and limitations; the research design; research question; operational definition; a description of the participants including criteria for selection, sampling method, recruitment, and ethical protection of participants; data collection; role of researcher; data analysis procedures; and, theory development.

Qualitative Research

A culture of inquiry that supports generating meaning in the process of data analysis led to a qualitative study. The primary researcher was particularly drawn to how qualitative research considers the social construction of meaning that people make individually and in relationship to one another. The researcher wanted to gain insight into participant-generated meaning about the social process within the culture of pregnancy that may influence a woman's consciousness.

A constructivist approach of qualitative research was selected to explore this topic of inquiry. A constructivist approach allows the researcher to investigate a discourse and how it defines reality. The constructivist process involves the researcher constructing meaning from the data collected, which is integral to generating a grounded theory. The way language is used in the way people talk about the world and their experiences is an important role in the "social construction of what we regard as 'knowledge'" (Willig,

2013). Socially available ways of talking about a process informs how people experience that process. This approach was used to see if by changing the discourse might the socially available reality of what is experienced by pregnant women also change.

Qualitative research allows for the opportunity to create a new discourse, which in turn can generate a new phase of knowledge. By adopting the lens of a constructivist approach, the researcher was able to create an environment that simulated the potential for our current culture of pregnancy. The research method evoked a dialogue that included pre-existing discourse as well as invoked a new conversation that may expand our understanding of how the experience of pregnancy can evolve a woman's consciousness. Grounded theory is useful for investigating life cycles (Glaser, 1992) such as pregnancy making this an applicable method.

Grounded Theory

The primary researcher determined that grounded theory was an appropriate approach for developing a theory grounded in data provided by prenatal and perinatal experts that explores what might be possible for women's consciousness during pregnancy for first time pregnant, healthy women in the United States. Grounded theory supports the generation of a new theory derived from the collected data and is well suited for examining a social process that occurs within a culture (Shaughnessy & Zechmeister, 1985). Grounded theory is considered an emergent method that has dynamically developed since it was originated; there can be misunderstanding of the capacity and utility of the newer versions of this methodology (Fassinger, 2005). The rendition selected is known as the abbreviated version of constructivist grounded theory (Strauss & Corbin, 1994) and was a pragmatic choice in consideration of time and resources. The

constructivist approach invites the researcher to participate in the construction of the knowledge gained from the data collected.

Other methods, such as Interpretative Phenomenological Analysis (IPA) were considered and rejected. IPA would have been applicable had the primary researcher investigated the lived experiences of pregnant women or couples. The methodological problem overcome by using grounded theory was the risk of a fatal flaw associated with using IPA with experts rather than those who experienced pregnancy directly. Grounded theory was the most appropriate selection for studying discourse among professionals, which was deemed critical for gaining insight into the culture and social process of pregnancy.

Focus Group

A focus group format was used to collect data for this grounded theory study. A focus group with recognized experts in the field was conducted rather than individual interviews in order to simulate a microcosm of society, which is dynamic and relational. The maternal inner-life/psycho-emotional process of pregnancy happens in relationship to society, the culture of society, and society's healthcare providers and educators. Conducting a focus group was selected as a purposeful way to cultivate a dialogue among professionals to generate data to produce an applied theory. A driving motivation behind the research question and design was to contribute a theory that is applicable for professionals to implement. Therefore, it was important that the theory emerge from a dialogue with professionals.

Methodological Problems/Limitations

The methodological problems that were not overcome by using grounded theory were due to time constraints and limited funds. A classic grounded theory study would have involved ongoing focus groups until data saturation was reached, requiring more time and funds than available for the study. Therefore, an abbreviated version was utilized.

There are other limitations that are inherent to grounded theory research, such as the issues of induction and suitability for psychological study. The original purpose of grounded theory was to allow new theories to emerge from the data (Willig, 2013).

Firstly, the problem with induction is that it does not factor in the variable of the researcher. Grounded theory assumes the research speaks for itself, however the reality is that the researcher's perception informs the questions asked of participants and later influences the categories (Dey, 1999). The constructivist version of grounded theory (Willig, 2013) addresses the concern of induction—the influence of the researcher's perception of observations—and aims to provide a reflexive grounded theory. Pidgeon and Henwood's (1997) recommendations to use memos to document assumptions, values, sampling decisions, and interpretations was followed. Proponents of the constructivist version of grounded theory recognize that there is no completely objective view of social reality and that the researcher's assumptions and expectations will shape the theory that is developed based on the data (Willig, 2013).

Secondly, only recently has grounded theory been accepted as a qualitative research method for psychological research. The suitability of grounded theory for psychology research has been challenged because it was originally intended to study and

explain social processes compared to the nature of experience. Grounded theory fits this research inquiry, because this study aimed to investigate the process of pregnancy that exists both within the context of the pregnant woman's inner experience and the context of pregnancy within society, and how culture influences the pregnancy process. Grounded theory aims to understand what is happening in the world between people and inside people's minds (Willig, 2013).

Research Design

This is a qualitative study using grounded theory method. A focus group of eight participants 2 hours in length was conducted to collect data. The focus group was moderated by the primary researcher via teleconference using the Free Conference Call service. Participants received an email prior to the focus group with the research question, list of fellow participants, and an outline of the probing questions. The discussion was recorded via the Free Conference Call recording service. A back up recording was done on the primary researcher's secure password protected personal computer using Quicktime software. The recording was then transcribed by Verbalink company into a Word document.

Research Question

The goal of this study was to examine the following research question: "How can a woman's experience of pregnancy evolve her consciousness?" The investigation began with a field of inquiry focused on maternal consciousness rather than formulating a specific research hypothesis. This approach is common within grounded theory research as it allows the researcher to be open to what the data reveal in order to create a grounded theory (Charmaz, 2006).

Operational Definition

The definition of maternal consciousness that was provided to this study's focus group participants is: Prenatal maternal consciousness encompasses all or some of the following:

- A woman's capacity to observe/witness/understand her own needs, behaviors, and attitudes in regard to mothering.
- A woman's ability to intentionally direct her attention inwardly toward her dyadic relationship with her baby in utero and perceive a feedback loop.
- A woman's awareness of her developing identity as a mother and how this influences her perception of herself, partner, parents, siblings, and world.
- A woman's awareness of the evolution of her maternal self in relationship to her developing baby in utero.

Participants

Criteria for Selection

The goal was to gather data from nationally and or internationally recognized prenatal and perinatal professionals such as midwives, researchers, educators, obstetrician/MDs, parenting coaches, and perinatal health specialists who had at least 10 years of professional experience. These professional domains were selected in order to create an environment that mimics the social conversation that occurs among professionals who are interested in and are supporting the process of pregnancy and to generate a microcosm of the culture supporting pregnancy. In essence, the goal was to create a "glimpse into the world" of professional supporters of pregnancy (Hollander,

2004, p. 605) and to use grounded theory in such a way that the focus group conversation constructs reality (Strauss & Corbin, 1994).

Sampling Method

Due to the nature of the research question and design, a high-level knowledge of the prenatal and perinatal period as well as experience working with pregnant women was sought from participants. Therefore, a purposive sampling method of professional experts was applied.

Recruitment

A list of recognized experts in the field was generated. The list was divided into the categories based on profession containing a list of two to four possible participants in each domain. Each prospective participant was ranked on a likert scale 1 to 3 (with 3 being highest) based on the following two criteria: (1) accessibility to the researcher and (2) level of professional recognition. Scores were summed per candidate and then ranked. The list was prioritized based on this ranking and an invitation letter was emailed to the top-rated candidates from each professional category. If the highest-ranking participant was unavailable then the next highest-ranking potential participant was invited. Eight participants were recruited for this study.

Ethical Protection of the Participants.

This research study was reviewed and approved by the Academic Committee of IUPS and was determined to meet the ethical obligations required by University policies. All efforts were employed to protect the participants' anonymity, maintain confidentiality, and to promote open focus group input. All identifiable information that

is obtained in connection with this study will remain confidential and will be disclosed only as required by law.

Data Collection Procedures

The focus group was homogenous, new, and concerned (Willig, 2013) for the following reasons. First, the group was homogenous in that all of the participants are recognized professional experts. Second, this was a newly formed group of experts. Third, the focus group composition was also concerned (Willig, 2013) in that they all had a deep concern for this subject.

Data were gathered through a two-hour focus group via a semi-structured format. Questions were presented one at a time to the entire group with the invitation to respond and dialogue about a topic. Participants responded popcorn style (participants voluntarily and spontaneously respond without a predetermined order or sequence). The primary researcher moderated the focus group and invited anyone who had not responded to the current question to speak if they desired before the next question was presented. Question prompts were used to help generate rich data (See Appendix A). The group was closed after asking if anyone had final thoughts, insights, or reflections about the discussion.

Role of Researcher

In qualitative research, including grounded theory methods, researchers are part of the research process rather than objective analyzers. The researcher's interpretation of the data is integral to the analysis. For this reason, it is expected that the primary researcher acknowledge and negotiate personal and professional preconceptions per the reflexivity protocol within the constructivist grounded theory method (Charmaz, 2006). In this methodology it is important for a researcher to utilize memo-writing, introspection, and

input from the secondary researcher to reflect on and grapple with experiences, perspectives, and beliefs that may inform the interpretation of data, shape the analysis, and assist in the construction of a theory. In the constructivist approach, a researcher's reflexivity skills are fostered through the analysis process and theorizing practice.

According to Charmaz (2006), "professional researchers and many graduate students already have a sound footing in their disciplines before they begin a research project and often have an intimate familiarity with the research topic and the literature about it." (p. 17). She continues, "In short, sensitizing concepts and disciplinary perspectives provide a place to start, not to end" (p. 17). The vantage point of the researcher informs the analysis process. However, professional and academic ideas and biases are not forced onto the data, instead a grounded theorist assesses how preconceived research interests and perspectives intersect with the emerging data throughout the coding process.

The following is a brief summary of the primary researcher's professional background as it relates to this study. The primary researcher has a master's degree in Prenatal and Perinatal Psychology and is getting her doctorate in Transformational Education with a Specialty in Prenatal Parenting. She has been in private practice as a conscious pregnancy, educator and consultant and early parenting coach for women and couples since 2009. The professional background of the primary researcher includes an earlier career in qualitative research that involved data collection by focus group recruitment and moderation and data analysis and interpretation.

A secondary researcher participated in this study's analysis process. The secondary researcher reviewed the coding and analysis in order to support reflexivity.

The secondary researcher verified that the primary researcher followed coding protocols. The secondary researcher also challenged the primary researcher when there was a question of bias leading the meaning making of the data. In those instances, the primary researcher re-assessed and re-coded in collaboration with the secondary researcher.

Data Analysis Procedures

The primary researcher collected data from a 2-hour focus group in August 2015. After the focus group the primary researcher listened to the recording and wrote down initial thoughts and impressions of the data collected. The focus group recording was then transferred to a password-protected computer. The session was transcribed by Verbalink, an online transcription consultancy service. Following the transcription, it was reviewed while listening to the recording to insure accuracy. While reading the transcription memos of personal reflections of the data were noted.

Coding

The coding method used in this study was reflective of the constructivist mode (Charmaz, 2006) and incorporated aspects of Charmaz's constructivist, interpretive approach (2006), Glaser's (1978, 1998) classic approach, and Strauss and Corbin's (1990) reformulated approach.

Firstly, the initial coding process began with manually coding the transcript with substantive (descriptive) codes per paragraph rather than line by line. This paragraph-coding approach was selected as a way to better capture the meaning and intention behind the data collected. The process continued by grouping the substantive codes into code families based on similarity. Then the code families were analyzed and merged to become clusters of meaning.

Secondly, focused coding proceeded with the use of conceptual, thematic thinking and memo writing as a way to discover how the clusters of meaning fit together.

Categories emerged from exploring possible themes within the grouped clusters of meaning. The primary researcher used conceptual thinking and theorizing supported with memo writing to evaluate what categories shared a theme(s) and could converge into larger categories. Five core categories emerged from analyzing all of the categories.

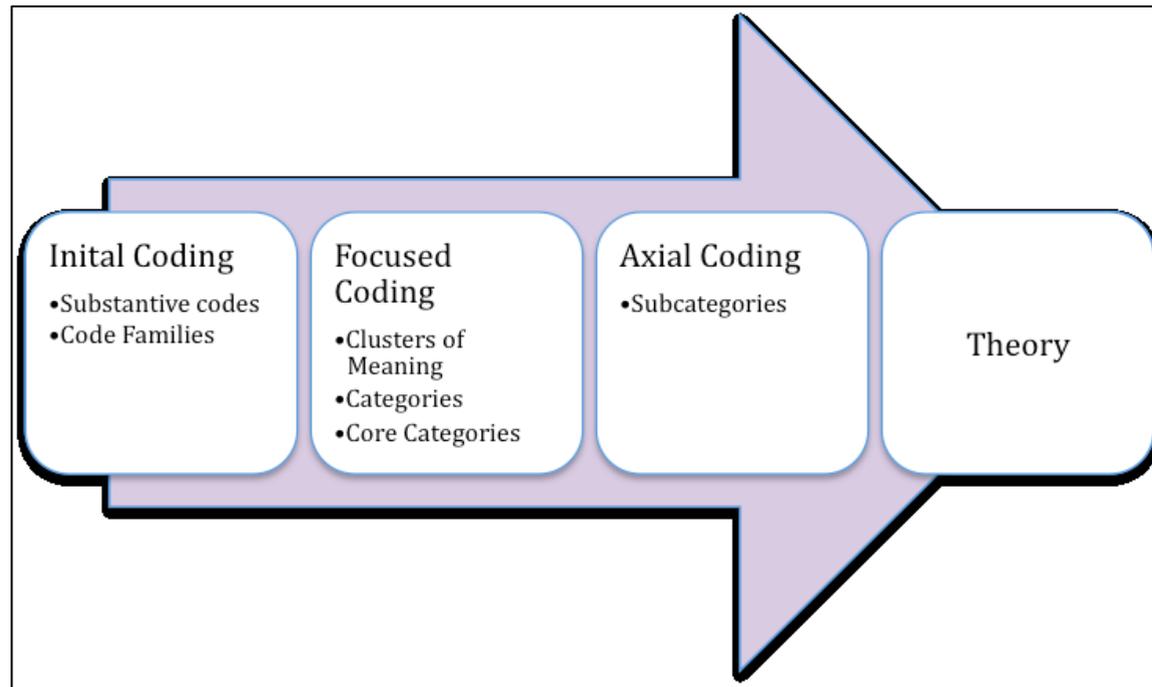
According to Charmaz (2006), in the constructivist method it is possible to have numerous core categories emerge.

Thirdly, axial coding was conducted in order to include and unify the dimensions of each core category which involved a process of identifying the subcategories that revolved around the essence or axis of each of the core categories (Charmaz, 2006).

Theoretical sorting, theorizing, and mapping (diagramming) was then used by the primary researcher to investigate the relationships among the core categories.

Finally, discovering the interdependent relationships between the core categories was the cumulative step in the analysis process that allowed the primary researcher to generate a theory grounded in the reflexive interpretation of the data.

Table 2. Coding diagram.



Theory Development

Per the abbreviated constructivist grounded theory method, the primary researcher generated a theory grounded in qualitative data collected from seasoned clinicians' and researchers' experience in the field of prenatal maternal health. The practice of theorizing occurred throughout the analysis process (Charmaz, 2006), the pinnacle of which was the interpretation of the relationship among the core categories that produced an interpretive theory. Interpretive theory development is associated with a constructivist grounded theory method as compared to a positivist theory development for the objectivist grounded theory approach (Charmaz, 2006). According to Charmaz (2006), "Interpretive theory calls for the imaginative understanding of the studied phenomenon" (p. 128). A researcher's interpretation of the analysis is integral to theory development and is acknowledged as a key component of this methodology (Charmaz, 2006).

In the constructivist approach the researcher is encouraged to view theorizing as a creative, imaginative process rather than a linear process. A pioneer of this interpretive method, Charmaz (2006) explains, “theoretical playfulness enters in. Whimsy and wonder can lead you to see the novel in the mundane. Openness to the unexpected expands your view of studied life and subsequently of theoretical possibilities” (p. 135–136). The goal of developing a theory within this approach is to create new meaning and understanding of the topic of inquiry. Charmaz (2006) further explains:

Theorizing cuts to the core of studied life and poses new questions about it. . . . A theory can alter your viewpoint and change your consciousness. Through it, you can see the world from a different vantage point and create new meanings of it.

(p. 128)

Through this theorizing practice the researcher developed a process-oriented theory that addressed the study inquiry, “How can a woman's experience of pregnancy evolve her consciousness?”

CHAPTER 4

RESULTS

“There is some deeply unfathomable intelligence at work behind the amazingly intricate series of cellular events [during pregnancy] . . . and when you can give yourself over as part of that design, as an offering to life as it composes with you, in you, through you, that brings a lot of strength and tranquility.” Participating Expert 1

Results Summary

This research aimed to find out if, and how a woman’s consciousness evolves during pregnancy. This chapter presents the results of an abbreviated version of a social constructivist grounded theory study of prenatal maternal consciousness for healthy, low-risk pregnant women in the United States. The findings represent the positive potential available to healthy pregnant women.

The culmination of a grounded theory study is the generation of the Maternal Consciousness Sequence (MCS) theory from the dynamic relationship between the core categories. According to the interpretation of the analysis, integral to pregnancy is the cyclic movement through a repeated sequence of the five core categories identified as the five phases of the MCS theory: Emerging Maternal Consciousness, Feeling Unsafe, Feeling Resourced, Feeling Safe, and Feeling Empowered. These five core categories subsume the collected data (Glaser, 1978). The core categories are the phases of the sequential process that empowers a woman as a mother and builds on her emerging maternal consciousness as well as support her potential to evolve her consciousness. The interdependent relationship among the core categories answers the question, “How can a woman's experience of pregnancy evolve her consciousness?” The sequential, cyclic

nature of this cumulative process of moving from one core category to the next builds maternal consciousness.

The foundation for the MCS theory is that the cultivation of maternal consciousness evolves a woman's consciousness. Each time a woman cycles through the MCS her Feeling Empowered increases which further develops her Emerging Maternal Consciousness. The results indicated that a pregnant woman needs to feel empowered in order for her to evolve her consciousness.

The analysis of the data supported the concept that pregnancy is a unique opportunity in a woman's life for self-transformation. In addition to the monumental physical changes, the participating experts agreed that this process offers the opportunity for a woman's consciousness to evolve. Movement through the MCS theory cultivates a woman's maternal consciousness, thus evolving her consciousness. The reason why the MCS theory is unique to pregnancy is because it is founded on the reality of a woman becoming a mother. According to the data, during pregnancy maternal consciousness first emerges when a pregnant woman connects with her baby in utero. More specifically, a woman's connection to her baby in utero and the reality of being pregnant is the catalyst for her maternal consciousness to emerge and develop as she continuously cycles through the MCS phases.

Coding Analysis

The constructivist analysis method (Charmaz, 2006) that was used for this study's analysis produced codes, themes, categories, and subcategories. This chapter presents the core categories, subcategories, and initial substantive codes (in that order) to demonstrate how the theory evolved from the data.

The initial coding process began with manually coding the transcript with substantive (descriptive) codes per paragraph rather than line by line. This paragraph coding was selected as a way to better capture the meaning and intention behind the data collected. The process continued by grouping the substantive codes into code families based on similarity. Then the code families were analyzed and merged into clusters of meaning (sometimes called themes). Next the focused coding grouped the clusters of meaning together to discover the five core categories. Subcategories were identified as they revolved around the essence or axis of each core category (Charmaz, 2006). This process is known as axial coding and is conducted in order to include and unify the dimensions of the core categories. Finally, discovering the interdependent relationships between the core categories was the cumulative step in the analysis process that allowed the primary researcher to generate a theory grounded in the reflexive interpretation of the data.

The core categories as well subcategories are italicized throughout this chapter for ease in identification. Data codes are included in italics and used as a way to demonstrate the building blocks of the proposed grounded theory and the researcher's organization and meaning making of the data.

In a grounded-theory study it is standard to use to use the specific language identified in the data. Therefore, the use of the phrase "baby in utero" is used when referring to the prenat within this chapter and the word "prenate" is used in the other chapters. The focus group participating experts are quoted in order to highlight findings and show how the analysis is grounded in the data collected.

This chapter begins with a description of the study's focus group participants, the research question, summary of theory and results, and a detailed account of the study results.

Subjects

This section includes a detailed description of the participating subjects. Eight experts (five females and three males) within the field of bio-psycho-social prenatal and maternal health volunteered and provided consent to anonymously participate in this research, which consisted of a 2-hour remote focus group. Participants convened remotely within the focus group format to discuss their professional knowledge, views, and experience based on working with women during pregnancy. All of the participants possessed higher educational degrees beyond undergraduate level (seven of the eight possessed either an MD or PhD, plus one held a MA). The majority of the participants are parents with the exception of one. The following is a brief description of the professional, academic, and scholarly expertise of the participants.

Participating Expert 1 is an early development specialist, parent coach, authority on prenatal development and adoption, textbook and parenting book author, and international speaker.

Participating Expert 2 is a prenatal and early parenting consultant, educator, coach, author, and speaker. Specialization is in stress management related to pregnancy, birth, and early parenting, how life experiences impact the transition to parenthood, and the implications of early experiences on child abuse and trauma survivors.

Participating Expert 3 is a certified nurse midwife with more than 4 decades of experience, founder of international childbirth education course and childbirth

educator/mentor program, book author, and an international speaker to prenatal and birth professionals.

Participating Expert 4 is a licensed midwife for more than 4 decades, registered nurse, early parenting educator and coach, academic and medical speaker, and a prenatal and birth training program facilitator with an emphasis on conception, gestation, and birth imprints, as well as applicable therapies.

Participating Expert 5 is a professor, clinical psychologist specializing in women who experience depression or anxiety related to perinatal issues, and researcher who brings together the fields of psychopathology, developmental psychobiology, and perinatal psychiatry.

Participating Expert 6 is a stem cell biologist, epigenetics researcher, scientific and book author, educator on mind-body influence on physiology, and international professional speaker.

Participating Expert 7 is an educator and author in the fields of somatic psychology and cranial sacral therapy, professor of embryology, clinical practitioner and educator on the treatment of prenatal and perinatal trauma in adults, infants, and children with neurological and developmental issues.

Participating Expert 8 is an obstetrician, author, speaker, teacher, and advocate for midwifery care and the ethics of woman's' right to informed consent and refusal.

Research Question

The primary research question was: “How can a woman's experience of pregnancy evolve her consciousness?” The investigation was built on the assumption that pregnancy may impact a woman’s sense of self and trajectory of self-development, and

that pregnancy may be a developmental milestone that can evolve a woman. Exploration of how the findings relate to the research question is addressed within the following sections.

Core Category 1: Emerging Maternal Consciousness

This first category, Emerging Maternal Consciousness, initiates the transformational potential of the maternal prenatal developmental milestone of becoming a mother. Emerging Maternal Consciousness is the foundation for the other core categories. As a healthy, supported woman progresses through her pregnancy she may have the opportunity to repeatedly move through the MCS and all the while increase her connection with her growing baby in utero and further develop her maternal consciousness.

This core category, Emerging Maternal Consciousness, consists of five subcategories, Conceiving is Monumental Shift in Consciousness, Being Aware of Baby in Utero, Moving from Self to Other, Cultivating Heart-to-Heart Relationship with Baby in Utero, and Growing a Baby Alters Consciousness. These subcategories are generated from data codes that reveal the intricate insights into the process of how maternal consciousness emerges through conception and connection with her growing baby in utero.

The participating experts emphasized the importance of recognizing pregnancy and the process associated with conception and discovery of the baby in utero as the opening that is uniquely associated with the emergence and development of maternal consciousness. Participating Expert 6 explained, “Our evolution [as a humanity] is really tied up with parenting and raising children.” The emphasis on how pregnancy may hold a

potential for healthy, supported women to evolve was echoed throughout the focus group discussion.

The data collected and analyzed showed that maternal consciousness emerges for a woman as a result of conceiving and discovering she is pregnant (Conceiving is Monumental Shift in Consciousness). The unique neurophenomenology and neuroplasticity of pregnancy affords new ways of perceiving, thinking, feeling, and behaving, particularly as she becomes more aware of her baby in utero (Being Aware of Baby in Utero). According to the focus group of participating experts, pregnancy is often the first time in most women's lives when her consciousness shifts from self to other (Moving from Self to Other). This process is catalyzed by the act of conceiving and discovering pregnancy, as well as the experience of creating a heart-to-heart connection (Cultivating Heart-to-Heart Relationship with Baby in Utero) with her growing baby in utero. The data suggested that shifting one's awareness from "I" to "us" or from "self" to "another" is an advancement in consciousness. According to the participants, a woman's consciousness may evolve as her pregnant brain and body transform, as well as through her experiences of prenatal bonding (Growing a Baby Alters Consciousness). The unique neurophenomenology of pregnancy holds the potential to expand a woman's awareness. The participating experts agreed among themselves that the emergence of maternal consciousness can catalyze an increase in awareness and evolve a woman's consciousness.

Conceiving is a monumental shift in consciousness. The role of conception in relationship to maternal consciousness is important to highlight because it initiates the first core category, Emerging Maternal Consciousness. Participating experts clarified the

importance of conception and how its significance is often disregarded within our current models of care, yet it is what initiates the emergence and development of maternal consciousness. Participating Expert 1 stated, “The Vedas say conception is the most monumental moment of any life. Conception is just kind of overlooked and thought of as something automatic like digestion or elimination; we don't pay attention.” Viewing conception as more than just the physical beginning of pregnancy allows for an expanded understanding of how this life changing event has the potential to impact a woman's consciousness.

The data suggested that conceiving in and of itself, can be consciousness altering for a healthy woman. According to the participants, the physical and energetic presence of a baby in a woman's body has the potential to open and ignite a pregnant woman's energy and body into a growth stage. Participating Expert 4 commented, “I think just the experience of becoming pregnant is altering the mother's consciousness.” Data suggested that the simple act of a woman connecting with her growing baby in utero has the capacity to alter the pregnant woman's consciousness in a way. This was explained as part of the phenomena of pregnancy. According to the data, for a human being to realize and relate to another growing human being inside her body can be consciousness altering. As conveyed by Participating Expert 1, “You are sharing your body . . . pregnancy is the most monumental moment of any life”

The participating experts further elaborate on the nature of how maternal consciousness can evolve consciousness. Participating Expert 4 stated:

There's this sort of heavenly being that's becoming very earthbound. And the mother, when pregnant, is very earthbound, but also very connected to where that

spirit is coming from. So, there's an openness in her field [of awareness] and in her body.

This opening within a woman is what allows for the ignition and expansion of her maternal consciousness. The experts discussed how the opening of awareness in pregnant women is what creates the opportunity for consciousness to evolve. Participating Expert 4 noted, "There's an awareness in the mother and the father of this new presence, where the mother is now sharing her body with a whole new energy. I think that just the experience of conception is altering in itself." Beyond the initial awakening of maternal consciousness that occurs with conception there is an ongoing emerging of maternal consciousness that has the potential to increase as the woman is aware of and builds a relationship with her growing baby in utero.

Being aware of baby in utero. According to the data, being aware of baby in utero can occur at any point during conception, discovery, and/or gestation. This is the process in which a mother comes to experience and perceive her baby in utero as a separate being who is growing inside her body. Connection with her baby in utero is fundamental to propelling her into a new experience of self. The depth of a woman's awareness of her growing baby in utero is promoted by a woman feeling safe and supported enough to be curious and present with her pregnancy (which will be discussed in detail in core categories 3 and 4). The participating experts discussed how this element of being aware of her baby in utero catalyzes her maternal consciousness and at the same time shifts a woman's perception of herself, others, and life, and therefore awakens the opportunity for an increase in consciousness.

Being Aware of Baby in Utero has a double function in the Emerging Maternal Consciousness category, because it marks the first time a woman acknowledges her baby in utero as well as the first time she recognizes herself as a mother. Participating Expert 1 explained how the sentience of the baby in utero invites a woman to respond as mother, “This baby is coming in with a whole selfness of itself,” and when pregnant women have a recognition of their baby in utero, such as this expert described, it is because they can sense the sentience of the presence embodying within them. Awareness of the sentient presence of her baby in utero often creates a shift in the woman’s attention from self to other.

Moving from self to other. Becoming a mother is the first time in most women’s lives where she is faced with the opportunity to put someone else before herself on a very profound and intimate level. This act of moving from self to other was recognized as a pivotal shift that furthers the emergence of maternal consciousness. Participating Expert 4 expressed, “Sharing her body with the new energy of baby alters her perception.” This transformation evokes a natural shift from “me” to “we.” Pregnancy instills a woman’s natural instinct to put another human being before herself. This unique consideration of someone else, for many, has not been experienced to this extent prior to pregnancy.

Participating Expert 6 explained:

It is a radical switch that happens from “I’m caring about myself and my survival, biological imperative,” and then all of a sudden, “I’m pregnant; now I’m really caring about this other person’s biological life and their survival.” And that changes the consciousness of women who then look at the world from a

completely different point of view. It's not me at the center anymore, but it now is the child.

During pregnancy the biological imperative, (the driving force to move from feeling unsafe to safe) shifts so that a mother maintains the motive to survive for herself and for her baby in utero.

According to the participating experts, pregnancy is a neurophenomenological event and developmental phase because the presence of a baby in utero effects a woman's neurobiological experience and that consequently influences her consciousness.

Neurophenomenology is an overlap of the study of neuroscience and phenomenology that aims to better understand the whole, embodied human experience of the mind and consciousness. Participating Expert 6 illustrated this phenomenon:

I think that before pregnancy our normal thinking is about our own personal life and our own personal safety. And once a woman recognizes she's pregnant, there's a profound consciousness change because now her life is not so much about her safety anymore at all, but about the safety of her developing child. So, she takes on a completely different level of consciousness regarding her own perception about her own life and what's going on and really is now taking on another person's life to be conscious of and to be caring for.

This process of moving from “me” to “we,” initiated by the biological shift in a pregnant woman's body, continues to develop as her baby in utero grows. The data suggested that it is the ongoing heart-to-heart relationship a woman has with her baby in utero that fosters the development of her maternal consciousness throughout her pregnancy process.

Cultivating heart-to-heart relationship with baby in utero. Once a woman recognizes that she is pregnant and acknowledges her connection with her baby in utero she then has the opportunity to cultivate a heart-to-heart relationship. This underscores how the connection between mother and baby in utero promotes the emergence and development of maternal consciousness.

The expert participants discussed several methods that facilitate this dyadic, bi-directional, heart-to-heart relationship. The participating experts described the techniques used in their respective prenatal practices that support a woman in cultivating a heart-to-heart relationship with her baby in utero. The findings specified how slowing down and tuning in to connect with baby in utero and one's self as mother are integral to the process of cultivating a relationship between mother and unborn baby. Participating Expert 7 described using the technique of slowing down and tuning in that involves listening to the baby's heart rate to support the development of the dyadic relationship. It was stated:

I like to invite the mother to hear the heart rate of her baby in utero. I've spent a lot of time with this over the years, and I've really seen quite a number of women have almost ecstatic experiences when they can actually sense the heart rate of their baby.

According to the data, for some pregnant women feeling her heart rate and her unborn baby's heart rate can catalyze or deepen her heart-to-heart connection with her baby in utero. For other women, the act of turning attention inward to imagine the unborn baby's experience was discussed as a useful way to help a mother bond with her baby in utero. Participating Expert 3 explained, "sending a message to baby or receiving a

message so she slows down and tunes in and takes time to draw or even journal about it” helps to establish a woman’s heart-to-heart relationship with her baby in utero. Another method discussed was the use of birth art. Participating Expert 3 added:

What might help cultivate a woman’s heart-to-heart relationship with her baby is birth art, making an image of a womb with a view, where she does a meditation and actually turns her attention inward and visualizes her baby in the womb, what the womb life might be like. And then to have her imagine: If there is a message she wants to send her baby or receive from her baby, what would that be?”

The examples provided by the participating experts are led by skilled practitioners in order to begin or further the continuous cultivation of the heart-to-heart relationship between mother and baby in utero. As pregnancy progresses, the heart-to-heart relationship between mother and unborn baby has the potential to grow as well.

Growing a baby alters consciousness. The data highlighted how growing is a creative time and sharing a woman’s body via pregnancy is both life changing and consciousness altering. The intimate experience of connecting with her baby in utero is conducive to increasing a woman’s awareness of herself physically, mentally, emotionally, and even spiritually. According to some of the participating experts, being in a growth state is necessary for the evolution of consciousness. Being that pregnancy is a physical growth state a woman is well positioned to optimize the growth period of pregnancy to evolve her consciousness.

The Emerging Maternal Consciousness subcategories are interdependent and propelled in a spiral, nonlinear nature. The cumulative experience of each of these subcategories create the starting point for emerging maternal consciousness as well as a

place of return and deepening as a woman moves through the MCS theory. In this way the Emerging Maternal Consciousness category acts as the catalyst that awakens maternal consciousness and continues to be part of the cyclic phases that support the ongoing evolution of her consciousness.

The next section reviews the results relevant to the second core category, Feeling Unsafe, and its pertinence to the MCS theory. Movement through all aspects of the MCS, including the state of feeling unsafe promotes the development of maternal consciousness. The results showed how feeling unsafe as a result of stress and trauma can serve as a critical component that moves a woman through the MCS theory.

Core Category 2: Feeling Unsafe

The Feeling Unsafe core category results are paramount in addressing the research question, “How can a woman's experience of pregnancy evolve her consciousness?” because once discovery of pregnancy and connection with the baby in utero occur and maternal consciousness has emerged, it is natural that feeling unsafe (physically, mentally, or emotionally) occurs throughout during pregnancy. These feelings can act as a catalyst that has the potential to propel a woman through the MCS theory. The function of the Feeling Unsafe category in the development of maternal consciousness is explained through the following subcategories: (a) Feeling Need to Protect is Limiting, and (b) Feeling Disempowered Limits Growth.

Feeling need to protect is limiting. As previously discussed, participating experts noted the unique nature of pregnancy and how it engages a woman's biological imperative to survive as an individual and as a species. The instinct for a woman to prioritize care for her baby in utero opens her to the opportunity to engage with her

prenate consciously and potentially have more freedom from her own subconscious beliefs and behaviors from past conditioning. However, Participating Expert 6 emphasized, “whether you're paying attention or not, your subconscious is always on guard for everything.” The implications of a pregnant woman being in a protected state were widely discussed in the focus group.

The disadvantage of the biological imperative is that it can make a pregnant woman vulnerable to feelings of unsafety. According to the data, feeling the need to protect oneself limits growth and consequently limits the evolution of consciousness. Albeit normal and common for women to feel fear and unsafe during pregnancy, the way she responds to these feelings is what determines whether or not she moves through the MCS or remains feeling chronically unsafe. The data analysis included feelings such as anxious, sad, depressed, scared, and nervous in this category of Feeling Unsafe. The theme of how protective mechanisms (in response to the unpleasant feelings associated with Feeling Unsafe) can shut down growth was a thread presented throughout the data.

The participants agreed among themselves that when a pregnant woman is in a protective state she is perceiving from her subconscious and reacting to a memory.

Participating Expert 6 emphasized:

The protection response is quite unfortunate because it shuts down our intelligence, more or less, because when we get into more protection, we do more reactive/reflexive kind of behavior protection is moving away from a stimulus and being closed . . . so being open and closed is not possible at the same time.

Protecting versus growing was emphasized throughout the data with specific focus on how feeling unsafe limits a pregnant woman's self-awareness, and therefore self-development during times of protection. The prevalence of the fear-based mechanism of protection was underscored by Participating Expert 6, "It is critical to recognize that unfortunately, people may not be operating from consciousness . . . anything fear-based will really draw up an old program, and then whatever that [fear-based] picture is becomes manifest in the behavior."

According to the participating experts, the protective state that is associated with feeling unsafe is dominant much of the time during pregnancy. Consequently, this makes it more difficult for some pregnant women to move out of a state of protection and into a state of present awareness and feeling safe. These states (Feeling Unsafe and Feeling Safe) are exclusive and biologically driven. "Cells can be either in growth or cells can be in protection, but they can't be in both at the same time, because they're mutually exclusive," was reiterated by Participating Expert 6. Feeling the need to protect, albeit a vulnerable state, is a critical component to the MCS because it propels a woman to the next stage of Feeling Resourced so that she can return to feeling safe.

The participating experts underscored the potential neurobiological effects of feeling unsafe for a pregnant woman and how being in a protective state limits her growth and opportunity to evolve her consciousness. Participating Expert 6 commented that as neurobiological beings, cells hold memory, this helps to explain how deeply embedded programmed behavior is compared to consciously chosen behavior. It was stated, "When we're not being mindful, we're operating by subconscious programs which

are not reflecting our consciousness and our intelligence. These are downloaded behaviors.”

Feeling the need to protect is a biological drive that can work for or against pregnant women. The drive to protect one’s self while pregnant can be the motivation to secure resources to take care of herself (see Category 3) so that she can return to a feeling of safety (see Category 4) both in body and mind. Conversely, the drive to protect can halt a woman’s growth, as Participating Expert 6 clarified:

The moment the picture of fear comes in, that's a mind that gets shut down. And the processing then is done by programs from the past, and the most prominent of those programs are anything to do with fear.

The participants discussed how the experience of fear in a medical doctor’s office can be prevalent for some pregnant women and how this can limit her ability to increase her self-awareness. Participating Expert 6 represented the group with his comment:

The moment there's a fear . . . when the doctor comes in and says ‘X,’ BOOM, then fear sets in for women, and the unspoken understanding is Okay; we're fear based. We [the doctors] are the authority over you and we are running the show.

However, these feelings of discomfort, fear, and/or unsafe can also be what motivates some women to make changes within themselves and in their circumstances, which can then help them evolve beyond their limitations and propel them into the resourcing stage of the MCS Theory.

Although fear can sometimes be useful to initiate change, it also can be damaging. Feeling fear can go hand in hand with feeling disempowered, which leads to the next subcategory, Feeling Disempowered Limits Growth.

Feeling disempowered limits growth. Feelings associated with disempowerment, which according to the data collected are perpetuated by the current culture of prenatal maternal care, can potentially be used as catalysts to create momentum within the MCS. The participating experts commented that the prevalent model of prenatal care commonly exasperates a pregnant woman's susceptibility to feeling unsafe by use of disempowerment. This in turn may undermine a pregnant woman's capacity to return to feeling safe and evolve her consciousness.

Participating experts discussed how a pregnant woman's potential to evolve her consciousness is vulnerable as a result of the challenges she faces while navigating through the culture of prenatal care. The data suggested that the system is not favorable to the development and empowerment of the pregnant woman. The participating experts commented on how common it is for the medical model of care to perceive pregnancy as a condition and pregnant women as patients. Participating Expert 8 reflected:

I did 28 years of hospital birthing and now 5 years of home birthing. The world that I used to live in is a fear-based world that pregnancy is an illness, pregnancy is a disease and must be treated. And this is the model by which 98 percent of women in America are cared for.

Decision-making within the current culture of care was discussed as another way in which women feel disempowered. Participating Expert 8 pointed out that, "there's all these interventions leading down a path where lots of choices are removed from the woman and the ability to really be responsible for her own course." This lack of decision making and support for pregnant women can have disempowering consequences that promote feeling unsafe and consequently limit growth.

The data suggests that the lack of individualized care compounded with fear-based strategies regarding the baby in utero's safety can perpetuate disempowerment. Medical protocols are less focused on the individual safety and well-being of the pregnant woman and/or her baby in utero and are more focused on managing liability and anticipated crises, according to the data. Participating Expert 1 commented on how the experience of feeling disempowered and the need to protect one's baby in utero often go hand in hand, "Once they [medical professionals] pull out the 'Well, your baby could be injured or worse' card, then women will often just give up their own autonomy for the sake of the safety of their baby" Feeling disempowered during pregnancy was considered counterproductive to the development of maternal consciousness by the participating experts.

When a pregnant woman defers her maternal sensibilities about what she needs for herself and/or her baby in utero to a medical authority, her opportunity to move through the MCS can be interrupted, because this sets up a pattern of disempowerment and thereby perpetuates a woman's experience of feeling unsafe and uncertain of herself and her capacities. Participating Expert 8 explained, "If you ever sit in on an International Cesarean Awareness Network meeting, and you listen to the women tell about their birth stories they all break down in tears because they have had experiences where they've been disempowered." Depending on numerous variables, feeling disempowered can inhibit a woman's development of maternal consciousness or it can be what drives a woman to reach out for support to resource herself, which is the next stage of the MCS Theory.

The point was made that all pregnant women feel unsafe from time to time. It is by Feeling Resourced (category 3) a pregnant woman is able to move toward Feeling Safe (category 4), which then leads to Feeling Empowered (category 5) and therefore contributing to her ever-growing Emerging Maternal Consciousness (category 1). This recurring sequence underscores the importance of Feeling Unsafe (category 2) as what urges a pregnant woman to resource herself so that she can move herself through the MCS.

Core Category 3: Feeling Resourced

The third phase of the MCS Theory, Feeling Resourced is the bridge from Feeling Unsafe to Feeling Safe. It is a process-oriented phase wherein a pregnant woman returns to a safe and secure place within herself either by her own efforts or by the support of another. For the purpose of this study resources are considered supportive actions or activities that are done internally or with the help of an individual or group that nurture and support a pregnant woman's mental, emotional, and physiological states. Identifying and utilizing her inner and outer resources is how a pregnant woman can shift from feeling unsafe to feeling safe. As a result of feeling resourced a pregnant woman is able to reconnect with a felt sense of safety and competence and thereby continue to evolve her consciousness. The Feeling Resourced phase of the sequence is pivotal in propelling a woman through the MCS and ensuring that she does not remain vulnerable in feeling unsafe and consequently limiting her ability to evolve.

The data pointed to two key motivations for pregnant women to get resourced in order to move from Feeling Unsafe to safe in the MCS. A pregnant woman is motivated to shift her state due to: (a) her own mental-emotional discomfort or (b) an impulse to

take care of and mother her baby in utero. The participants noted that it is important for a pregnant woman to have help in recognizing her power and responsibility to prepare her baby in utero for the world, specifically by being aware of her felt sense of safety within the world. The experts emphasized that the lens through which a pregnant woman perceives her world as safe or unsafe informs the development of her baby in utero and her development as a mother. When a pregnant woman is aware that she can influence the long-term development of her baby in utero by what she thinks, feels, and gives attention to, it can motivate her to resource herself in order to return to a state of feeling safe. The data highlighted how the process of feeling resourced and empowered can both support a woman in her experience of welcoming her baby in utero and help her evolve her consciousness.

The participants discussed the implications of being well-resourced compared to being under-resourced. When a pregnant woman is under-resourced, she is at risk of remaining in a state of feeling unsafe, which can be expressed as chronic anxiety and/or a multitude of other uncomfortable states. As previously discussed, when in a chronic state of feeling unsafe and without adequate resourcing support, a pregnant woman's opportunity to evolve her consciousness is diminished. The following summarizes the data related to the data related to effective ways for pregnant women to get resourced, so they are able to progress in the sequence by once again Feeling Safe.

The core category of Feeling Resourced addresses the essential need for Generating an Internal Felt Sense of Safety. Imagine the core category as a wheel, then Generating an Internal Felt Sense of Safety is the hub of the wheel and represents the essence of the core category. The wheel with all its spokes is divided down the center to

delineate the two types of strategies for Generating an Internal Felt Sense of Safety, (a) Getting Internally Resourced and (b) Getting Externally Resourced. For the purpose of organizing the presentation of results, these two types of strategies are labeled as primary subcategories. It is important to note that although these two avenues of Feeling Resourced are delineated, according to the participating experts they are in fact complementary and co-exist in a way that mutually serves pregnant women to return to feeling safe and move forward in the MCS.

Getting internally resourced. This section is subdivided into two subcategories that represent the essence of Getting Internally Resourced. The first is Reducing Fear and Increasing Body Awareness and Presence and consists of the following clusters of meaning: opening up, being curious, being mindful, and addressing imprints. This first subcategory discusses tools that can be used to generate an internal shift toward a more positive state of being. The second subcategory, Getting Resourced from Dyadic Relationship presents the results related to how the dyadic prenatal relationship can help a pregnant woman engage with her baby in utero and cultivate an internal felt-sense of safety and well-being. The data indicated that the process of becoming resourced may help a woman create a healthy bond with her baby in utero by making decisions based on baby in utero, welcoming her child, and cultivating heart-to-heart relationship with her baby in utero.

The participating experts qualified a resource as something that generates inner stability for a pregnant woman. It was pointed out that it is important not to automatically assume or generalize that something, such as assuming one's relationship with spirituality or nature, is a resource. Participating Expert 5 explained, "It is their relationship to the

resource that is important. Is it a resource for the pregnant woman that is stable and fluid?” For example, some women may have a relationship with God or Spirit that supports them, and others might have a relationship that is grounded in guilt and judgment. Participating Expert 5 continued:

I've worked with a woman who is very religious, in a traditional religious way, and her orientation to her God was extraordinarily fraught. So, everything she did in her pregnancy was not going to be good enough. She was full of self-blame and [believed] that God was judging her. So that's why I say it's more the quality of the orientation to the source than the source per se.

How the relationship with God, Spirit, or anything else makes a woman feel about herself is the point when reviewing the results related to Getting Internally Resourced. The experts agreed that what is a resource to one woman may not be a resource for another woman, and, therefore, it is important for each woman to identify what is individually resourcing.

Reducing fear and increasing inner body awareness and presence. This subsection begins with the results of how getting internally resourced can be a source of support to gain access to more positive states of being. The first positive state discussed by the participating experts relates to feeling reduced fear and generating a felt-sense of safety.

One of the primary methods discussed in regard to reducing fear and generating a felt-sense of safety was using internal body awareness and visceral awareness of one's heartbeat and pulse. Connecting with one's biorhythm (feeling one's heart beat) was mentioned as a tool used to help pregnant women slow down and connect internally.

Feeling or listening to one's own heart beat was noted by Participating Expert 7 as an effective way to help a woman connect within herself and "get a sense of what's going on internally," and as a result tap into a felt sense of safety and be well resourced.

Coherent breathing, the process of slowing down the cycle of the inhale and exhale to sense and regulate heart rate was referenced as a way to become resourced by connecting with the body, breath, and heart rate in the present moment. Participating Expert 7 commented:

There's an emerging amount of literature now that talks about the effect of coherent breathing and heart rate variability, and particularly in regulating the mother's heart rate. And so that develops a lot of resilience, if that is a possibility for that mom.

Resilience builds an internal well of connection and calm, which consequently has the potential to create a new way of connecting internally and with her baby in utero.

Participating Expert 7 continued, "I invite the mom to then feel her own heart rate, feel the heart rate of her baby, and then do coherent breathing." The importance of giving attention to the biorhythms of the body was echoed throughout the focus group discussion as an effective resourcing activity that may generate a sense of connection and well-being.

Interoceptive awareness, a technique that is based on cultivating deep, internal focus as a way to reduce fear and generate a felt sense of safety from within was also discussed. Participating Expert 7 explained further:

I do a lot of work with pregnant moms in terms of what's called interoceptive awareness. I like the literature on interoceptive awareness, because that type of

internal body awareness of the viscera, and especially the heart, tends to reduce fear and anxiety in a person.

Similar to how coherent breathing works to build an internal state of feeling resourced, it is not the technique itself, rather the relationship it fosters with one's self that supports the ongoing process of returning to a felt sense of safety.

A lesser known resource emerged in the focus group analysis, and this is the influence of the maternal morphic field. This was described as something that is available within the collective consciousness as a resource to any and all who wish to access it. The maternal morphic field can be likened to a net that collects societal and cultural beliefs, both positive and negative. In other words, a grid of cultural consciousness. The data suggests that a woman can generate a felt sense of safety within herself, if she taps into positive cultural, societal beliefs that support her. For example, she may tap into all the women who have come before her who have birthed without pain medication to feel empowered and resourced regarding her upcoming birth. By accessing the maternal morphic field she is able to generate a sense of feeling safe, secure, and calm on her own, yet not alone because she is connected to something bigger than herself.

The morphic field was discussed among the experts as an energetic field of thoughts, experiences, and imprints of a particular group or population. Participating Expert 6 stated:

Rupert Sheldrake talks about morphic fields and how, when things are repeated in the world, there becomes a field of that information which is downloadable by other people experiencing the same kind of thing. And there's a lot of evidence supporting the morphic field, so if there is a real foundation of morphic field, then

it's a field of information from past experiences of other people who've gone through the exact same thing that an individual can pick up. And I think this might also be, again, another source that a woman may rely on . . . It's just like a thought, a download thought, a field thought. And that might influence us, because how a population is experiencing this process will influence how an individual will ultimately experience this process, not necessarily like direct contact, but through the morphic field that Rupert Sheldrake talks about, another source of information.

Opening up. According to the focus group analysis, the overarching objective of Getting Internally Resourced is to access inner support to reduce fear and generate internal safety. A felt-sense of safety was likened to growing, opening, exploring, and developing, all of which are considered conducive to evolving consciousness. Participating Expert 6 explained, “growth is moving to a signal, being open to take it in; and protection is moving away from a stimulus and being closed, to wall yourself off, so being open and closed is not possible at the same time.” Therefore, for a pregnant woman to grow she must be in a state of feeling safe and becoming internally resourced is key in moving into that state.

The data suggests that being in an open receptive state is integral to personal growth. Pregnancy was discussed as a paramount experience in a woman’s life that invites her to open up to herself and life in new and significant ways. The participants discussed that being pregnant is an opening, and therefore can enhance awareness of body, baby in utero, and the world. Participating Expert 6 highlighted, “I think that when a woman finds herself in the right place within herself and environment, that her

consciousness is more open; that she's more aware of her world, the surroundings, and the fetus that's inside of her. This enhances her intelligence and her ability.” A key element in being open is being curious enough to seek growth.

Being curious. Choosing an attitude of curiosity was revealed in the analysis as a way to get internally resourced. Being curious, and even having an attitude of wonder was presented as a way for a woman to marvel at her pregnancy experience. This process of being curious is conducive to opening up and evolving. Participating Expert 1 reinforced these findings, “To answer the question, what is essential for a woman to evolve her consciousness during pregnancy, I think that it is curiosity.”

The participating experts further discussed how being curious is about going beyond the physical experience of pregnancy and exploring the psychological, energetic, and consciousness aspects. One participating expert emphasized how much of the prenatal experience is taken for granted as physical mechanics, and how having the curiosity to go beyond that is central in developing an internal experience of feeling resourced. Participating Expert 1 conveyed:

I think there are so many beautiful opportunities right in the actual lived experience of the pregnant woman, especially the newly pregnant woman, that in our current cultural life are just overlooked. So maybe there's an opportunity to help a woman get more present and maybe encourage a curiosity about that very basic reality.

The focus group participants often had a tone of delight and inspiration in their voices as they discussed the possibilities available when a pregnant woman is being curious about her pregnancy, underscoring the importance of curiosity within the process

of feeling resourced. The analysis showed how simple and yet fundamental it is to support pregnant women's curiosity. However, the simplicity can make it easy to overlook the value of being curious.

The experts discussed that there are ways that practitioners can support women by modeling curiosity. Participating Expert 1 emphasized, "There's just these opportunities to be present with the mother, and marveling, and having an attitude of reverence and curiosity and wonder at the very simple, yet momentous things that are happening within her body." The curiosity and wonder a woman has toward her experience of being pregnant often requires an external support person's permission and encouragement so that she can tap into a felt sense of Getting Internally Resourced.

The implications of limited curiosity as result of past traumas, lack of feeling safe, or lack of feeling resourced were discussed by participants as a way to emphasize the importance of supporting a woman's internal process of feeling resourced. The shared perspective among the experts was reflected in this comment made by Participating Expert 1:

I think that for somebody who has had difficult experiences in the past, there's possibly a limit to curiosity. . . . if we look at stressed mice, their exploratory behavior decreases. It's not safe to explore when you're in that protection mode, when you're not in that growth mode, and so curiosity goes down.

When pregnant women are stressed, they are less able to feel safe enough to have an open curiosity about their inner and outer life. An attitude of curiosity helps a woman to be open to noticing and reflecting on her thoughts and feelings about becoming a mother

without the constriction of judgment or fear. This way of noticing is often referred to as being mindful.

Being mindful. Participating Expert 7 explained the increasingly popular use of the term mindfulness in US culture, “There's probably 1,000 or more research reports on the value and efficacy of mindfulness practice, and so that's why we're seeing much more of it.” The popular term mindfulness was often used during the focus group discussion. Being mindful was used interchangeably among the participating experts with being present, being aware, and being conscious. There was agreement that applying mindfulness to pregnancy is an important and primary way for pregnant women to get resourced from within, because it provides the opportunity to slow down, be present, and engage in the inner life of pregnancy. “This is about bringing more mindfulness to the process, becoming mindful of the body, becoming mindful of the psycho-emotional states and the effect that it has on the pregnancy and the subsequent birth and lifespan development,” as summarized by Participating Expert 7.

The group discussed the consciousness movement that is happening within our culture and how this has begun to influence a prenatal subculture by helping some women bring mindfulness to the process of pregnancy and birth. The data analysis revealed that supporting a woman to become mindful of her body and baby in utero's body, the sharing of her body, and the psycho-emotional states that arise in relation to her experience of becoming a mother are pivotal to the evolution of a woman's consciousness. During the focus group discussion, the following mindfulness concept was introduced by Participating Expert 7:

Being pregnant keeps a woman more mindful, meaning that she's now more aware of herself and her body and what's going on in herself physiologically. The significance of being more mindful, in my understanding, of course, is that when we are mindful, we are being conscious . . . and, when we are not being mindful, we are operating, obviously, by subconscious programs, which are not reflecting our consciousness and our intelligence.

Being aware of one's thoughts and body was noted as a simple and effective way to bring mindfulness into a woman's pregnancy. For example, Participating Expert 7 explained, "I like to work with very simple mindfulness practices and just help pregnant women simply become aware of their thoughts and of their body." The data analysis revealed the importance of supporting pregnant women to be mindful of their thoughts and feelings in relationship with their baby in utero as integral to Getting Internally Resourced and moving through the MCS.

Feeling resourced from dyadic relationship. Unique to pregnancy is the dyadic relationship. The feedback loop of the unique bi-directional relationship can be intentionally accessed and nurtured as a resource for a pregnant mother. As a healthy woman's pregnancy progresses the dyadic relationship grows. The results related to feeling resourced from the dyadic relationship are interrelated and occur throughout pregnancy sometimes in a progressive manner, and sometimes simultaneously. The dyadic relationship has two roles in the MCS theory: a) as the dyadic relationship grows, a pregnant woman's emerging maternal consciousness builds, and b) the dyadic relationship supports a pregnant woman's experience of Getting Internally Resourced.

The analysis revealed that the dyadic relationship may serve as an incentive to becoming resourced for a pregnant mother. The three main subsections show how giving attention to, and fostering, the reciprocal relationship between mother and baby in utero via: (a) supporting her in welcoming her child, (b) cultivating a heart-to-heart relationship with her baby, and (c) making decisions based on her baby, are integral and effective in the process of Getting Internally Resourced.

Welcoming her child. The analysis of the data points to the reality that to have a relationship with another being inside one's body is unique to pregnancy and provides the inherent potential for a woman's consciousness to evolve. Participating Expert 4 shared, "there's an awareness in the mother and the father of this new presence, where the mother is now sharing her body with a whole new energy." The data showed that there is a unique phenomenon of pregnancy. When a pregnant woman is aware of her baby in her body and open to her baby in utero's physical and energetic presence, the capacity to alter and evolve her consciousness exists.

The influence of the mother-baby prenatal relationship on a woman's consciousness was illustrated by Participating Expert 4's comment:

I think just the experience of becoming pregnant is altering the mother's consciousness, not that she really has to do something about that. There's this sort of heavenly being that's becoming very earthbound. And the mother when pregnant is very earthbound, but also very connected to where that spirit is coming from. So, there's an openness in her field, in her body. And the baby, being of the energetic field right before conception, as they're coming into the field of what's there or held by the mother and the father and their energetic fields,

there's already an imprint that is affecting the purity or the blueprint of how we all come in. Therefore, there's an awareness in the mother and the father of this new presence, where the mother is now sharing her body with a whole new energy.

And I think that the experience of conception is so altering in itself.

The results revealed that the unique prenatal relationship between mother and pre-nate can be nurturing, inspiring, encouraging, and overall resourcing. The experts discussed that whichever may happen first—either a mother is curious and open to the potential consciousness shift in herself or when she is open to her baby in utero as a sentient being with a heart-to-heart, consciousness to consciousness connection—she is creating the potential for greater connection between herself and her baby in utero. This relationship, once established, has the capacity to be an internal resource for the mother.

When a woman is connecting with her baby in utero she is fostering the dyadic relationship between mother and child, a dynamic that can be mutually supportive due to its reciprocal nature. By welcoming her child throughout her pregnancy, a woman is establishing a bond with her baby in utero, which enables her to receive positive feelings such as love, inspiration, appreciation, and perspective, all of which may foster her Getting Internally Resourced.

The results demonstrated that there are ways to help resource and empower a woman in her experience of welcoming her child that can also promote the evolution of her consciousness. Pointing out the responsibility a mother has for her baby in utero can be a way to motivate self-care and a deepening of her commitment to Getting Internally Resourced. Participating Expert 1 contributed:

Through the way that you, as a woman pregnant are experiencing your life each day, through how you think, what you're thinking about, what you're looking upon, what you're listening to, what you're worrying about or dreaming about. This is how you're preparing your baby for a world that can be better than the world you know. We can help a woman consider that her baby is constantly asking, "What kind of world am I coming into, Mommy, through your eyes?"

According to the results, being in relationship with her baby in utero simply by taking on maternal responsibilities can help further develop maternal consciousness. By putting her attention on her baby in utero regularly and perceiving her baby as a whole being, the opportunity to establish a heart-to-heart relationship with her baby in utero becomes accessible.

Cultivating heart-to-heart relationship with baby. The cultivation of a heart-to-heart relationship between a pregnant mother and her baby in utero was discussed as a subcategory in the Emerging Maternal Consciousness (category 1) as a factor that can nurture the evolution of a woman's consciousness. The analysis showed the potential for parallel growth to occur. As pregnancy progresses, so does a woman's cultivation of a heart-to-heart relationship with her baby in utero, her Getting Internally Resourced, and her Emerging Maternal Consciousness.

The experts described various techniques that facilitate this heart-to-heart relationship. In addition to the noted benefits associated with a pregnant woman turning her attention inward, imagining her baby's experience in the womb, and slowing down to attune and to connect with her baby in utero, Participating Expert 1 suggested that a

pregnant woman takes the time to tune in to herself as mother to cultivate a heart-to-heart relationship with her baby in utero:

There is often the awakening to the experience that her baby has come as whole being unto his/her self, and there can be a delightful curiosity as to whether some of the prenatal interests and impulses are generated from her baby.

The results revealed that dialoguing with the baby in utero can facilitate a deeper connection between the dyad. As mentioned previously, Participating Expert 3 uses a technique that invites a pregnant woman to imagine the message she wants to express to her baby in utero and sense what message her baby in utero might want to send her. By putting attention on her baby in utero and slowing down to listen, a pregnant woman naturally attunes to this reciprocal relationship and in some instances may take the opportunity to draw or even journal about the communication. Participating Expert 3 further explained that pregnant women claim that there are numerous benefits to this exercise:

The first time a pregnant woman ever really thought about her baby or thought about herself as the mother to her baby, because she's been so busy doing all the medical care, or doing the right things, or working all the time, and so forth. And afterwards she was able to make some different decisions about how she participated in pregnancy or maybe how she just felt about welcoming the child.

The participating experts emphasized the benefits of pregnant women becoming resourced by being guided or even simply given permission to turn their attention inward to connect heart-to-heart with their baby in utero, regardless of the technique.

The data suggested that the cultivation of a heart-to-heart connection with the baby in utero, and the prenatal bond can be conducive to a woman making decisions with the well-being of her baby as priority.

Making decisions based on baby. The results suggested that one of the central factors motivating a pregnant woman toward healthy choices is the well-being of her baby in utero. Thinking about her baby in utero and intentionally mothering was discussed as internally resourcing for a mother and a potentially positive influence on her decision-making during pregnancy. Participating Expert 5 commented:

In the subjective experience, we're very consciously connected to this child or children who are in utero. . . . I do think that what we know is that there is a great leverage, understandably, to bring in the health of the baby or the well-being of the baby for motivation, such as exercise, stopping smoking, other things like that.

The experts discussed that engaging in health promoting behaviors such as those mentioned above are commonly understood as resourcing actions for the mother. The findings suggest that being pregnant can often be the catalyst for a healthy pregnant woman to make decisions that support her health and well-being and are at the same time internally resourcing.

In addition to being motivated to make “good” decisions to benefit the baby in utero, the participants suggested that when a connection between a pregnant woman and baby in utero is made, that relationship is resourcing and can inform maternal decision making. The analysis points to a depth and richness to the dyadic bond that when fostered serves as a resource for the mother as well as the baby in utero. When this resource is encouraged it also has the potential to promote a way of making decisions that are

informed by a woman's relationship with her baby in utero and her maternal inner-knowing. What can get in the way of a woman being able to connect with her baby in utero is fear or feeling of unsafe, both of which can be generated from old, unhealthy imprints. These feelings will inevitably return throughout pregnancy, thus providing a pregnant woman with the opportunity to seek internal resources that will help her move herself toward a feeling of safety again. This pattern exemplifies the recurring and cyclic nature of how a woman can repeatedly move through the MCS throughout pregnancy on a path to evolving her consciousness.

Getting externally resourced. In order for women to be able to access the external support they need, resources must be available. A strong theme within the results was the availability of “fear-based versus trust-based” models of prenatal and perinatal care in the United States. Participating Expert 8 conveyed the consensus view of the focus group that in general, “hospital-based care is not designed to nurture or acknowledge the individual woman, because the prenatal care system is set up where it's large volume, shuffle them through.” The trust-based model is founded on individualized care that aims to resource and empower mothers. The results revealed that tending to pregnant women's individual life stressors and unique histories “is absent in our healthcare system.” According to Participating Expert 5, “doctors can do a very bad job of even looking at patients these days, because of the incredible demands on their time and the amount of paperwork.”

The next section of results focuses on the process of obtaining individualized, external support from a trained professional to help repair limiting, uncomfortable imprints and traumas. Feeling Resourced with the help of specialized psychology-based

prenatal care practitioners is not commonly integrated into standard care according to the expert participants. The group discussed the effectiveness of this subculture of care because it holds and supports a woman's whole being—her mind, spirit, and body, including her past experiences—as part of her healing journey and preparation for becoming a mother. The findings highlighted the importance of accessing support from a skillful professional to effectively address a pregnant woman's fears and traumas so that she can find her internal sense of resiliency and move toward Feeling Safe and Feeling Empowered.

According to the analysis, the evolution of a woman's consciousness is dependent on support that weaves together both internally and externally resourcing components. The complementary nature of feeling resourced from within, along with the external support of others can occur as part of a woman's journey throughout her pregnancy, optimally with the skillful support of practitioners, as well as her significant other (or baby's father) and community of family and friends.

There was discussion among the experts that most prenatal practitioners are inevitably influenced by the prevalent, conventional mindset and that produces a lack of understanding of pregnant women and their capacities. Participating Expert 3 stated,

Even in my own earlier work of childbirth preparation and as a midwife, I fell into this cultural pattern of preparing a woman for birth by really preparing her to be a good patient or an informed patient, putting all this energy into making sure she had enough information to do the right thing or avoid the unwished-for thing, and that there was very little energy on my part looking at awakening the mother and having prenatal tasks of preparation that help her awaken the mother [within],

because we were oriented to strengthen the archetype of the patient or the health consumer.

The results underscored the importance of the quality of prenatal and perinatal care and that the mindset of the prenatal practitioner can affect the pregnant woman and sometimes the trajectory of her pregnancy and birth, either positively or negatively.

The analysis revealed that becoming resourced with the help of a supportive, skilled prenatal practitioner who addresses the whole woman, body-mind-heart, and her baby in utero is important to nurturing the potential evolution of a pregnant woman's consciousness. The discussed avenues of external support went beyond what is typically offered in most obstetric and midwifery settings. One of the goals of prenatal support as revealed in the results is to create a safe family system with body-based, resourcing techniques for the pregnant woman. The results of this section are subdivided into four sections: (a) supporting a safe family system, (b) supporting the pregnant woman with psychological support, (c) providing resourcing techniques for women to incorporate into their daily lives, and (d) receiving PPN-based support.

Supporting a safe family system. According to the findings, before a woman can address past imprints, it is often necessary to stabilize her family system and create a safe place for her process. For this reason, the first subsection of this category focuses on a pregnant woman benefitting from the expertise of a skilled practitioner to support the family unit (woman, partner, baby in utero) as a whole. Participants explained that for a pregnant woman to experience a felt sense of safety the entire family system needs support. The goal of this support is to reduce the amount of fear and feelings of unsafety. Participating Expert 7 commented, "it is about offering the mom and the dad and the

whole family an experience of non-fright.” There are varying methods to support the family system to have the opportunity to continually return to a state of feeling resourced and safe even when facing fears and challenges.

The participants discussed how fear is a normal and an expected part of the pregnancy experience for parents. There are ways to resource the family system so parents can utilize fear to propel their inner growth and increase their capacity to experience safety in the midst of change and challenging circumstance. The qualities of professional insight and perspective that are supportive to the family system were identified by Participating Expert 7:

To *see* the pregnant mom, to *see* the dad, requires a very subtle set of eyes, to *see* the fear, and to *see* what I call the protection reflex as it manifests in the therapeutic relationship with the pregnant mom and family.

According to the results, this kind of attuned support and presence is a key factor in creating safe, psychological preparation and is often most readily available via complementary or alternative, holistic prenatal care modalities.

Supporting the pregnant woman with psychological support. The results suggested that a woman brings all of who she is and has ever been to her pregnancy. Anything within her that is limiting and unresolved may and often does arise, and if not supported, may interfere with the development of her maternal consciousness and advancement of self-awareness. When women “come into pregnancy with an insecure outlook they will be generating insecure chemistry,” cautioned Participating Expert 6.

Participating Expert 2 explained further:

Each individual woman or girl brings her entire lived body experience in all dimensions, all realms that we might imagine, to this period of time, to the time that she conceives through her experience of pregnancy, in whatever manner that is.

Well aware of this, the experts emphasized the need to support the whole woman with individualized prenatal care.

When a pregnant woman is supported to reflect on and integrate her whole self, including past experiences (positive and negative), as well as limiting, ancestral imprints as part of her healing and preparation for motherhood, she propels herself in her own evolution of consciousness. The emphasis on supporting the whole pregnant woman was echoed throughout the results. To underscore this point, Participating Expert 5 noted a shift in the point of view within the organization that sets US national standards. It was stated, “The NIH is putting a big emphasis on bringing in behavioral health and thinking about the whole person into primary care, which is, of course, OB.”

Participating experts agreed that moving toward individualized care supports the opportunity for the experience of pregnancy to evolve a woman’s consciousness.

Participating Expert 5 further elucidated:

There is a shift and an awareness that well-being and one's mental health is as important as physical health, and that it's not just a woman's uterus that is pregnant and going to give birth, but she, as a woman is there and needs to be attended to . . . I think there is a narrative medicine movement which is trying to actually help medical doctors to not just view organs but view the whole person and learn to really take in the story about their patient, the individual story.

In addition to the influences of a pregnant woman's own prenatal experiences and maternal ancestral imprints, there are cultural influences, including stories women have heard, seen, or been exposed to through media. All of these factors can create impressions and may limit what is perceived as normal, possible, and expected. This may then diminish a woman's sense of competence and capacity to resource herself from within, thus requiring her to engage external support to help her return to a felt sense of safety and empowerment, and once again move through the cycle of the MCS and therefore foster the opportunity for her to evolve her consciousness. Participating Expert 8 commented:

You see it [their belief] developing either because of a past story that they have to tell or because something that their mother or their sister has told them or because something they heard, and it affects them, and it ultimately will affect their whole pregnancy experience and birthing process.

Addressing limiting imprints. Fundamental to a mother's ability to feel safe and present is her ability to address what is in the way of that, which can include limiting imprints (i.e., subconscious limiting beliefs, behaviors, and patterns from past experiences that inform our present perception, choices, and actions). The analysis revealed that addressing limiting imprints in order to have more healthy options is an important way of getting resourced so that a woman can move from limitation to growth and support her increase of awareness. The findings suggested that the healing and resolution of limiting imprints may help a woman evolve her consciousness. While unaddressed, restricting imprints may limit her experience of curiosity, presence, safety, coping, and resilience.

Limiting imprints are learned coping mechanisms that helped people survive difficult, unsupported early experiences in the past that can hinder our capacity to open and grow in the present. The data indicated that when not addressed, limiting imprints significantly influence a woman's experience of pregnancy, birth, and becoming a mother. The experts discussed the concerning tendency for prenatal practitioners to avoid addressing a pregnant woman's fears, ignore limiting imprints, and skip over her conditioning in hope that a woman will get to where she wants to be as a mother without addressing or integrating the past. Participating Experts 3 and 4 emphasized this same point as articulated in this comment by Participating Expert 4:

There's a way to be pregnant and in avoidance of all that is there with the imprints of our own upbringing, and we just go toward the good mother that we want to be, and we ignore what the shadow piece is. . . . it is so important to have the dream [intention], but also really to look at what imprints are there already.

The experts agreed that without pregnant women having the support to repair unresolved issues from the past, the embedded psychoneurobiological patterns or imprints will continue to direct and inhibit growth and evolution.

The participants discussed several sources of imprints, such as prenatal and birth experiences, trauma as a child and adult, miscarriages and/or abortion in family of origin, history of sexual abuse, and family lineage dramas, traumas, and secrets. The experts agreed among themselves that the opportunity for addressing limiting imprints with skillful support can open the way for deeper experiences of becoming internally resourced for healthy pregnant women.

The participants discussed how a woman's past can influence her pregnancy. Participating Expert 5 explained, "Certainly what their background is has a huge influence on how they cope with or how the experience of pregnancy is perceived and experienced." A pregnant woman's experience of her own conception, gestation, birth, and postpartum can create lasting subconscious impressions and implicit memories which tend to arise when she is pregnant. The participating experts discussed how the depth of past experiences women bring to pregnancy are not limited to their own history and may include the experiences of their mothers, grandmothers, and maternal ancestors. This was referred to as "ancestral imprints" and it was noted by Participating Expert 2 how "pregnant women bring their experience from being in their own mothers' wombs" into their current pregnancy. Participating Expert 2's further elaborated:

The pregnant woman as a pre-nate may have come into being in a womb that had multiple losses, perhaps spontaneous miscarriages, or even terminations of pregnancies, or the kinds of losses that occur in the course of assisted reproductive technologies.

There was an understanding expressed among the experts that the subconscious stores and imprints all of these experiences that may create a reservoir of fear or emotion with respective protection mechanisms.

The results showed that a pregnant woman's prenatal history with trauma can create imprints of danger and threat in her subconscious and body. In addition, being pregnant can trigger these unresolved and sometimes unknown feelings from the past and generate unexpected stress for some mothers. Participating Expert 2 explained, "The very experience of having another being growing within her may in fact bring up some

connection to those experiences, and she may be surprised.” This comment helps to reiterate the data’s emphasis on a pregnant woman Feeling Resourced by having support to address her own prenatal history as part of the process of addressing limiting imprints. The results suggest that addressing her prenatal history can remove obstacles for a woman to help her feel resourced and return to feeling safe and present with herself and her baby in utero.

Addressing and repairing a pregnant woman’s limiting imprints is an example of how a pregnant woman can benefit from receiving the psychological support of a skilled practitioner to support her internal healing process. Without attuned psychological support to help repair limiting imprints a pregnant woman may reside in her past and have difficulty returning to a felt-sense of safety within the MCS. The healing process of acknowledging the unmet need and subsequent emotional suffering that drives the current, uncomfortable limiting behavior or interpersonal pattern is one of the objectives of Getting Externally Resourced. Participating Expert 6 explained:

If women come into this process with multiple negative experiences then a psychological intervention at some point before pregnancy would be most ideal or during pregnancy will be helpful, because otherwise she's going to automatically default back to the old program.

The data demonstrated that when pregnant women look at their limiting imprints, including those around becoming a mother with the support of a skilled practitioner then moving from Feeling Unsafe to Feeling Resourced to Feeling Safe and then to Feeling Empowered as a way to build her Emerging Maternal Consciousness (the MCS) is more feasible. Participating Expert 3 commented, “There are ways to help a pregnant woman

look at the imprints they hold about mothering, such as the expectations, judgments, things she intensely wants, and things she wants to avoid.”

The data showed many influences that create the limiting imprints pregnant women carry, such as the culture of prenatal and perinatal care, societal views about pregnancy, a woman’s mother's story, her own birth story, past traumas, beliefs and stories from friends and relatives, religion, and anything else that creates meaning for her. The findings spotlight a subculture of prenatal and perinatal care that supports women, so they have support and do not have to neglect or cope with their limiting beliefs, limiting imprints, and subsequent challenging intra- and interpersonal dynamics alone. According to the data, the subculture of care that offers individualized, whole woman support (including emotional, psychological, and physical support) is psychology based, namely prenatal and perinatal psychology.

Demonstrated by the findings, part of the process of Getting Internally Resourced is connecting with trained professionals who can help support and facilitate a woman’s return to feeling resourced, safe, and empowered. Accessing professional support was emphasized as an important contributing factor for a pregnant woman to get resourced and support to move from Feeling Unsafe to Feeling Resourced to Feeling Safe and then to Feeling Empowered (the MCS) which can have an accumulative effect of building her Emerging Maternal Consciousness. The participating experts noted that in some instances it could be optimal for a pregnant woman to have the external support of a practitioner with prenatal and perinatal psychology training, such as when a pregnant woman would benefit from addressing limiting imprints that may have been established during her earliest experiences as a prenatate.

Receiving PPN-based support. Specific kinds of individualized, whole-person based care were recognized by the participants as effective in supporting a pregnant woman's potential process to evolve her consciousness, namely Prenatal and Perinatal Psychology (PPN) and somatic (body-based) techniques for both resolving early trauma and resourcing. The findings showed that during pregnancy women become more vulnerable and can reside in old, limiting imprints. Without the support of trained professionals, women can chronically experience feelings scared or anxious, because their need to feel safe (emotionally and/or physically) is not being met and they are under-resourced. The participants emphasized the importance of getting professional support to help facilitate movement from Feeling Unsafe to Feeling Safe. The following section will present the results related to the professional methods advocated by the participants, such as Prenatal and Perinatal Psychology (PPN) and somatic techniques for resolving early trauma as well as resourcing.

The results demonstrated that there is a unique quality within the practice of PPN that prioritizes the attunement between practitioner and client in conjunction with techniques that support the dyadic, bi-directional relationship of mother and baby in utero. The participating experts explained that with the support of a trained PPN professional a pregnant woman may be positioned to safely address the early origins of Feeling Unsafe, which can increase her baseline resilience.

The data noted that PPN has effective ways in which past traumas are recognized and supported. Critical to the evolution of maternal consciousness is becoming free from the stronghold of limiting patterns of fear and protection. The experts explained that early trauma stored in the body and mind is often what needs to be addressed to help a woman

move out of the patterns of the past and move forward into the present. Early trauma is acknowledged by the participants, often arises during the prenatal period, but women may or may not be aware of how that body-mind memory and patterning is affecting their perception, behavior, choices, and overall experience of pregnancy. The following comment made by Participating Expert 6 represented the group's concerted view:

The subconscious program is going to create what it sees, and that's why if a person comes into the pregnancy with an insecure outlook or not feeling supported, that's the picture that will generate the chemistry that will run her biology, her physiology, and control the genetics of her child via epigenetics.

The emphasis on providing PPN support during maternal-prenatal development was consistent throughout the results. According to the participating experts, PPN practitioners are qualified and trained to hear a woman's current stress and challenges, such as feeling overwhelmed with pregnancy information, anticipation of birth, weighted down with expectations about being a mother, fears of health, and even fear of loss of baby, etc., and to perceive if and when this is potentially related to trauma memory. The application of PPN into practice was described by Participating Expert 4 as follows:

When a pregnant woman is supported in that holistic way that we were discussing and the [limiting] psychological aspects of her experiences can be addressed, then these aspects can then settle before she goes into birth. And when we think about how does a woman feel safety, it's really a body-felt sense that she can relax, open, and settle because the surroundings feel safe. She's had an experience of safety in her body, probably really early on, which is the imprint that she can reference. And if as a child the woman came from a home where safety did not

exist, how can that woman even perceive that safety is available, let alone allow it in?

Addressing trauma safely with attunement is paramount to the application of PPN.

Participants explained it can be both surprising and anticipated for early life trauma to arise during pregnancy. The experts discussed the importance of women having the support to skillfully address early life trauma as a natural part of the transformational process of pregnancy.

The following specific PPN-based techniques were discussed by the participants as vehicles to support a pregnant woman so that her experience of pregnancy can evolve her consciousness: (a) teaching differentiation, (b) listening to a woman's birth story, (c) teaching a pregnant woman skills to help herself, (d) providing somatic based psycho-emotional support.

The first technique, teaching differentiation was named as a primary tool. One of the principles of PPN psychology is to differentiate between the young self and adult self, or the past and present self as a way to distinguish past traumas from what is going on in the present moment so to create opportunities to resource and return to a felt-sense of safety in the present moment. The use of differentiation as a tool for resourcing was explained by Participating Expert 4,

To differentiate what challenges came from way back in her own history of bonding or lack of bonding with her mother, and really support her to differentiate between what is in the past and what is right now in this moment, to assess the safety in the physical space she's in, to look in the room and see really who is present and assess are these people safe, and then to remember her current age

and differentiate what she needed as a little baby from what she's needing now, and really let this moment register that there are people there to support her or not, but to help her know what safety is and how to feel that in her body.

The experts discussed how differentiation techniques help a person slow down and remain present in the moment and avoid the tendency to get triggered and lost in past traumas and imprints. Another way to support a pregnant mother to feel safe that was mentioned is to allow her the space to tell her story of birth.

The second technique that emerged in the discussion among these experts involved unpacking the meaning a woman makes and has stored about birth from her earliest exposure to birth. Participating Expert 3 shared how she asks women to remember the first time they heard the story of their own birth and/or recall their earliest impressions about birthing, “It has been our experience that the first birth story, whether people remembered it consciously or not, creates an imprint for expectations or what they trust or what they want to avoid.” There was mention that body memories can, and do surface during pregnancy, such as woman’s own experience of being in utero or birthed.

The third method of support discussed in the focus group involved teaching a pregnant woman skills to help herself, such as showing her ways to resource herself using breath awareness techniques (as discussed in the Getting Internally Resourced section), as well as helping her to give attention to her emotional states. One of the goals of providing women with exercises to practice on their own was so that she can understand there is no “perfect mother,” and that she is being a “good enough” mother. The results indicated specific activities to support the awakening of the mother and underscored the value of a woman developing her own archetype (image) of mother. Other examples of resourcing

activities included creating womb art, participating in guided visualizations, and journaling.

The fourth technique discussed was the use of somatic based psycho-emotional support, such as craniosacral and other modalities that use hands-on physical contact from a trained professional. The participating experts emphasized that the prenatal practitioner uses such techniques to listen to a woman through her body. The results suggested that the quality of attention and skillful somatic (body-based) listening provided by a practitioner helps a woman to safely access stored memories and limiting imprints (such as her origin story, early experiences, and ancestral imprints) for repair and integration. Participating Expert 7 explained:

As I work with pregnant women, I really want to hear their story through their body. As a manual therapist or a craniosacral therapist, I want to hear her story as thoroughly as possible, and then support her physical integration of that story.

Somatic practitioners are trained to listen to a woman's story through her body and help resolve buried imprints her body is holding, which then gives her the opportunity to experience rest, resourcefulness, and resilience from the "inside out."

The participants clarified that helping a pregnant woman experience safety in her body has a different effect than talking about the idea of Feeling Safe (to be discussed in more detail in Category 4). The findings demonstrate that the body-felt sense of safety creates the opportunity for a pregnant woman to relax and settle within herself and that this is a very effective way to help a pregnant woman resource herself. Furthermore, having created an internal reference point and experience of rest and inner stability can build a well of resourcefulness and a greater baseline of resilience that a woman can tap

into throughout pregnancy and as a mother. The findings also emphasized that it is important for a woman to have psychological support to address her hopes and fears in anticipation of her labor and birth and that this will support her mental-emotional health and well-being during pregnancy, birth, and postpartum as a new mother.

The data showed a connection between a woman's mental-emotional well-being and her capacity to evolve her consciousness. In other words, when a woman receives the support she needs to stabilize her inner well-being, she is in a better position to evolve her consciousness during pregnancy, because she is not chronically protecting herself due to Feeling Unsafe. When a pregnant woman has the professional help to get resourced, she is able to return to a growth state that is once again accessible when she is Feeling Safe. The results demonstrated that with "psychological support in preparation for birth" a woman is more likely to evolve and that "listening to a woman and her story" and attending to the whole woman (mind, body, and spirit) is integral to assisting her experience of pregnancy to evolve her consciousness. In summary, the results illustrated that prenatal psychological assistance via various methods support a woman's psycho-emotional-spiritual experience of becoming a mother and consequently increases the potential to promote a woman's opportunity to evolve her consciousness during pregnancy.

Core Category 4: Feeling Safe

The MCS theory is grounded in the data that demonstrated that safety is not a state that remains constant, rather a felt-sense of safety is a state that is consistently a place of return. Once maternal consciousness emerges (category 1) there is typically an event or circumstance that provokes a woman to feel unsafe (category 2), then she

reaches out or goes within to get resourced (category 3) so that she can then feel safe (category 4) again. This is a sequential process that repeats and builds her ever-growing emerging maternal consciousness. According to the data, the movement of returning to Feeling Safe is critical for a woman to feel empowered (category 5) in her experience of becoming a mother and of her pregnancy to potentially evolve her consciousness. The MCS sequence repeats frequently throughout a woman's experience of pregnancy. The cyclic movement from Feeling Unsafe to Feeling Resourced leads a woman to the opportunity to feel safe again, which in turn may provide new levels of resilience and growth, while advancing her consciousness.

This section presents the results related to the relationship between the biological imperative and the experience of a felt-sense of safety during pregnancy. This is followed by a presentation of the contributing factors that motivate a pregnant mother's actions to feel safe. The results emphasized the helpful aspects of the biological imperative for a pregnant mother, such as the potential for an increase in a felt-sense of safety, awareness, presence, and curiosity, and the critical role that these facets play in a woman's experience of pregnancy potentially evolving her consciousness.

There is a direct relationship between Category 3, Feeling Resourced and Category 4, Feeling Safe. The participants agreed that Feeling Safe emerges from being supported, and when the latter is missing, the lack of support detracts from Feeling Safe.

Experiencing a felt-sense of safety. The results detailed how the felt sense of safety and the importance it plays in pregnancy has the potential to help evolve a woman's consciousness. The participating experts discussed how Feeling Safe is a subjective experience and is beyond a thought or concept; it is a "felt-sense" of feeling

safe in one's body and secure in one's life. Participating Expert 4 commented, "When we think about how a woman feels safe, it is really a body-felt sense that she can relax, open, and settle because the surroundings feel safe." The innate drive toward safety and the mechanism to survive is part of our body's biology, which is dictated by the biological imperative.

As previously discussed in Category 1, the data showed that the biological imperative to survive informs a pregnant woman's experiences of Feeling Unsafe and signals her instincts to protect herself and her baby in utero. The findings suggested that a pregnant woman is either in a state of Feeling Safe and open or Feeling Unsafe and protective. The results emphasized that during the maternal prenatal period the biological imperative to keep one's self and baby in utero safe is heightened. Furthermore, the analysis explained that being present versus constricted in old, limiting patterns is necessary to generate a new perception and increase awareness. A felt sense of safety makes being present possible for women; otherwise the subconscious dominates and keeps her in a state of protection. The data emphasized that growth is possible when pregnant women subjectively perceive they are safe and is not possible when feel threatened or the need to protect and defend.

The extent to which the experience of pregnancy can evolve a woman's consciousness is largely determined by the degree to which a woman feels safe during her pregnancy. Participating Expert 6 stated, "Our whole mechanism is driven to survive and so safety becomes the biggest issue in the world for all of us." The biological imperative is unique during pregnancy because it can motivate a woman toward feeling safe in a different way than any other time in her life. The responsibility of another being's life

(the baby in utero) heightens the intensity of the biological imperative and provides impetus for a healthy woman to create internal and external systems of support that help resource her to safety when she experiences Feeling Unsafe. Participating Expert 6 further explained,

I think that before pregnancy our normal thought is about our own personal life and our own personal safety, and once a woman recognizes she's pregnant, there's a profound consciousness change, because now her life is not so much about her safety anymore at all, but about the safety of her developing child. She takes on a completely different level of consciousness regarding her own perception about her own life and what's going on and is now taking on another person's life to be conscious of and to be caring for.

The data indicated that the biological imperative to survive is often what moves a healthy woman to take action to keep herself and her baby in utero safe. This process may heighten the availability of experiences that support the evolution of her consciousness. For example, when she feels safe, she is able to make conscious choices that are based on the present rather than reactive choices rooted in subconscious limiting beliefs and protective patterns.

The repeated lived experience of moving from Feeling Unsafe to Feeling Safe makes it possible for a pregnant woman to increase her ability for emotional regulation and agility to continually return to the present moment all the while she builds her competence and confidence. The analysis revealed that this promotes opportunities for curiosity and openness to new ways to perceive and respond to her internal and external

experiences, and thereby help her to increase her awareness and evolve her consciousness.

The benefits of feeling safe. Feeling Safe creates the opportunity to establish a new sense of self as woman and mother during the developmental transition of pregnancy. In this process of self-discovery, the opportunity to connect with an internal sense of security, based on feeling confident, comfortable, and curious within her new self is part of this process. The experience of grounding into Feeling Safe within her body-mind-heart springs her into Feeling Empowered and perpetuates her movement through the MCS.

Feeling Safe opens the door to experiencing curiosity, comfort, and confidence from the inside-out versus the outside in. Feeling nurtured, comfortable, and confident are associated with the felt sense of being resourced and feeling supported. The results emphasized the experts' shared understanding as articulated in this statement by Participating Expert 2, "feeling safe enough to be curious is a very important idea. I think supporting an experience of safety within one's self, within the pregnant woman's experience of her body is, I think, very important." Experiences of safety can come from within the pregnant woman or from an external authority, indicating that she and her baby in utero are safe. The participating experts highlighted that this can generate her embodied experience of "I can do this, I am supported," which builds her confidence in her body and her natural capacity to gestate and birth a healthy child and become a competent, empowered mother.

According to the data, Feeling Safe makes it possible for a woman to be curious. As previously mentioned, an attitude of wonder promotes growth. Participating Expert 1

explained the natural impulse to explore when Feeling Safe by referencing research with mice. It was stated, “If we look at stressed mice, their exploratory behavior decreases. It's not safe to explore when you're in protection mode . . . and so curiosity goes down.” To respond in new ways to stressors is a creative act that requires the support from internal and/or external resources (as discussed in Category 3). According to the analysis, curiosity affords an openness and flexibility to perceiving and responding in new ways as compared to the rigid thinking of the subconscious to default to protective imprints. Feeling Safe enough to be curious to explore new ways of being, perceiving, and doing is foundational to the potential for a woman's experience of pregnancy to evolve her consciousness. Feeling Safe is critical to a woman's experience of Feeling Empowered, which is integral to the evolution of her consciousness and continuing her movement through the MCS.

Core Category 5—Feeling Empowered

This section reviews the study's final category and the final phase within the preliminary cyclic MCS grounded theory, Feeling Empowered. The findings clearly indicated that the consistency with which a woman feels empowered (or the lack thereof) as she becomes a mother influences a woman's ability to evolve her consciousness. The conceptual definition of Feeling Empowered, as derived from the data is a woman's subjective experience of feeling stronger and more capable within her new maternal body and mind that comes from a process within herself or via the support of another (as described in the Feeling Resourced category).

Feeling Empowered was discussed by the participating experts as an objective for women becoming mothers. Feeling Empowered makes it possible for a pregnant woman

to enjoy a more comfortable, competent, and confident experience of her maternal-self, which, according to the analysis, is critical during the monumental changes that are inherent during pregnancy. The experience of Feeling Empowered supports a pregnant woman's capacity to be flexible (as compared to rigid) and in turn helps her embrace the transformations of childbearing while feeling confident to embody her Emerging Maternal Consciousness (first phase of the MCS).

The results revealed that the evolution of a woman's consciousness during pregnancy is advanced by the quality of her experience, more specifically the frequency and depth of her continual return to a state of Feeling Empowered after the growth state of Feeling Safe (fourth phase of the MCS). The participants discussed the elements of Feeling Empowered, (i.e., being confident, being comfortable, trusting, accepting, and being good-enough). The data analysis pieced together the individual aspects of empowerment into a larger concept of Feeling Empowered, which was then identified as a core category.

This section begins with a discussion of why Feeling Empowered is important for the development of Emerging Maternal Consciousness and how it relates to the potential for a pregnant woman's consciousness to evolve. The contributing factors to a pregnant mother Feeling Empowered are then reviewed with attention on the experiences of embodiment, confidence, comfort, and trust. This category concludes with a presentation of the results related to embodiment of the empowered mother and how she accepts the role of motherhood from a place of inner authority.

Feeling empowered and evolution of consciousness. Central to the development of a new mother's concept of self and her maternal consciousness is the touchstone state

of Feeling Empowered. It is in this phase that there is the opportunity for maternal consciousness to build and reinforce a positive concept of self as mother. This phase of Feeling Empowered has the opportunity to build a reservoir of resilience that carries a pregnant woman through the MCS. The repetitious movement through the MCS establishes and fortifies a pattern of maternal resilience that increases a pregnant woman's capacity and ability to meet the transformational challenges inherent in this life stage.

In other words, Feeling Empowered acts as a backbone of support while a woman experiences her transition into becoming a mother (in body, mind, and heart). The participating experts emphasized how important Feeling Empowered can be and the influence this state can have on a woman's birthing experience, sense of self, sense of mother, and life. For example, Participating Expert 8 shared:

So as far as getting a pregnant woman to be empowered—and it really does affect her consciousness. . . . it ultimately will affect her whole experience in the birthing process, which, of course, is one of the one or two most important things a woman will do in her entire life and something she'll always remember.

The analysis emphasized how Feeling Empowered benefits women during pregnancy, birth, and postpartum. The results outlined several of the factors that contribute to this positive state.

Contributing factors to feeling empowered. The participating experts discussed two main contributing factors to Feeling Empowered for pregnant women: (a) feeling confident and comfortable in her maternal body, and (b) trusting her body and process of pregnancy.

The first contributing factor, feeling confident and comfortable in her maternal body, occurs in relationship to the fourth phase of the MCS, Feeling Safe. It is only when a woman has a felt sense of safety that she can know the experience of Feeling Empowered. The consistent movement through the MCS from Feeling Unsafe to Feeling Resourced to Feeling Safe (again) supports a pregnant woman to have an embodied experience of feeling stronger and more capable, which is how she arrives to this state of Feeling Empowered. The MCS continuously builds upon itself, which strengthens a woman's experience of Feeling Empowered and her Emerging Maternal Consciousness.

The necessity for a pregnant mother to receive support from within herself and others (Feeling Resourced, third phase of MCS) so that she can cultivate Feeling Empowered was emphasized in the results. Participants discussed the importance of feeling nurtured in order to feel comfortable and confident, which supports the movement to empowerment. This is highlighted by the following comment made by Participating Expert 8:

Ultimately I think that if you feel comfortable and confident in your own body's ability. . . . I think that the chance of having a marvelous experience of pregnancy and a successful birthing experience are much greater. It is very important that pregnant women feel nurtured and . . . to me it's almost the number-one thing.

The influence that competent role models can have on cultivating maternal empowerment was indicated in the results. Participating Expert 8 elaborated, "confidence may also come from her life experiences. [For example] I can tell you that women whose mother had home births of their siblings tend to feel much more comfortable being

pregnant and it's much more normal for them.” Since home birth is not the norm in our society, the importance of simply surrounding oneself with positive and empowered birth experience was further emphasized by Participating Expert 8, “I think it's important that pregnant women surround themselves with people who are supportive and upbeat.”

Exposure to positive role models was discussed as a way to help build an internal reservoir of trust in oneself (Feeling Resourced, phase three of MCS) amidst the life change of pregnancy. Exposure to positive role models provides a woman with the opportunity to see “somebody who is very attuned to her child,” commented Participating Expert 4, who further explained that one of her ways of facilitating exposure to positive role models was to bring a healthy bonded mother-child dyad to her prenatal education classes so the parents-to-be could see a positive role model and have a felt sense of that experience. Witnessing and understanding how the woman representing a maternal role model responds and interacts with her child sets a new example of what is possible and may challenge pre-existing beliefs which in turn may make available a new possibility for her personal maternal archetype and herself as a mother. Again, this process helps awaken positive images that can be used to define a pregnant woman’s sense of self in her changing role and help her gain access to a felt sense of being embodied and empowered as a mother.

Trusting. Trusting is an essential component to Feeling Empowered. Experiencing trust in one’s self can be cultivated via external and internal support (Feeling Resourced, phase three of MCS). Trust is a multi-layered experience as explained by the participating experts. One aspect of trust is trusting one’s body and another aspect is trusting the process of pregnancy. These experiences of trusting can

build strength and confidence in a woman, all of which promote her sense of empowerment.

Engaging with prenatal care providers who trust the process of pregnancy can be pivotal and has the potential to amplify a woman's strength, empowerment, and trust in herself as suggested in the results. One of the participants emphasized how the midwifery model is based on trusting a woman's body and the birth process. This kind of support is more likely to be empowering for women, regardless of the birth outcome, as explained by Participating Expert 8, "The midwifery model is more of a trust model, that we trust birth . . . we accept the fact that birth is a natural, normal process and needs to be nurtured rather than treated."

The analysis revealed that trusting the innate intelligence of pregnancy, a woman's body, and her baby's body are part of this process of Feeling Empowered. When a pregnant woman recognizes the natural intelligence happening within her body then trust is nurtured, which promotes empowerment. For example, Participating Expert 1 stated:

There is some deeply unfathomable intelligence at work behind the just amazingly intricate series of cellular events and these miniscule tolerances for error in timing, in placement, in motion, in fluid movement, and so that when you can give yourself over as part of that design, as an offering to life as it composes with you, in you, through you, that brings a lot of strength and tranquility. I think that tranquility is one of the big wonderfully nourishing pieces for supporting pregnancy and fetal development.

All of the multifaceted aspects of trust build upon a woman's experience of Feeling Empowered, which is fundamental to a pregnant woman's opportunity to evolve her consciousness.

Feeling empowered supports the embodiment of mother. Feeling Empowered builds a reservoir of resilience that carries a mother through the MCS. The repetitious cycling through the MCS generates and fortifies a pattern of (maternal) resilience that gives a pregnant woman the capacity to meet the transformational life challenges inherent in becoming a mother. Maternal empowerment promotes the evolution of a woman's consciousness during pregnancy because Feeling empowered within herself is essential for the maturation of her self-awareness. The repetition of this sequence lays the foundation for a greater capacity to respond to life from the present instead of conditioned responses, and a more positive self-concept. The results suggest that all of these factors help to evolve and expand a woman's consciousness.

When a woman gets to the place of Feeling Empowered as an embodied mother, she finds herself in a secure, confident, and embodied relationship with herself in a new, dynamic role as a mother. The process of claiming motherhood is influenced by previously mentioned factors as well as cultural and familial archetypes. Findings about the empowerment of the embodied mother are presented in the following two sections: a) awakening the embodied mother, and b) defining the archetype of mother.

Embodying and awakening of mother. According to the analysis, embodiment of mother refers to a woman who is increasingly aware of her body and connected to the felt-sense of safety and empowerment within herself. These components of experience

promote the development of her maternal voice and inner authority as she relates to herself, baby, partner, prenatal care providers, and the world.

The process of embodying herself as a mother is connected to the transformation of her self-identity. There is a cyclic, cooperative relationship between the felt-sense experience of embodying herself as a mother and the awakening of her identity of mother. The participating experts referred to women's experience of awakening the mother as "holistic" and "soulful." The results indicated that the interpersonal and intrapersonal experience of awakening the embodied, empowered mother and the process of personally identifying as mother advance the evolution of a woman's consciousness.

Awakening the mother is sparked by a woman discovering she is pregnant and acknowledging her baby as discussed in Category 1, Emerging Maternal Consciousness. The other contributing aspects to her experience of awakening the mother are the influence of her maternal lineage, the collective cultural consciousness, and her prenatal care team. These particular factors were discussed as the subconscious part of the process. The data also reflected that there is the opportunity for a woman to intentionally and actively engage in the process of awakening herself as mother.

The analysis highlighted that the awakening of mother is influenced by all aspects of the pregnant woman, the maternal archetypes, and the culture collective. According to some of the participating experts, awakening the mother is a departure from the norm. Instead of supporting a pregnant woman to be a patient, a woman is supported to be a mother in body, mind, heart and soul, as a way to support her self-empowerment. In other words, the participating experts emphasized the important opportunity to shift women's and healthcare providers' focus from primarily preparing for the mechanical act of birth

to include the conscious awakening of mother. A new sense of self and greater awareness can help a pregnant woman evolve her consciousness. The results showed that there are several influences involved in awakening the mother.

The unique, personal development of a maternal archetype is also influenced by an image or feeling of motherhood that comes from family, society, mysticism, spirituality, and/or religion. According to the results, the development of a purposefully chosen maternal archetype may greatly inform the kind of mother a woman becomes.

Another influence on the development of the maternal archetype was discussed in regard to how a woman assimilates the various maternal messages she received (implicitly and explicitly) throughout her life as part of the process of creating her own unique archetype. How she identifies with motherhood and the role of being a mother may directly sway her immediate and long-term relationship with herself and her child, and therefore influences the evolution of her consciousness.

The participating experts discussed how influential the subconscious programming of a woman impacts her own version of the maternal archetype and the importance of bringing those images into present awareness. Participating Expert 6 commented:

The mind and the brain are paint-by-number in reverse, meaning you start with a picture (of pregnancy or mothering), and the brain's function is to break that picture down into the elements, and the elements are the emotional chemistry and everything that matches that picture. So, if women go into pregnancy with a picture (of motherhood) not in the conscious mind; that is an issue. If it is not in the conscious mind; it's the subconscious program.

In other words, once a pregnant woman becomes aware of her stored concepts of maternal archetype then she has an opportunity to engage or disengage those ideas. A pregnant woman's process of realization and intentional choosing promotes her cultivation of awareness.

The participating experts discussed the positive influence of settling into an image of being a "good enough" mother in conjunction with the cultural, societal, familial influences, and exposure to modern positive role models of motherhood. An example given by Participating Expert 3 of creating an archetype of the good enough mother emphasized the importance of trying to:

Help a woman prenatally who comes from a place of idealism, or avoidance . . . [shift] to something in the middle called "good-enough mother," not perfect, not starting with a sense of "I have to learn more, I have to know more, because I'm not gonna be good enough," but it's something in the middle.

Several participants also discussed that it is important for a pregnant woman to have support to address how she was imprinted by her mother and how that relates to her process of awakening the mother. Participating Expert 4 explained:

There's a way to be pregnant and in avoidance of all that is there with the imprint of our own upbringing, and we just go toward the idea of the good mother that we want to be, and we sort of ignore the shadow piece. I agree that it's so very important to have a vision of good mother, but to also really look at what imprints are there already.

This process of finding one's personal maternal archetype requires differentiating from imprints, preconceived notions, and conditioning. The experts highlighted the usefulness

for pregnant women to have support to delineate between then and now, past and present, because the process of awakening the mother and her personal maternal archetype may be different than what a woman had modeled by her mother and may require the support of external expertise (Feeling Resourced, phase 4 of MCS).

The participating experts discussed both cultural and societal archetypes that are either empowering or disempowering. The data showed that women can choose how and what their personal maternal archetype is going to look and feel like. The findings help to understand that this is not a one-time event or decision, it is a dynamic process involving the body, mind, and heart and it can happen throughout life, repeatedly, as a woman progresses through pregnancy and motherhood. Participating experts emphasized how the process of becoming aware that there is an opportunity to discern and choose a maternal archetype (that may be different than her maternal ancestral archetypes) requires support and is instrumental to how a woman's experience of pregnancy can evolve her consciousness.

A woman becomes empowered as she turns toward herself to face and resolve limiting imprints, beliefs, patterns, and traumas from the past. Having the support to do this is paramount to the process of Feeling Empowered. The participating experts discussed that the lack of awareness and valuing of a pregnant woman's process of awakening herself as mother is common. The data analysis suggested that cultural programming combined with the training most prenatal and perinatal health care practitioners receive is often counter to the awakening of the mother, and therefore requires women to have additional psycho-emotional support. As mentioned in prior sections, the majority of societal and medical focus is on the mechanical, physical needs

of pregnancy and birth with only limited consideration given to the inner psychological life of pregnant women. The findings indicated that typical prenatal care providers do not show interest or support mind-body awareness. The majority of the participating experts agreed that there is “next to no consideration of the [inner-life] process” within standard, allopathic prenatal care that could further the evolution of a pregnant woman’s consciousness. In order for a pregnant woman to have the support she needs to find her personal version and embodiment of an archetype of mother that she will live into, the participating experts discussed the need for system level changes to the culture of prenatal care as elaborated in Category 3.

In summary, Feeling empowered is integral to increasing a woman’s internal resilience and self-awareness, and a necessary element that has the potential to carry her through repeated cycles of the MCS. The findings showed that feeling empowered revolves around a pregnant woman redefining her personal maternal archetype to promote her development of maternal consciousness and her evolution of consciousness. In addition, the results emphasized the multiple layers of support optimal for a pregnant woman to have so that she may experience Feeling Empowered. This category, Feeling Empowered fortifies a pregnant woman’s positive concept of self as mother and is essential to the potential for a woman’s experience of pregnancy to build her Emerging Maternal Consciousness, and evolve her consciousness.

Maternal Consciousness Sequence Theory

The goal of grounded theory research is to create a theory. This methodology involves the researcher's professional and personal perspective and the analysis of the data collected in order to generate insight into the realm of inquiry and develop a theory (Hallberg, 2006). The Maternal Consciousness Sequence (MCS) theory was generated from the interdependent relationship among the five core categories (Emerging Maternal Consciousness, Feeling Unsafe, Feeling Resourced, Feeling Safe, and Feeling Empowered) as they related to the research question, "How can a woman's experience of pregnancy evolve her consciousness?"

Central to the MCS theory is the movement from one feeling state to another as part of the process of cultivating maternal consciousness. The MCS theory is unique to pregnant women, because Emerging Maternal Consciousness is the foundation and ongoing catalyst for the MCS. Maternal consciousness evolves a woman's consciousness. The sequential, cyclic nature of the cumulative process of moving from one phase to the next within the MCS builds maternal consciousness, which supports a pregnant woman's potential to evolve her consciousness. Review of each phase as it relates to the MCS theory demonstrates how the theory was generated from the data analyzed.

Emerging Maternal Consciousness. The MCS theory begins with the Emerging Maternal Consciousness phase because a woman's maternal consciousness is sparked during pregnancy and has the potential to progressively grow as her pregnancy progresses and as she moves through the phases of the MCS. Emerging Maternal Consciousness is the catalyst and the constant that is further developed with each passage through the MCS. A woman's connection to her baby in utero and the reality of being pregnant is the

catalyst for her maternal consciousness to emerge and develop as she continuously cycles through the MCS phases. This phase is unique in the MCS theory. Emerging Maternal Consciousness establishes a baseline for a woman's maternal consciousness to grow and develop throughout pregnancy. A pregnant woman is in a constant state of Emerging Maternal Consciousness, whereas she moves through the other four phases of the MCS in a cyclic nature. As a pregnant woman moves through the other phases of the MCS theory her maternal consciousness develops. The development of her maternal consciousness supports her potential to evolve her consciousness. The Emerging Maternal Consciousness phase serves several functions in the MCS theory, it (a) supports a pregnant woman's motivation to move out of Feeling Unsafe, and (b) builds her maternal consciousness in response to Feeling Resourced and Feeling Safe, and (c) further develops her maternal consciousness in response to Feeling Empowered

Feeling Unsafe. The second phase of the MCS theory occurs when a pregnant woman experiences Feeling Unsafe (physically, mentally, or emotionally). All pregnant women naturally feel unsafe from time to time. The process of moving out of the Feeling Unsafe phase is often catalyzed by a pregnant woman's connection with her Emerging Maternal Consciousness. This phase presents an opportunity for a pregnant woman to return to Feeling Safe by getting resourced. When a pregnant woman is in the phase of Feeling Unsafe her growth is limited. However, as stated her Emerging Maternal Consciousness serves as motivation to grow, thus encouraging her to move from Feeling Unsafe to the next phase of the theory, Feeling Resourced.

Feeling Resourced. Feeling Resourced is the bridge from Feeling Unsafe to Feeling Safe. This phase of the MCS theory is a growth process wherein a pregnant

woman returns to a safe and secure place within herself either by internally or externally getting resourced. The repetition of getting resourced as a pregnant woman moves through the MCS over the span of her pregnancy promotes her felt sense of Feeling Resourced and Feeling Safe and may positively compound her Feeling Empowered. Feeling Resourced supports the opportunity for a pregnant woman to reconnect with a felt sense of safety and empowerment and thereby continue to evolve her consciousness.

Feeling Safe. The fourth phase, Feeling Safe is a growth state (as compared to the protective state associated with the Feeling Unsafe phase) of the MCS theory. Feeling Safe supports the opportunity for a pregnant woman to grow herself and evolve her consciousness. The felt-sense of safety allows a woman to feel at ease within herself. When this essential need for a felt-sense of safety is met a pregnant woman can organically feel open, curious, and grow her awareness, which in turn supports her potential to evolve her consciousness. In addition, the continual returning to Feeling Safe is the process that empowers a pregnant woman because it increases her capacity to connect with a felt-sense of safety within herself. Her reference point of repeatedly having moved from Feeling Unsafe to Feeling Safe strengthens her resilience when Feeling Unsafe (e.g., anxious, scared, worried). The sequential and repetitive process of returning to Feeling Safe is critical for a woman's movement through the MCS and her potential evolution of consciousness.

Feeling Empowered. From the growth phase of Feeling Safe a pregnant woman has the opportunity to move into Feeling Empowered where she reinforces a positive self-concept of self as mother and builds her maternal consciousness. Feeling Empowered evolves her maternal consciousness and maternal consciousness evolves her

consciousness as a woman. The cumulative process of returning to Feeling Empowered expands her self-awareness, which in turn evolves her consciousness.

Repeated movement through the phase of Feeling Empowered propels a pregnant woman through the MCS and gives her the opportunity to build a reservoir of resilience and trust in herself to carry forward through her pregnancy, her transformation of self, and potential evolution of consciousness.

The MCS theory addresses the research question, “How can a woman's experience of pregnancy evolve her consciousness?” by demonstrating that there is a cyclic sequence of phases common to healthy pregnancy that may promote growth, resilience, and expansion of self. Repeated movement through the phases of Feeling Unsafe to Feeling Resourced to Feeling Safe and then to Feeling Empowered builds a pregnant woman’s Emerging Maternal Consciousness, which supports a woman’s potential to evolve her consciousness. The completion of each cycle of the MCS serves as a rite of passage. The cumulative effect of these rites of passage has the potential to help move a pregnant woman toward an empowered self-concept as mother and to evolve her consciousness.

CHAPTER 5

DISCUSSION

Statement of the Problem

Pregnancy is recognized as a time of multi-faceted change; however, the focus within practice and culture is typically on a woman's reproductive system and does not include the changes to her brain function, brain structure, and nervous system and the effects of these changes. Mounting research demonstrates that pregnancy is a time of dramatic neuroplasticity that impacts a woman's sense of self and brain (Barha & Galea, 2017; Brunton & Russell, 2007, 2008; Brunton et al., 2013; Donegan, 2015; Duncan & Bardacke, 2010; Glynn & Sandman, 2011; Hillerer et al., 2014; Hoekzema et al., 2017). Maternal neuroplastic changes can have positive and negative short- and long-term mental, emotional, and physical implications for women (Brunton et al., 2013; Duthie & Reynolds, 2013; Glynn & Sandman, 2011; Hillerer et al., 2014; Hoekzema et al., 2017). The neuroplasticity of pregnancy may impact a pregnant woman's experience of consciousness, yet her awareness or consciousness is rarely discussed, let alone supported in the current maternity model of care and culture.

Due to the dynamic interplay among brain, body, mind, and consciousness it is not possible to change the body, brain, and mind without affecting consciousness. In other words, the reconfiguring of brain and body as a result of prenatal maternal neuroplasticity shapes a healthy woman's sense of self, awareness, and access to consciousness, yet this is rarely discussed as it applies to pregnant women and new mothers. Recent research has revealed the presence of fetal cells in a woman's body post birth (for up to 2 years) and suggests that the fetal cells may be related to physical health

issues and changes in the maternal brain (Boddy et al., 2015). This may prompt some researchers to inquire whether fetal cells may have an impact on a woman's mind and consciousness, yet no research to date has explored this.

There are multiple factors that contribute to the lack of attention on consciousness as an integral part of women's experience of pregnancy and becoming a mother. A summary of how (a) the pathological focus in maternity care research and practice, (b) lack of attention on the positive potential of pregnancy, and (c) historical oppression of women is presented to illuminate the problematic context of investigating prenatal maternal consciousness at the time this research was conducted.

Pathological Focus in Maternity Care Research and Practice

Current maternity care treats pregnancy as a condition or disease requiring medical intervention. Mitchell & McClean (2014) underscore this point, "Underpinning the biomedical approach is the view that pregnancy and childbirth are inherently dangerous, and therefore require medical supervision and technological interventions to ensure safe outcomes" (p. 102). These authors explain that although the goal of risk management in maternity care "is to improve the quality of care and patient safety . . . this approach has contributed to the ever-increasing rates of medical intervention in pregnancy and birth" (Mitchell & McClean, 2014, p. 102). Crisis intervention protocols are commonly practiced on healthy, low-risk pregnant women. There is mounting research attesting to the problematic nature that the current prenatal and perinatal maternity model of care has on neonatal and maternal birth outcomes and subsequent postpartum psycho-emotional challenges (Davis-Floyd, 2004; Donegan, 2015; Sakala & Corry, 2008; Wagner, 2006).

A woman's experiences within the dominant model of care may have greater implications than what has been previously explored due to the dramatic neuroplastic vulnerability of the woman's brain during this time. The current model of care may predispose women to the negative implications of neuroplasticity. Recognition of the developmental potential available to women's consciousness is missing within current maternity care in the United States. The neuroplasticity of pregnancy makes the experience of support or lack thereof a critical variable that may inform the trajectory of a woman's consciousness.

Lack of Attention on the Positive Potential of Pregnancy

Research has predominantly been focused on the negative outcomes of pregnancy (Donegan, 2015; van den Heuvel et al., 2015). The repercussions of high-risk scenarios for women and babies have been generalized and applied to low-risk pregnancies (Wagner, 2001). The overarching model of care consequently eclipses the focus on what interventions and practices support positive outcomes (Attanasio et al., 2014; Donegan, 2015; van den Heuvel et al., 2015). The problem is that the positive potential that is inherent within this life-changing event may be ignored, thus resulting in a climate and culture of care that does not acknowledge the potential change in a woman's consciousness during pregnancy. This in turn may limit women's evolutionary potential by not affording her the support necessary for the advancement of her consciousness.

There has been a recent surge of research focused on the positive potential available to women during the childbearing process (Attanasio et al., 2014; Donegan, 2015; Duncan & Bardacke, 2010; Mercer, 2004; Reis & Alligood, 2014; van den Heuvel et al., 2015). This research has focused on positive self-concept and experiences

associated with motherhood (Attanasio et al., 2014; Mercer, 2004; van den Heuvel et al., 2015). Van den Heuvel et al. (2015) reinforce the need for research like this dissertation study that focuses on the positive potential available to pregnant women, “Research examining factors promoting pregnant women's emotional wellbeing is therefore highly needed” (p. 103). There is much that is yet to be understood about this topic, particularly in regard to a pregnant woman’s consciousness.

Historic Oppression of Women

The historic oppression of women, along with the medicalization of pregnancy and industrialization of birth, have created detrimental implications for mothers, children, and society (Cahill, 2001; Wagner, 2001). According to Wagner (2006), physician, scientist, and former Director of Women’s and Children’s Health at the World Health Organization, “Maternity care is not primarily a health issue but a women’s issue” (p. 122). The long-standing management and medicalization of women’s bodies during pregnancy and childbirth have minimized women’s rights, decision making authority, and ability to be informed, active participants in their health care (Cahill, 2001; Childbirth Connection, 2004; Davis-Floyd & Sargent, 1997), and have contributed to an overarching oppressive climate for childbearing women.

Birth anthropologists, Davis-Floyd and Sargent (1997) explained how the allopathic model of maternity care has been authoritative and oppressive to women. They state:

Prenatal care is fundamentally about getting and giving information. Providers collect data on the state of pregnant women’s bodies and the condition of their developing fetuses. At the same time, they want their clients to understand how

and why their bodies are changing, in part because they expect this will make them more likely to follow providers' recommendations. In reality, much of prenatal care can be seen as a process of medical socialization in which providers attempt to teach pregnant women their own interpretations of the signs and symptoms the women will experience as the pregnancy proceeds and the significance that should be attached to them. (p. 116)

The predominant model of allopathic maternity care is deeply embedded in our culture to the extent that the statement by Davis-Floyd and Sargent (1997) still has merit. Consequently, the culture of maternity care has infiltrated the psyches, beliefs, and perspectives of individuals in society and has shaped what is perceived as possible for pregnant women. Davis-Floyd (1994), explains how layers of society are influenced, "the technocratic model functions as a powerful agent of social control, shaping and channeling individual values, beliefs, and behaviors" (p. 1). This is a problematic factor within the oppressive climate of maternity care and may contribute to the lack of understanding, investigation, and support around prenatal maternal consciousness. Davis-Floyd (1994) further explains the interconnection between the personal pregnancy and birth experience and the subsequent impact this has on all members and all domains of society:

Although a society's core value system is visible in many areas of cultural life, it is nowhere more evident than in the cultural treatment of the human body, most especially when that body is giving birth to the new social members that will ensure the future of the society into which they are born. Ensuring a society's future means ensuring not only its physical continuation but also the continuation

of the belief system that shapes the way its members cognize the world around them. Some part of that belief system is bound to deal with the question of how that society defines itself in relation to the natural world and to the natural reproductive forces upon which its continued existence depends. (p. 1)

The authoritative model has consequently left little room for pregnancy and childbirth to be recognized as a rite of passage that may support the advancement of women's consciousness. There is a lack of acknowledgement and support for the evolutionary nature of consciousness within maternal prenatal development. The state of maternity care is a multilayered, complex problem deeply embedded into our society and the forces and causes are beyond this discussion. Constructing a new realm of knowledge about what might be possible for first time, healthy, pregnant women's consciousness was the intention of this study.

Summary of Methods

The following is a summary of the methodology used in this study. The primary researcher was interested in a methodology that would generate a new conversation about maternal consciousness. A qualitative, abbreviated version of constructivist grounded theory methodology was used (Strauss & Corbin, 1994). This approach allowed the primary researcher to engage in a process of meaning making throughout the analysis. Grounded theory is useful for investigating life cycles (Glaser, 1992) such as pregnancy. The constructivist grounded theory approach was used to create a new, emergent discourse and to discover if, and how the experience of pregnancy can evolve a woman's consciousness. A new theory was generated that is grounded in the data analysis and provides insight into how pregnancy can evolve a pregnant woman's consciousness.

Research Question

This study explored the research question: “How can a woman's experience of pregnancy evolve her consciousness?” The investigation started with an inquiry focused on maternal consciousness rather than a formulated hypothesis. Commencing a study with a realm of inquiry is common within grounded theory research as it allows the researcher to be open to what the data reveal in order to discover an interpretive theory that is grounded in the analysis (Charmaz, 2006).

Participants

Eight participants (all over the age of 40 with more than 10 years of professional prenatal maternal experience) were recruited for this study. A purposive sampling method was applied. Participants were selected in order to simulate a microcosm of society as a way to explore the realities and potential for pregnant women’s process. The selection criteria was used to create representation of the different prenatal, professional specialties that exist within the subculture of prenatal maternity care. Additional considerations included the participant’s accessibility and availability. Pregnant women’s inner, psycho-emotional maternal life is heavily influenced by prenatal healthcare providers and educators; therefore, the voice of experts was sought in order to gain insight into how professional perspectives shape current maternity care models and what is possible from a professional perspective.

Ethical Protection of Participants

This research design was reviewed and approved by the Academic Committee of IUPS and was determined to meet the requirements of the University’s policies for

ethical obligations. All efforts were made to protect the participants' anonymity and maintain confidentiality.

Data Collection Procedure

The primary researcher moderated a 2 hour, semi structured, remote focus group with the group of homogenous, new, and concerned participating experts. More specifically, this was a unique configuration in that it was the first time these professionals with a concerned interest and expertise in the prenatal field all gathered together. Questions and prompts were presented to the whole group by the primary researcher in order to initiate and/or deepen dialogue. The participating experts responded openly in popcorn style.

Role of Researcher

In grounded theory studies with a constructivist approach, a researcher's interpretation of the data is integral to the analysis. The primary researcher applied reflexivity skills throughout the analysis and theorizing processes. Professional and personal preconceptions, beliefs, and experiences were identified to support a valid and reliable interpretation of data and construction of a theory.

Data Analysis Procedure

The study analysis included codes, themes, categories, subcategories, and reflective memo writing. The initial coding process began with manually coding the transcript with substantive (descriptive) codes per paragraph rather than line by line in order to capture the meaning and intention behind the data collected. Substantive codes were grouped into code families based on similarity. Then the code families were analyzed and merged into clusters of meaning (sometimes called themes). The focused

coding process next grouped the clusters of meaning together to discover the five core categories. Subcategories were identified as they revolved around the essence or axis of each core category (Charmaz, 2006). Discovering the interdependent relationships between the core categories was the cumulative step in the analysis process that allowed the primary researcher to generate a theory grounded in the reflexive interpretation of the data.

Summary of Study Results

The goal of grounded theory research is to create a theory. The Maternal Consciousness Sequence (MCS) theory is a response to the inquiry, “How can a woman's experience of pregnancy evolve her consciousness?” The premise of the MCS theory is that when a woman feels safe and empowered, she is able to cultivate maternal consciousness. Maternal consciousness evolves a woman’s consciousness. The results indicated that a pregnant woman needs to feel empowered in order for her to evolve her consciousness. The theory demonstrates a sequence of five phases. There is a cyclic and cumulative process of moving from these specific feeling states or phases within the MCS. Each time a woman cycles through the MCS her experience of Feeling Empowered increases which further develops her Emerging Maternal Consciousness. This process builds maternal consciousness and therefore supports a pregnant woman’s potential to evolve her consciousness. A pregnant woman’s movement through these five phases illustrates how pregnancy can evolve a woman’s consciousness.

The following is a summary of each phase within the MCS theory to help elucidate the potential for pregnancy to evolve a woman’s consciousness.

Emerging Maternal Consciousness

The results indicated that the emergence of maternal consciousness is catalyzed by the experience of being pregnant for a healthy woman. As a woman's maternal consciousness builds during pregnancy so too can she evolve her consciousness. The findings suggest influential facets of the prenatal maternal experience that support a healthy woman to develop her maternal consciousness. This phase of the MCS theory helps to explain the unique potential for a woman's experience of pregnancy to evolve her consciousness.

The catalytic function of this phase explains how conceiving is a monumental shift that can awaken a woman's maternal consciousness. Conceiving in of itself can be consciousness altering for a healthy woman and can be what initially catalyzes her maternal consciousness. A healthy pregnant woman's maternal consciousness may not emerge until she discovers she is pregnant or later when she acknowledges her baby in utero. The results indicated that the physical and energetic presence of a baby in a woman's body has the potential to open and ignite a pregnant woman's energy and body into a growth stage that promotes the conditions to evolve her consciousness.

The unique neurophenomenology and neuroplasticity of pregnancy affords new ways of perceiving, thinking, feeling, and behaving, particularly as a pregnant woman becomes more aware of her baby in utero. According to the results the repetitive experience of becoming aware of and connecting with the baby in utero contributes to building maternal consciousness. Being aware of her baby in utero can first occur during conception, discovery, or gestation, and then continues to happen throughout pregnancy. Connection with her baby in utero propels a woman into a new experience of self. For

some pregnant women their first awareness of baby in utero is the catalyst for maternal consciousness to emerge. A pregnant woman's ongoing experience of being aware of and connecting with her baby in utero promotes her capacity to progressively build her maternal consciousness.

Once maternal consciousness is catalyzed and has emerged there is then the opportunity for a woman to build her maternal consciousness that is the ongoing, progressive function of Emerging Maternal Consciousness phase in the MCS theory. These findings help explain the cumulative experience of cultivating maternal consciousness and how this promotes the evolution of a healthy woman's consciousness.

The results suggested that pregnancy is often the first time in women's lives when a woman's consciousness shifts from self to other. This process of moving from "me" to "we" initiated by the biological shift in a pregnant woman's body continues to develop as her baby in utero grows. As pregnancy progresses, the heart-to-heart relationship between mother and baby in utero has the potential to grow as well. The intimate experience of connecting with her baby in utero is conducive to increasing a woman's awareness of herself physically, mentally, emotionally, and spiritually. According to the findings, cultivating a heart-to-heart connection with her growing baby in utero is a factor that naturally promotes the development of her maternal consciousness.

The findings indicated that being in a growth state is necessary for the evolution of consciousness. Since pregnancy is a physical and neurobiological growth period, a healthy woman is well positioned to optimize her pregnancy to evolve her consciousness.

In sum, the MCS theory begins with the Emerging Maternal Consciousness phase. A woman's connection to her baby in utero and the reality of being pregnant is the

catalyst for her maternal consciousness to emerge and develop as she continuously cycles through the MCS phases. The Emerging Maternal Consciousness phase is unique in the MCS theory because it is both a catalyst and constant that establishes a baseline for a woman's maternal consciousness to develop throughout pregnancy. The development of her maternal consciousness supports her potential to evolve her consciousness. This first phase, Emerging Maternal Consciousness initiates the transformational potential of the maternal prenatal developmental milestone of becoming a mother.

Feeling Unsafe

The second phase of the MCS theory is Feeling Unsafe (physically, mentally, and/or emotionally). During pregnancy it is normal for uncomfortable feelings, ranging from worry, nervousness, and anxiety to terror to arise. Albeit the results emphasized the importance for pregnant women to have a felt sense of safety, the recurring experience of Feeling Unsafe is integral to a woman's process of developing her maternal consciousness. The discomfort of Feeling Unsafe often prompts the motivation to get resourced and return to Feeling Safe and continually moving through the MCS theory, which consequently builds maternal consciousness and evolves consciousness.

Pregnancy naturally engages a woman's biological imperative to survive as an individual and as a species. However, the challenge of the biological imperative is that it can make a pregnant woman more vulnerable to Feeling Unsafe. When a pregnant woman perceives that her need for safety and protection are chronically not met her growth is limited. Ultimately the chronic need to protect oneself due to Feeling Unsafe limits growth and consequently will limit the evolution of consciousness.

The process of moving out of the Feeling Unsafe phase is often motivated by a pregnant woman's connection with her baby in utero and her Emerging Maternal Consciousness. Feeling Unsafe creates an opportunity for a pregnant woman to return to Feeling Safe by getting resourced.

Feeling Resourced

The Feeling Resourced phase of the MCS theory is the bridge from Feeling Unsafe to Feeling Safe. This is a phase of growth wherein a pregnant woman returns to a secure place within herself either by internally or externally getting supported (also known as resourced). Resource, as a noun is defined as a source of support, a possibility of relief or recovery (Merriam-Webster, 2019d); as an adjective it is an ability to meet and handle a situation—resourcefulness (Merriam-Webster, 2019e); and more rarely as a verb it means to have what one needs to operate effectively and to be resourced or resourceful (Stevenson, 2010). The MCS theory demonstrates how the practice of repeatedly returning to Feeling Resourced after a pregnant woman feels unsafe can increase resilience and empowerment. Once again resourced, a pregnant woman returns to a growth state and thereby better positions herself to potentiate the dramatic neuroplasticity of pregnancy to support the evolution of her consciousness. Simultaneously, this process supports her to reconnect with a felt sense of safety and competence, all of which can positively influence the evolution of her consciousness.

The results related to Feeling Resourced were organized into two sections, getting internally and externally resourced. The overarching objective of Feeling Resourced is to produce a felt sense of safety and return to a growth state via an external or internal resourcing activity. These results correspond with existent literature on learned

resourcefulness—a term that has been used in research since the 1980s, which explains that resourcefulness (a constructive response to experience) is a skill that can be acquired and practiced, often associated with self-regulation skills (Brendel & Bennett, 2016; Goff, 2011; Rosenbaum, 1988; Siegel, 2010). Further, some mindfulness scholars use the term resourcefulness as an outcome of cultivating awareness through mindfulness training (Brendel & Bennett, 2016; Siegel, 2010).

The results suggested internal resourcing methods for a pregnant woman include practices of increasing body awareness and presence, opening up, being curious, and being mindful of her body as well as her baby in utero. Getting resourced from the dyadic, bidirectional relationship was also identified in the results as a way to get internally resourced. Cultivating a heart-to-heart relationship with baby in utero was named as a nurturing resource practice. Several participating experts shared that this practice is often an effective way for a mother to resource herself. The overarching objective of Getting Internally Resourced is to access inner support to reduce fear and generate internal safety. The results indicated that when a pregnant woman has a felt-sense of safety she is in a place of growing, exploring, and developing, all states conducive to evolving consciousness.

External support that is attuned to a pregnant woman's individual needs and whole-self, including her psycho-emotional-spiritual needs was emphasized in the results. More specifically, skilled prenatal practitioners with a whole-woman approach, such as PPN-educated practitioners, cranial sacral therapists, trained prenatal mindfulness counselors, and therapeutic pregnancy-birth art mentors were noted as key resources that can help a pregnant woman return to a felt sense of safety after feeling unsafe or stuck.

Participating Expert 5 explained the importance of securing external resource support during pregnancy:

There is a shift and an awareness that well-being and one's mental health are as important as physical health, and that it's not just a woman's uterus that is pregnant and going to give birth, but she, as a woman is there and needs to be attended to . . . I think there is a narrative medicine movement which is trying to actually help medical doctors to not just view organs but view the whole person and learn to really take in the story about their patient, the individual story.

According to the results, receiving external support from a trained prenatal practitioner with this quality of care can help a pregnant woman move through the MCS and potentially evolve her consciousness.

Feeling Safe

Feeling Safe is the fourth phase of the MCS theory. The cyclic return to Feeling Safe often allows for feelings of relief, rest, calm, and a greater connection with one's self and others. When a pregnant woman feels at ease within herself, she is freer to be present and aware. In the moments of accessing awareness and insight a pregnant woman can grow herself, and at the same time liberate from limiting thoughts, beliefs, and emotions, and behavioral patterns. Repeatedly returning to Feeling Safe promotes a pregnant woman's experience of feeling more resourceful and resilient.

Feeling safe is a subjective, body-mind experience that is beyond a thought or concept; it is a "felt-sense" of feeling safe in one's body and secure in one's life. Feeling safe is not a state that remains constant, nor is that the goal. According to the MCS theory, the goal is to establish a felt-sense of safety as the feeling state and consistent

place of return during pregnancy. When this essential need for a felt-sense of safety is met a pregnant woman can once again feel open, curious, and recuperate her self-awareness, which in turn supports her experience of pregnancy to potentially evolve her consciousness.

In sum, the results revealed how feeling safe can increase a pregnant woman's opportunity to evolve her consciousness. The repeated, proactive experience of moving from Feeling Unsafe to Feeling Safe makes it possible for a pregnant woman to increase her ability for emotional regulation. Repeatedly moving from Feeling Unsafe to Feeling Safe strengthens her baseline of resilience. Each time a pregnant woman reflects on moments of successfully regaining a felt-sense of safety after feeling unsafe, her resilience and sense of empowerment will consequently increase. The MCS theory shows how the continual returning to Feeling Safe is a process that empowers a pregnant woman and thereby increases the potential for her experience of pregnancy to evolve her consciousness.

Feeling Empowered

The fifth phase of the MCS theory is Feeling Empowered. The conceptual definition of Feeling Empowered, as derived from the data is a woman's subjective experience of feeling stronger and more capable within her new maternal body and mind. Feeling Empowered makes it possible for a pregnant woman to enjoy a more comfortable, competent, and confident experience of her maternal self, which, according to the results, is necessary for a woman to actualize her potential for pregnancy to evolve her consciousness.

The results suggested that a woman's potential for pregnancy to evolve her consciousness increases when she feels empowered and decreases when she predominantly feels disempowered over the course of pregnancy. The evolution of a pregnant woman's consciousness is advanced by the quality of her prenatal maternal experience, more specifically the frequency and depth of her continual return to a state of Feeling Empowered.

The repetitious cycling through the MCS establishes and fortifies empowerment via a pattern of maternal resilience that increases a pregnant woman's capacity and ability to meet the transformational challenges inherent in the life stage of becoming a mother. More exactly, a pregnant woman's reservoir of resilience is continually filled as she repeatedly enters the phase of Feeling Empowered. This has a positively compounding effect on her sense of self and potentially her consciousness.

As a pregnant woman's feeling empowered increases, so does her resilience and trust in herself. The more resilience and trust a pregnant woman has in herself and her body the more she feels empowered, and vice versa. This bi-directional, positive relationship supports feeling empowered, which in turn reinforces a positive self-concept of self as mother and builds maternal consciousness. The cumulative process of returning to Feeling Empowered increases a pregnant woman's self-awareness, expands her access to consciousness and deepens her resilience; trust in self, and sense of embodiment, all of which evolve her consciousness. All of these factors help a pregnant woman to embody a felt sense of safety and trust in her pregnant body.

A pregnant woman's sense of trust can be influenced by her healthcare providers. Engaging with care providers who trust the process of pregnancy can be pivotal and have

the potential to amplify a woman's strength and empowerment, by helping her trust in her body and self-awareness.

Feeling empowered can positively change how a pregnant woman relates to herself and her world. Through an empowered lens a pregnant woman is better positioned to engage in decision making that supports her movement through the MCS and promotes her consciousness to evolve. The results emphasized how influential feeling empowered can be on a woman's prenatal choices, labor and birth experience, and her overarching view of herself as a mother. When a pregnant woman feels empowered, she is optimally positioned to evolve her consciousness.

In summary, the MCS theory addresses the research question, "How can a woman's experience of pregnancy evolve her consciousness?" by demonstrating that there is a cyclic sequence of phases common to healthy pregnancy that may promote growth, resilience, self-awareness, and access of consciousness. Repeated movement through the phases of Feeling Unsafe to Feeling Resourced, Feeling Safe, and then to Feeling Empowered builds a pregnant woman's Emerging Maternal Consciousness, which supports a woman's potential to evolve her consciousness. The cumulative effect of moving through the MCS phases collectively, have the potential to help a pregnant woman cultivate an empowered self-concept as mother and evolve her consciousness.

Nonsignificant Findings

This study focused on the positive potential for the experience of pregnancy to evolve a woman's consciousness. However, while nonsignificant, there were two noteworthy findings regarding: a) a distinction about the emergence of maternal consciousness, and b) the reality of unfortunate prenatal and perinatal outcomes.

First, a belief in a higher power or a religious/spiritual worldview was discussed as not being needed for maternal consciousness to emerge nor for a pregnant woman's consciousness to evolve. Although this was only briefly discussed during the focus group, the quality of this data point contributed to the analytical understanding of the data collected as a whole. This finding aligns with the mindfulness meditation training literature in that the positive neuroplasticity and increase in awareness and access to consciousness results associated with mindfulness training are also not related to or contingent on any religious affiliation or spiritual belief system (Chan, 2016; Siegel, 2016; Duncan & Bardacke, 2010).

Second, the development of maternal consciousness and increase in self-awareness does not guarantee positive prenatal and perinatal outcomes for a woman and her baby. A pregnant woman's consciousness can develop even when prenatal and perinatal challenges occur. When skillful support is provided, it is possible for a pregnant woman to increase self-awareness and evolve her consciousness by moving through the MCS in response to an unfortunate outcome (such as miscarriage, stillbirth, emergency cesarean section birth). A woman may experience a deep dive into the Feeling Unsafe phase for a substantial period of time; however, as she gets resourced and supported to help her return to Feeling Safe and Feeling Empowered, she can continue to evolve her consciousness. The findings point to how unfortunate maternal/fetal outcomes need to be respectfully accepted as part of the unknown. Caution was suggested in how we make sense of the evolution or inhibition of consciousness in light of unfortunate prenatal and perinatal outcomes.

Discussion Overview

To review, the goal of this study was to explore the research question: “How can a woman's experience of pregnancy evolve her consciousness?” through a grounded theory approach. At the time of this study there has been little to no known research that has been devoted to better understanding how women’s consciousness may evolve during the life changing prenatal event of becoming a mother. The goal of this section is to discuss how the study results relate to the literature. This section begins with a discussion of relevant literature on consciousness during pregnancy, then the literature related to the neuroplasticity of pregnancy and how that relates to the research question is reviewed, followed by an overview of the literature related to the MCS theory and each of the five phases.

The Scholarly Context of Consciousness During Pregnancy

In the literature, due to the difficulty in studying and defining consciousness, self-awareness, awareness, or mindfulness are often used interchangeably with consciousness and/or as way to describe an aspect of consciousness (Farb et al., 2007; Josipovic, 2014; Lutz et al., 2007; Manna, et al., 2010; Siegel, 2016; Vago & David, 2012).

According to the study results, conceiving, in and of itself, can be consciousness altering for a healthy woman and can be what initially catalyzes maternal consciousness. Similarly, the presence of a prenatal has been purported to impact a woman’s concept of self as mother (Alhusen, 2008; Brandon et al., 2009; Glynn & Sandman, 2011; Lyman, 2005; Mercer, 2004, Partridge, 1998). Inherent to maternal consciousness is a woman’s concept of herself as mother, also known as her maternal identity. According to Mercer (2004), pioneer of the Becoming a Mother (BAM) theory:

Establishing a maternal identity in becoming a mother contributes to a woman's psychosocial development. In contrast to physical development, which is linear, some scholars have suggested that psychosocial development progresses as spiraling or widening, leading to an increase in a person's adaptive functioning.

(p. 226)

One aspect of this developmental milestone in the process of becoming a mother that is discussed in the BAM literature is the transition from “me” to “we,” which is also key within the Emerging Maternal Consciousness phase and contributes to the evolution of a woman’s consciousness during pregnancy. Mercer (2004) introduced the importance of a woman accepting her prenaté as a separate being as part of the maternal activity that commenced during pregnancy. Additionally, the opening or expansion in perception from “me” to “we” is considered advancement in consciousness within mindfulness training research and the field of interpersonal neurobiology (Siegel, 2007, 2012).

Rubin (1967), the founder of the Maternal Role Attainment (MRA) theory that later became the BAM theory, noted that a pregnant woman’s process and growth as a mother occurs interdependently and parallel to the biological development of her prenaté. This suggests that the development of a woman’s growing awareness of herself and maternal identity happens alongside her prenaté’s growth. Additionally, a woman’s acknowledgement of her prenaté and the developing dyadic relationship support a woman’s transformation (Mercer, 1967; Werner et al., 2016). Similarly, according to this study’s results the dyadic relationship impacts a woman’s maternal consciousness. Additionally, the findings suggested that a mental emotional state of growth (noted with

characteristics of openness, curiosity, and trust) alongside the innate physical growth state of pregnancy support a pregnant woman to evolve her consciousness.

The importance of the dyadic relationship for the mother was emphasized within the study findings; however, there is little to no known other research that investigates the implications of the dyad from the maternal perspective. The dyadic relationship between a healthy pregnant woman and her pre-nate sheds light on the uniquely interdependent nature of pregnancy. The interdependent relationship between a pregnant woman and her pre-nate might factor into how her experience of pregnancy has the potential to evolve her consciousness.

The results of this study indicated that the physical and energetic presence of a pre-nate has the potential to open and activate the pregnant woman to evolve her consciousness. The dyadic relationship during pregnancy starts a bidirectional, relational dynamic that may give a healthy pregnant woman greater access to awareness and insight. Scholarly thinking has suggested that it might be that humans first develop awareness as a relational process (Siegel, 2018a). If awareness begins for humans as a relational process, then one could speculate that the dyadic prenatal, maternal relationship may open a healthy woman's mind to perceive greater awareness or consciousness. The literature acknowledges the psychological transformation that occurs as a woman cultivates her sense of self as mother while she develops her psycho-emotional relationship with her baby (Davis-Floyd 2004, Mercer, 2004; Partridge, 1988). Scholars have referred to this as a rebirth of self and a complex psychological birth of the mother/woman (Davis-Floyd, 2004; England & Horowitz, 1998; Partridge, 1988). The co-emergence of maternal consciousness, cultivation of concept of self as mother, and

prenatal maternal period of psychological birth all underscore this study's findings that point to the unique potential of how pregnancy can evolve a woman's consciousness. The next section addresses how research regarding the neuroplasticity of pregnancy supports the findings of this study related to how pregnancy holds the unique potential to evolve a woman's consciousness.

Neuroplasticity of Pregnancy

The literature has recently revealed that pregnancy is a developmental stage of neuroplasticity during female adulthood (Brunton & Russell, 2007, 2008; Brunton et al., 2013; Donegan, 2015; Glynn & Sandman, 2011; Hillerer et al., 2014; Hoekzema et al., 2017), and has likened this dramatic stage of neuroplasticity to other heightened developmental stages of neuroplasticity, such as early childhood (Siegel & Bryson, 2012) and teenagehood (Siegel, 2014). Due to the neurobiological changes of pregnancy, the healthy pregnant brain is receptive to change, thus making the intentional repetition of new internal responses and external behaviors more readily able to be established as new patterns.

Healthy pregnant women may have the potential to optimize the significant changes to their brain structure, function, and state by creating new neural patterning and respectively increasing self-awareness and thereby evolve consciousness. Dan Siegel, MD (2010), author of numerous articles, chapters, and the internationally acclaimed texts, *The Developing Mind: How Relationships and the Brain Interact to Shape Who We Are* (2012b) and *Interpersonal Neurobiology* (2012a), explains that neurons that fire together wire together, and subsequently when a new synaptic connection is made and repeated a new neural circuitry or new response pattern is embedded.

A healthy pregnant woman is shaping her sculptable pregnant brain in favor of greater awareness and evolution of consciousness when she notices herself experiencing the phases of the MCS and then guides herself to the next phase. In addition, as a pregnant woman repeatedly cycles through the MCS she is making new neural pathways that engage her body and brain in creating more aware, responsive, reflexive ways of perceiving and behaving. It is through this cyclic process that a healthy pregnant woman can optimize the unique neuroplasticity of her pregnant brain to evolve her consciousness. According to Brizendine (2006), “Motherhood changes you because it literally alters a woman’s brain – structurally, functionally, and in many ways, irreversibly” (p. 95).

When repeatedly progressing through a sequence that promotes self-awareness during the dramatic neuroplasticity of pregnancy a woman can exponentially increase her potential to positively establish new patterns of perception and function that evolve her consciousness. Glynn & Sandman (2011) emphasize the significant adaptation to the pregnant brain linked to the intense prenatal hormonal changes and presence of the prenatate,

Prenatal hormone exposures are critical for priming the maternal brain for the challenges of motherhood and have implications for the mother’s brain structure and function that may last the rest of her lifetime. Just as the reciprocal nature of the parent–child relationship must be understood during the postnatal period, in order to understand the persisting influences of the intrauterine environment on neurodevelopment, the effects of the prenatal environment on both fetus and mother, as well as their reciprocal influences, must be appreciated. This is critical

because the same hormones that program fetal development are those that shape the maternal brain and because prenatal bidirectional signaling may provide an adaptive function for both mother and fetus. (p. 384)

When a pregnant woman repeatedly moves through the MCS of feeling states that promotes personal growth while in a developmental phase of neuroplasticity, she can exponentially increase self-awareness and therefore evolve consciousness. The following section further discusses how the MCS theory relates to existent research.

The Scholarly Context of the MCS Theory

There are no known theories at the time of this study that address maternal consciousness evolving during pregnancy.

The theory that addresses the mental and emotional changes and growth women experience through the process of pregnancy and motherhood is BAM theory (Mercer, 2006). The difference between BAM and the MCS theory is that the former is based on linear progression from a start to end point. The MSC theory is a sequence of five phases that make a cycle that is repeated throughout pregnancy. More specifically, the BAM theory about maternal identity is based on a linear transition that has its preliminary beginnings in pregnancy and matures during a woman's first year as a mother. The MCS theory is different than BAM in that BAM is focused on the linear development that a new mother experiences through her maternal tasks and behaviors accomplished during her baby's first year. According to the BAM theory, a woman increases her competence by demonstrating her mothering role that strengthens her maternal identity, whereas the MCS theory looks at how a woman increases her self-awareness and evolves during maternal prenatal development per her repeated cycling through the five phases.

It is important to note that the BAM theory was published in 2004 when consciousness language and research was prolific. Mercer (2004) used the term persona rather than consciousness when referring to a new mother's engagement in defining her new self. Persona is defined as an individual's social facade or front that reflects the role in life the individual is playing (Merriam-Webster, 2019a). Rubin (1984), founder of Maternal Role Attainment theory (the predecessor theory to BAM), although focused on maternal identity, commonly used the terms maternal system or self-system to refer to a mother's whole being. The major difference between the MCS and BAM theories is that the former views emerging maternal consciousness as the vehicle of transformation and the latter suggests that mothering tasks performed with increased competence propels the formation of maternal persona or identity.

Additionally, Galinsky (1987) developed a parental theory of growth that is based on an interactive process with the child's movement through developmental milestones or stages. Galinsky (1987) defines stages as:

Periods of times in which one's emotional and intellectual energy is primarily focused on one major psychosocial task or issue to be resolved. These major tasks include many related tasks and themes, and each is present, embryonically, from the very beginning of parenthood. (p. 9)

According to this theory, a parent grows as they move from stage to stage and this growth is "not simply a matter of becoming larger and being able to do more. There is a sequence of development which involves fundamental reorganizations in ways of perceiving and thinking" (p. 14). Although Galinsky (1987) does not discuss specifically changes to a

parent's consciousness, within her definition of parental growth it may be assumed that a parent's consciousness is included.

Analogous to the MCS theory, in part, is the practice of both formal (sitting) mindfulness meditation and informal (day-to-day) mindfulness practice because of the awareness, experience, and positive neuroplasticity involved in repeatedly returning to a state of resourcefulness and presence with a resilient, broad perspective or open-mind. In the MCS theory this state of return is called the Feeling Safe phase and in mindfulness meditation or mindfulness training literature this state is often referred to as calm abiding with open or wide awareness (Dahl, Lutz, & Davidson, 2015; Lodro, 1998).

The neuroscience research and literature on mindfulness meditation provides insight into how the processes engaged in paying nonjudgmental attention to one's mind (thoughts and feelings) while frequently returning to a restful, calm state cultivates self-awareness, increases one's window of tolerance in response to stress (resilience), and improves well-being (sense of feeling empowered) (Davidson et al., 2003; Desbordes et al., 2012; Kabat-Zinn et al., 1985; Manna et al., 2010; Vago & Silbersweig, 2012; Weng et al., 2013). Mindfulness meditation research (Garland et al., 2011) helps substantiate how the pattern of repeatedly returning to Feeling Safe in the MCS theory is a way to support the cultivation of consciousness in collaboration with positive neuroplasticity.

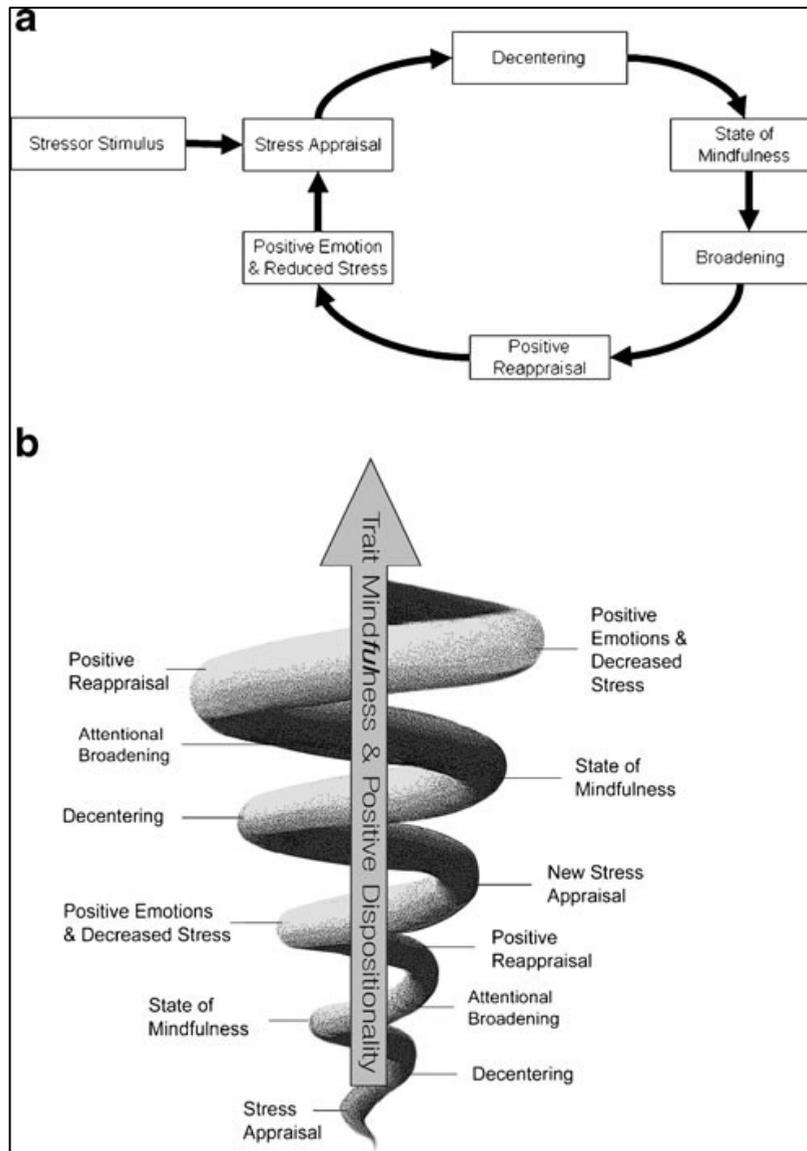
Researchers propose that mindfulness can accrue from a transitory state that an individual frequents to a trait or disposition that one embodies by repetition (Chambers et al., 2009; Garland et al., 2010). The Mindful Coping Model (Garland et al., 2011, Garland et al., 2010) suggests that the practice and application of mindfulness generates the dynamic of an upward spiral process that "may engender a broadened state of

awareness that facilitates empowering interpretations of stressful life events, leading to substantially reduced distress” (Garland et al., 2011, p. 1). According to this model, clearer awareness or mindfulness increases one’s capacity to cope with stress, because of the open-minded presence, broad perspective and resilient, flexible thinking and responding an individual is able to apply. According to Garland et al., (2011), when in a mindful or metacognitive state, an individual has a vantage point from which she can positively reappraise a stressor with an “empowered interpretation” (p. 1). Similarly, according to the proposed MCS theory, a pregnant woman may experience an upward spiral process by her repetitious and cyclic returning to a resourceful, open-minded, safe state that over time can create dispositional resilience and empowerment, as well as greater consciousness.

The Mindful Coping Model explains how an individual moving through an upward spiral process by way of mindfulness is more able to perceive challenging circumstances as meaningful opportunities to learn and grow (Fredrickson & Joiner, 2002; Garland et al., 2010; Garland et al., 2011). A function of evolved consciousness is flexible thinking and responding as compared to reactivity. The MCS theory suggests that a pregnant woman’s self-awareness increases by the reoccurring cycling through the five phases, and, therefore, she evolves her consciousness. As a result, she is more able to reframe challenges that previously could have kept her in Feeling Unsafe and unable to move into Feeling Resourced to regain a sense of Feeling Safe and empowered. The MCS theory, when cycled through repeatedly in an upward spiral motion provides resilience and builds awareness in a similar way in which the Mindful Coping Model

does. The following is a diagram of the Mindful Coping Model to demonstrate the similarities it has with the MCS theory.

Figures 11 & 12



11. The Mindful Coping Model: Cross Sectional View (Garland et al., 2010)

12. The Mindful Coping Mode: Longitudinal View (Garland et al., 2011)

The Scholarly Context of the Emerging Maternal Consciousness Phase

The first phase of the MCS is Emerging Maternal Consciousness and it has a dual function in the theory. When maternal consciousness initially emerges, it ushers a woman into the rite of passage of becoming a mother. Subsequently, her emergent maternal consciousness continues to develop along with her pregnancy and serves to remind her of the reality that she is a mother, and at the same time urges her to make healthy choices for her sake and her prenaté's. The results of the study indicated that Emerging Maternal Consciousness catalyzes a pregnant woman into a unique period of being and becoming wherein she is both being (or experiencing) maternal consciousness and she is becoming a deeper, more expansive embodiment of maternal consciousness. According to Davis-Floyd (2004) "Pregnancy viewed from a Turnerian perspective is that it is both a state and a becoming" (p. 23). The Emerging Maternal Consciousness phase of the MCS theory in both its initial and cumulative emerging, points to a pregnant woman's emergent potential.

The Emerging Maternal Consciousness phase of the MCS theory brings a pregnant woman into a portal of liminal space. According to Davis-Floyd (2004) "One of the chief characteristics of this liminal or transitional period or any rite of passage is the gradual psychological 'opening' of the initiates to profound interior change" (p. 22). The literature on the liminality of pregnancy adds to the understanding of how this period of being and becoming could be particularly conducive to evolving consciousness. Davis-Floyd (2004) continues, "What Turner calls liminality, pregnant women experience as a sense of change, of growth. . . . and a trembling sense of unknown, unknowable potentiality" (p. 24). The results revealed that there is a progressive parallel between the

emergence of maternal consciousness, transformation of a woman's sense of self, and pregnancy. Davis-Floyd (2003) states, "Inner emotional and physiological transformations are reflected almost daily in outward change" (p. 24).

The findings from this study suggest that maternal identity is enfolded within a woman's maternal consciousness as she progresses through her pregnancy. Furthermore, a pregnant woman integrates her new identity of mother and expands to include her maternal identity into the matrix of her self-awareness as part of her emerging maternal consciousness. The maternal rite of passage literature elucidates the start of the maternal self or identity, "The phase during which the newly pregnant woman gradually separates herself from her former social identity has its beginnings in her very first flutterings of conscious awareness of the possibility of pregnancy" (Davis-Floyd, 2003, p. 22). This is comparable to when the initial emergence of maternal consciousness arises within the MCS theory.

The Scholarly Context of the Feeling Unsafe Phase

The second phase of the MCS theory is the state of Feeling Unsafe. This study investigated the state of Feeling Unsafe for mentally healthy, first-time pregnant women (which did not include women diagnosed with mental illness or measuring high on a depression anxiety scale). In the context of the MCS theory a pregnant woman's presentation of Feeling Unsafe can include feelings such as insecure, nervous, anxious, scared, sad, anguished, angry, or what is sometimes generically called, stressed.

Modern research indicates that feeling uncomfortable, in its myriad gradations, can be the compost that bears fruits of resilience (Garland et al., 2011). In other words, there can be benefits to feeling nervous, scared, worried, anxious, and so on. Professor

McGonigal (2016), an expert in the science of stress and researcher on the upside of stress explains that when people have the mindset that they “have the capacity to transform stress into something good . . . then self-doubt is replaced by confidence, fear becomes courage, isolation turns into connection, and suffering gives rise to meaning” (p. 221). McGonigal’s (2015) research has substantiated that there is a correlation between how we view stress and our ability to utilize stress in resiliently making a "meaningful, purposeful life" (p. 2). Similarly, the MCS theory proposes that the state of Feeling Unsafe (and its consequent array of emotions) serve a vital function in the process of a pregnant woman increasing her self-awareness, self-efficacy, self-regulation, and resilience. In kind with recent research (Garland et al., 2011; McGonigal, 2015), the MCS theory suggests that healthy pregnant woman can utilize the stress of Feeling Unsafe to get resourced and transform fear into courage, isolation into connection, and self-doubt into confidence, unsafety into resilience.

Resilience can be fostered based on how one responds to stress and even trauma. The way an individual responds to stress is influenced by her perspective on the bigger picture of life, and this shapes how one forms a narrative that is integrative and helps make sense, meaning, and purpose of her life (Garland et al., 2011; McGonigal, 2016; Peres, Moreira-Almeida, Nasello, & Koenig, 2007). The MCS theory is grounded in the data that a woman’s perspective on life expands during pregnancy; as the development of her baby in utero progresses so too does her maternal consciousness and sense of purposefulness of life.

The pregnant brain and body are more attuned to an experience of interconnectivity with creation or what some call the creative or mothering principle. A

greater awareness of the meaningfulness of life and having a greater sense of purpose converged with the dramatic neuroplasticity of pregnancy creates favorable conditions for a pregnant woman to exponentially increase her window of tolerance with stress and build resilience.

A significant advancement in the psychobiological literature was made by Stephen Porges, PhD (2004) who proposed the Polyvagal Theory (the relationship between the autonomic nervous system and social-emotional processes) and contributed the term neuroception that is the neurobiological mechanisms involved in the perceptions of risk and safety. According to the research of Porges (2004), an individual's neural circuits perceive whether situations or people feel safe or unsafe. Encouraged by the literature, researchers and clinicians have created evidence-based interventions as a resource to be used by individuals or practitioners, such as Porges' Safe and Sound Protocol (SSP) (Porges, 2018), that promotes positive adaptive changes by way of neural exercising to increase one's baseline sense of safety. The relationship between the autonomic nervous system and social-emotional processes is heightened during pregnancy due to the concentrated period of neuroplasticity, the dyadic relationship between mother and baby in utero, and the pregnant woman's primary interpersonal supportive connections. Similarly, repetitive movement through the MCS theory promotes neural adaptation toward a felt sense of safety. Pregnant women can strengthen their neural pathways that connect Feeling Unsafe to Feeling Resourced to Feeling Safe as they move through the MCS.

Resilience literature by Feder, Nestler, and Charney (2009) explains that most people respond to stress with resilience due to "environmental, genetic, epigenetic and

neural mechanisms that underlie resilience” (p. 1). Furthermore, the psychobiological research on resilience shows that stress responses are:

Mediated by adaptive changes in several neural circuits involving numerous neurotransmitter and molecular pathways. These changes shape the functioning of the neural circuits that regulate reward, fear, emotion reactivity and social behaviour, which together are thought to mediate successful coping with stress.

(Nestler & Charney, 2009, p. 1)

In the MCS theory, a healthy pregnant woman’s neural networks are inclined toward positive neuroplasticity. During pregnancy, as a woman repeatedly cycles through the MCS, particularly moving from Feeling Unsafe to Feeling Resourced to Feeling Safe, she improves her response to stress as a result of reshaping her neural design and increasing her resilience.

Often in a time of change and transformation, especially during the profundity of pregnancy, and what Turner called, liminality (Davis-Floyd 2003), emotions associated with feeling unsafe arise such as fear, isolation, sadness, loss, and frustration, in addition to the positive prenatal, maternal emotions of joy, wonder, curiosity, awe, and hope. These emotions emerge from “a trembling sense of unknown, unknowable potentiality” (Davis-Floyd, 2003, p. 24). For healthy women the vulnerability of pregnancy, when supported, can help her move through feeling unsafe and be positively directed to promote resilience. Conversely, feeling unsafe, when left unsupported can be experienced chronically and therefore limit growth. When a pregnant woman perceives that her need for safety and protection are chronically not met her growth is limited. Ultimately the consistent need to protect one’s self due to feeling unsafe limits growth.

There is a substantial body of research that has examined the consequences of unfavorable maternal prenatal factors on prenatals (Graignic-Philippe, Dayan, Chokron, Jacquet, & Tordjman, 2014; Merlot, Couret, & Otten, 2008; Monk et al., 2004; Monk et al., 2011; Mulder et al., 2002; Van den Bergh, 2011; Weinstein, 2016) and children (Beijers, Buitelaar, & de Weerth, 2014; Monk, Georgieff, & Osterholm, 2013) as a result of pregnant women chronically or traumatically Feeling Unsafe without support. The majority of research focused on the negative mental health implications for pregnant women has found that “of the over 4 million live births each year in the United States, nearly 800,000—or 20%—of the mothers will develop major or minor depression within the first 3 months postpartum” (Werner et al., 2016, p. 1). Perinatal depression includes pregnancy and/or the postpartum period and is one of the leading causes of maternal perinatal morbidity and mortality (Laurent et al., 2018; Osborn & Monk, 2013). In addition to perinatal and postpartum depression, going through moments or periods of feeling unsafe without support while pregnant can be a detriment to a woman’s nervous and immune systems (Merlot et al., 2008; Culhane et al., 2001). Studies show that mentally healthy pregnant women are more prone to feeling unsafe during pregnancy when there has been a history of child abuse (Anda et al., 2006; Weinstein & Verny, 2004), hence the recommendation for therapeutic support (Leeners, Richter-Appelt, Imthurn & Rath, 2006; Weinstein & Verny, 2004). Circumstances that generate feeling unsafe can be harmful to a pregnant woman and can negatively impact her prenatals. Maternal prenatal chronic stress, anxiety, and depression negatively impact prenatals and child development (Beijers et al., 2014; Glover, 2014; Monk et al., 2013). One of the key

mitigating factors to feeling unsafe is the quality and quantity of support women receive, otherwise known as the Feeling Resourced phase of the MCS.

Catherine Monk, Professor and Director of Research at the Women's Program at Columbia University Medical Center and clinical psychologist who helps women at-risk-for or struggling with perinatal depression and/or anxiety, and she is a significant contributor to the mounting research on the negative implications of prenatal stress for women who go unsupported and under-resourced. Monk and her colleague, Elizabeth Werner designed the preventative psychotherapy intervention, Practical Resources for Effective Postpartum Parenting (PREPP) with objectives to increase maternal health and mother-baby well-being and help prevent postpartum depression. The results of the preliminary PREPP research indicated the effectiveness of a pregnant woman (at risk for PPD) receiving professional guidance on how to improve her intrapersonal awareness and interpersonal skills with her baby (Werner et al., 2016). The early findings suggested that with the help of personalized trained support, a pregnant woman can address and move through the uncomfortable places associated with feeling unsafe. In other words, PREPP seems to demonstrate how receiving support can assist pregnant women to feel resourced and at the same time develop and maintain the neural pathways of resilience similar to what the MCS theory proposes regarding the prenatal, maternal practice of returning to Feeling Safe.

What distinguishes this dissertation study from the majority of research conducted on the implications of maternal stress during pregnancy is its focus on what is positively possible for healthy pregnant women. According to this study's results and the literature related to resilience, it is possible for a pregnant woman to use her increased vulnerability

and emotions related to feeling unsafe to support her expansion of consciousness. The literature on resilience clarifies how a pregnant woman can intentionally use stress (Feeling Unsafe) to increase her self-awareness (Garland et al., 2011). The ability for a pregnant woman to acknowledge she is feeling unsafe and then reach out for support requires a level of self-awareness. Prenatal, maternal resources (such as skilled, therapeutic support) have been shown to help new mothers move through feeling unsafe and experience positive psycho-emotional outcomes (Chan, 2016; Duncan & Bardacke, 2010; Werner et al., 2016). In the MCS theory, the bridge from Feeling Unsafe to Feeling Safe is Feeling Resourced.

The Scholarly Context of the Feeling Resourced Phase

The third phase of the MCS theory is Feeling Resourced. When one feels resourced there is a sense of “I’m okay, I can handle this.” The term “okay-ness” is sometimes used within mindfulness training instruction. When a pregnant woman is able to bounce back from stress by getting resourced (either internally or via external support), she exhibits resilience.

The psychology and neuroscience literature concur that there is an interdependent relationship between the psycho-emotional experience and neuroplasticity of healthy pregnancy that create conditions of emotional vulnerability and intrinsic neuroplastic flexibility (Brunton & Russel, 2008; Glynn & Sandman, 2011; Hoekzema et al., 2017; Partridge, 1988; Sandman et al., 2011). This study’s results align with the literature in suggesting that a pregnant woman needs resources and support in order to engage her dramatic neuroplasticity for favorable adaptations, particularly when faced with stress and feeling unsafe.

Getting resourced builds resilience and optimizes the potential of prenatal positive neuroplasticity for the pregnant mother as well as her baby. When a woman is in the developmental milestone of pregnancy, she is naturally positioned to build resilience. Plasticity and resilience are inter-related and similarly defined (Merriam-Webster, 2019b, 2019c). For example, both terms are described as bouncy, elastic, flexible, springy, stretchable, supple, adaptable, malleable, moldable, plastic, pliable, and pliant. When a pregnant woman gets resourced it is more likely that she will favorably adapt, because she is in the heightened neuroplastic phase of pregnancy with more of flexible inclination. The process of getting resourced and the likely subsequent positive effects can lead a pregnant woman to feel resourced, resilient, and safe.

A pregnant woman's resilience to repeatedly return to feeling safe is facilitated by her use of an internal or external resource. The pattern of repeatedly returning to a felt-sense-of-safety, or what is sometimes called an open, calm state increases resilience (Porges, 2004). Additionally, research suggests that getting resourced is an essential building block to build resilience and increase self-awareness (Chan, 2016; Reis & Alligood, 2014).

Across disciplines, scientists and clinicians agree that support is essential for pregnant women to feel safe, secure, calm, open, and curious (Davis-Floyd, 2004; Duncan & Bardacke, 2010; Mercer, 2004; Prinds et al., 2004; Werner et al., 2016). Theories such as MRA, BAM, PPN, and Polyvagal concur with the MCS theory's perspective that skillful, attuned practitioner support (Geller & Porges, 2014) as well as evidenced-based interventions, such as meditation, yoga, and breathing practices (Babbar et al., 2012; Chan, 2010; 2016; Cramer et al., 2015; Davis, Goodman, Leiferman, Taylor,

& Dimidjian, 2015; Duncan & Bardacke, 2010; Kaur & Singh, 2015; Krishnakumar et al., 2015; Reis & Alligood, 2014; Werner et al., 2016) resource pregnant women. These resources have been described as effective tools that support pregnant women's repetitive movement from Feeling Unsafe to Feeling Resourced to Feeling Safe.

A large body of prenatal maternal research focuses on what happens when things go wrong. This study examined what can go right if mentally healthy, first time pregnant women have support. Lack of getting resourced has been linked to a sense of powerlessness whereas getting resourced and supported has been shown to promote health and a feeling of empowerment (Garland et al., 2011; Wallerstein, 1992).

Recommended throughout the literature are holistic therapeutic techniques and interventions (also known as resources) for pregnant women that promote self-awareness, such as prenatal yoga and meditation, and other complementary alternative medicine modalities (Davis-Floyd, 2004; Prinds et al., 2004; Brazelton, 1973; Reis & Alligood, 2014; Werner et al., 2016). There are four noteworthy prenatal mindfulness resources that help substantiate the preliminary MCS theory. First, Bardacke's Mindfulness-Based Childbirth and Parenting (MBCP) pregnancy program, a formal adaptation of the Mindfulness-Based Stress Reduction Program (MBSR), is an example of an evidence-based prenatal maternal program that teaches mindfulness skills during pregnancy (Duncan & Bardacke, 2010; Duncan, et al. 2014; Duncan, et al. 2017). Second, the PREPP program has also shown the efficacy of trained counselors supporting pregnant women with mindfulness and self-reflection skills (Werner, et al., 2016). The MCS theory does not suggest a particular way to get resourced, rather advocates for personalized resources that best align with individual needs. Davis-Floyd (2004)

discusses the value of therapeutic support during pregnancy based on “the inner flux and state of growth of pregnancy has the potential to permeate a woman and impact her on all levels, spiritual, emotional, psychological, and physical” (p. 24). Prenatal resources and support systems can help promote self-awareness due to the neuroplastic nature of this developmental period. Third, Dr. Chan, a female obstetrician in Hong Kong, developed and tested the mindfulness-centered, Eastern Based Meditative Intervention (EBMI) that demonstrated positive bio-psycho-socio-spiritual change among pregnant participants, such as increased coping with stress, positive thinking, self-esteem, awareness, and an overall transformation of mental processing and mind (Chan, 2016). Fourth, Mindfulness-Based Childbirth Education (MBCE) in Australia was developed and studied with findings that suggested benefits such as an increase in health literacy and resilience for pregnant women (Byrne, Hauck, Fisher, 2011; Byrne, Hauck, Fisher, Bayes & Schutze, 2014).

The importance of prenatal, maternal support in shaping maternal identity has been identified and emphasized by Rubin (1984) and Mercer (2006) within the MRA and BAM theories. In the BAM theory, a pregnant woman’s experience of support or the lack thereof can significantly influence her experience of becoming a mother. The MRA theory identifies emotional, informational, physical, and appraisal (Rubin, 1984) aspects of support, all of which are also integral to the Feeling Resourced phase of the MCS theory.

The mother-prenate dyad has been identified in the literature (Harth, 2015; Werner et al., 2016) and within this study’s results as a resource for pregnant women. According to the PREPP program, the dyadic relationship between mother and baby (in

utero and postpartum) can be optimized as a resource for a woman during her pregnancy and postpartum (Werner, et al., 2016). The heart-to-heart relationship between a woman and her baby in utero has resourcing effects that may foster self-regulation and resilience. Listening to the prenaté's heartbeat was identified by the participating experts as a resourcing activity for the mother. Similarly, studies have demonstrated that bonding benefits occur for pregnant women when they hear/see ultrasound images of their prenaté (de Jong-Pleij et al., 2013; Ji et al., 2005).

The Scholarly Context of the Feeling Safe Phase

The fourth phase of the MCS theory is Feeling Safe. This study's findings emphasized the importance of a felt-sense-of-safety for pregnant women. A felt-sense-of-safety is needed so that a pregnant woman may feel calm, at ease, open, curious, explorative, and restful. Porges' Polyvagal Theory (Porges, 2017) underscores that, "safety is critical in enabling humans to optimise their potentials along several domains. Safe states are a prerequisite not only for social behavior but also for accessing the higher brain structures that enable humans to be creative and generative" (p. 47). The study results highlighted it is not possible to grow while one is feeling unsafe. Therefore, to be in a psycho-emotional growth state one must feel safe. The MCS Theory proposes that a pregnant woman grows herself, develops her maternal consciousness, increases her self-awareness and evolves her consciousness as she cycles through the 5 phases.

A complement to a pregnant woman's expeditious physical growth could be what Stanford University professor and researcher, Carol Dweck calls a growth mindset. Dweck explains that a growth mindset versus a fixed mindset is when someone's point of view is such that success will come from their effort and they can develop their

intelligence over time as compared to talent, ability, or smarts perceived as innate and fixed (Rattan, Savani, Chugh, & Dweck, 2015). The growth mindset can be applied to all kinds of intelligence including mental, emotional, psychological, and social. Due to the neuroplasticity of pregnancy, women are neurobiologically more inclined to adopt a growth mindset. Maternal consciousness is not fixed, it is developed over time with efforts to keep returning to a felt-sense-of-safety as elucidated by the MCS theory.

Again, in order to grow, a pregnant woman needs to feel safe. As previously mentioned, Porges' literature contributed the term neuroception to help researchers and clinicians understand that safety, perceived danger, or life-threat is determined by the implicit perception of the neural networks of the body. The perception of safety is determined by the body. Neuroception is involuntary, whereas interoception can be intentional. Furthermore, the development of the skill of interoceptive attention has been discovered to increase feeling calm and safe (Craig, 2009; Khalsa et al., 2008). Engaging an interoceptive focus was identified as a resource within the study results to help a pregnant woman move through the MCS theory and increase self-awareness.

Neuroscientific literature explains that attention on interoceptive awareness (inner body awareness) is associated with the part of the brain called the insula (Craig & Craig, 2009; Hölzel et al., 2007; Siegel, 2007, 2018). A function of the insula is to help an individual to be aware of the internal experience of her/his body. Examples of interoceptive awareness include pain, temperature, heartbeat, maternal loving connection to baby, feeling of knowing, and emotional experience of music (Craig, 2009). When attention is on the inner body there can be a calm that arises, also referred to as a felt-sense of safety (Porges, 2004).

Research has linked internal body awareness (interoceptive awareness) with the insula region of the brain, which is also associated with feeling safe, calm, and even compassion (Craig, 2009; Davidson & McEwen, 2012; Hölzel et al., 2007; Siegel, 2007, 2018). Studies on mindfulness meditation have shown an increase in insula activity as a result of mindfulness meditation practice, particularly the anterior insula or anterior insular cortex (AIC) (Garland et al., 2011; Hölzel et al., 2007). Mindfulness meditation training has proved to restore balance between emotional and sensory neural networks which allows for body awareness of emotion (Farb, et al., 2010). Research on mindfulness meditation with body awareness (interoceptive focus), such as focused attention on the breath, showed increase in present moment awareness (Farb et al., 2007), internal body awareness, emotion response, and empathy (Lutz, et al., 2009). A study on the effectiveness of women learning and practicing meditation during pregnancy through the MBCP program showed that pregnant women had a statistically significant increase in body awareness (Duncan, et al., 2017).

The findings regarding MBCP add understanding to how the process of returning to a calm, relaxed, open state (as it is referred to in mindfulness meditation literature) or to a felt-sense-of-safety (as it is called in the MCS Theory) can help promote self-awareness and improve outcomes for pregnancy, birth, postpartum, and early-mothering (Duncan & Bardacke 2010; Duncan, et al., 2014; Duncan, et al., 2017). Duncan et al., (2017) noted the connection between prenatal maternal mindful awareness and an increase in well-being per the study findings.

Research indicates that interoceptive attention activates left side anterior insula activity that has been linked to a parasympathetic response. In general terms, feeling

unsafe (fight/flight) relates to the sympathetic nervous system state and feeling safe (feeling connected to one's self and available for emotional connection with others) relates to the parasympathetic nervous system, more specifically parasympathetic ventral vagal complex (Porges, 2004). The parasympathetic system is associated with neural network signaling between left forebrain (Davidson, 2004), left anterior insular cortex (Craig, 2005; Craig 2009) and the autonomic nervous system (Porges, 2004; Siegel, 2007). Parasympathetic signaling is involved in feeling safe, relaxed, at ease, calm, and receptive. As discussed, neuroscientific mindfulness meditation research has shown the benefits of frequently generating a parasympathetic experience by the repetition of returning one's attention to the breath, or a calm abiding, while observing the mind (Farb et al., 2007; Craig, 2009, Davidson, 2009, Weng et al., 2013). Similarly, within the MCS theory, when a healthy pregnant woman repeatedly returns to a felt-sense-of-safety she is at the same time increasing access to her neural parasympathetic networks.

In sum, feeling safe and the parasympathetic ventral vagal system are interrelated. This study's findings indicated that a felt-sense-of-safety was paramount for a woman to realize her potential to evolve her consciousness during pregnancy. The Feeling Safe phase of the MCS Theory involves a parasympathetic ventral vagal response. The anterior insula cortex (AIC) has been associated with the parasympathetic response and to self-awareness or consciousness (Craig, 2009). Increased activity in the AIC has been considered to be a potential neural correlate of increasing consciousness (Craig, 2009). The literature brings greater understanding to how the repetition of returning to the state of Feeling Safe (within the context of cycling through the five phases of the MCS) during

the dramatic neuroplasticity of pregnancy can promote an upward spiral, increasing consciousness, resilience, and feeling progressively more empowered.

The Scholarly Context of the Feeling Empowered Phase

The fifth phase of the MCS theory is Feeling Empowered. When a pregnant woman feels supported and safe according to the MCS theory proposed, she is more likely to feel empowered because she has experienced resilience having moved from Feeling Unsafe to Feeling Safe. The results highlighted a connection between a pregnant woman experiencing trust in herself and her body, with a sense of empowerment. Feeling empowered is a woman's subjective experience of feeling stronger and more capable within her new maternal body and mind, also referred to as self-confidence. The more resilience and trust in herself and her body a pregnant woman has, the more she feels empowered. It is also important to note that research suggests that a pregnant woman's neurochemistry is inclined toward confidence (Brunton & Russell, 2008).

Johnson, Worell, & Chandler (2005) defined the concept of empowerment as the process and result of women receiving support to learn skills and access resources to increase their capacity to cope with stress and trauma. Feeling empowered occurs as a primary result of health interventions and is an integral part of personal growth for women (Johnson et al., 2005). As discussed, the MCS theory proposes that a pregnant woman is likely to feel empowered by successfully and repeatedly going through the process of getting resourced and returning to a felt-sense of safety.

Another aspect of empowerment is self-compassion. As a pregnant woman moves through the process of Feeling Unsafe to Feeling Resourced to Feeling Safe again, she is likely to cultivate self-compassion, along with resilience and empowerment. Self-

compassion researcher, Kristin Neff, PhD and Chris Germer PhD (2017) link self-compassion with psychological well-being and explains that “self-compassion involves being touched by and opened to one’s own suffering, not avoiding or disconnecting from it, generating the desire to alleviate one’s suffering and to heal oneself with kindness” (p. 371). Stevenson and Allen (2017) suggest that women can draw strength and empowerment from self-compassion. Research suggests there are multi-faceted health benefits associated with empowerment, including physical and psycho-emotional-social, for pregnant mothers and their children, such as improved birth outcomes (Chuntharapat, Petpichetchian, & Hatthakit, 2008; Gruber, Cupito, & Dobson, 2013) and prevention and reduction of postpartum depression (Werner et al., 2016).

Through the process of creating synthesized coherence among the disparate fields of literature, maternal competence (Mercer & Ferketich, 1995) and confidence (Mercer & Walker, 2006) emerged as contributing factors to the development of maternal prenatal empowerment. Fundamental to BAM theory is the construct of maternal empowerment and competence. Mercer and Walker (2006) emphasized that maternal empowerment and competence are key in the ongoing development of maternal identity. Further emphasized in the BAM theory was that maternal competence builds with time as a result of a woman’s ability to take on the role of mother, increase her repertoire of mothering skills, and develop her self-concept inclusive of her new maternal identity (Fowles, 1998; Mercer & Walker, 2006). The MCS theory aligns with BAM’s model of maternal competence and empowerment and expands beyond it so as to include the potential for pregnancy to evolve a woman’s consciousness. A confident experience of her maternal

self, according to the results, is necessary for a woman to actualize her potential for pregnancy to evolve her consciousness.

The following three empirical examples demonstrate how prenatal maternal interventions have the ability to positively promote maternal empowerment. Researchers, Reis & Alligood (2014), investigated the association between the prenatal maternal intervention of prenatal yoga and women feeling empowered (which included feeling optimistic, powerful, and vital) while pregnant. Research on the innovative prenatal program, Centering Pregnancy indicated that this interdisciplinary model of prenatal maternal empowerment wherein pregnant women are supported to be responsible for themselves results in woman feeling more engaged and empowered during pregnancy and in the transition into motherhood (Bell, 2012; Rising, 1998). Preliminary studies on the PREPP program showed that this prenatal maternal intervention's unique way of providing a combination of psycho-education on perinatal biological and emotional changes, psychotherapy, and mindfulness meditation training applicable to early-mothering skills and behaviors helps prevent postpartum depression with at-risk pregnant women (Werner et al., 2016). While the preliminary PREPP studies did not explicitly measure maternal confidence, competence, or empowerment the program in and of itself empowers pregnant women with psycho-education, psychotherapy and mindfulness mothering skill building. The evidence-based prenatal maternal interventions discussed, reveal numerous factors involved in supporting pregnant women to feel empowered. At the time of this study, minus the few noteworthy maternal prenatal programs that have been highlighted above, the majority of research on maternal confidence and empowerment has primarily focused on the implications related to measurable physical

body health outcomes during pregnancy, labor, birth, and postpartum for women and babies (Graignic-Philippe et al., 2014; Laurent et al., 2018; Merlot et al., 2008; Monk et al., 2000, 2004; 2011; Mulder et al., 2002; Osborn & Monk; 2013; Schetter & Tanner, 2012; Van den Bergh, 2011; Weinstein, 2016; Weinstock, 2005). The research on maternal self-confidence, competence, optimism, and overall feeling of empowerment is creating the groundwork for future investigation regarding how the experience of pregnancy can evolve a woman's consciousness.

Study Limitations

The results of this study have limitations. The decision to conduct an abbreviated grounded theory study, compared to a classic grounded theory study, was due to limited time and funds. A classic grounded theory study would have involved a series of focus groups with the participating experts until data saturation was reached, requiring more time and funds than available for the study. Further research is needed to substantiate the findings, given the limitation that data was collected on a one-time basis via a remote focus group.

The MCS theory is based on data analysis derived from a purposeful, self-selected sample of professionals who are inclined toward complementary approaches to the prenatal and perinatal medical model and have a history of advocating for pregnant women. The focus group was a homogeneous sample and did not reflect all perspectives, particularly since there was little to no representation from licensed obstetricians, certified nurse midwives, and nurses who work with diverse low-risk populations within a hospital or birth center setting. It is therefore unknown whether practitioners of other views and backgrounds with expertise serving other low-risk populations would share the

same perspective. The potential uniform views of the focus group participants combined with the inherent bias of the primary researcher, who has a private coaching practice supporting the positive potential of pregnant women, may have had an influence on the data collection and analysis process.

It was a strategic decision to collect data from professionals and not pregnant women within the context of this grounded theory study. This specific methodology aims to understand the social process, history, and culture within the topic of inquiry, maternal consciousness, whereas other methods, such as Interpretative Phenomenological Analysis (IPA), would inquire about the subjective, lived experiences of the participants.

Gathering data from professionals captures the objective perspective on this topic, whereas gathering data directly from healthy, first-time pregnant women would have produced rich, subjective data. If a classic grounded theory study would have been feasible, it would have been optimal to collect data from both pregnant women and professionals. However, this was not an option for this study. The inclusion of the solely professional perspective may be a limitation in the generation of the MCS theory and is worthy of consideration in reviewing the results. The data did not capture the in-depth, nuanced experience of the prenatal maternal subjective experience. However, the MCS theory offers a starting place for discussion about how the experience of pregnancy may evolve a woman's consciousness that is grounded in data collected from seasoned professionals.

Recommendations Section

This study aimed to address the research question, “How can the experience of pregnancy evolve a woman’s consciousness?” A theory emerged that suggests the process in which a pregnant women’s consciousness can evolve and adds evidence to better support the understanding of pregnancy as a life-changing and consciousness-promoting event for healthy women becoming mothers. This section presents recommendations for future research as well as the implications of these results for practice.

Recommendations for Research

Additional research is needed to better understand the findings from this limited preliminary study and the resulting proposed MCS theory. The more that is understood about what improves a pregnant woman’s experience of feeling supported and empowered throughout her pregnancy, the better we are able to identify and create prenatal maternal resources. As suggested by the MCS theory, a healthy, well-supported pregnant woman is optimally positioned to continuously move through the MCS, and in so doing increase her self-awareness and evolve her consciousness. The results of this study generate five primary suggestions for future research.

First, future research is needed to explore the validity of the MCS theory. It is recommended that additional studies be conducted with diverse populations in various settings to substantiate and/or refine the five phase MCS theory. Next steps in research may include following first time healthy pregnant women (of varying ages, demographics, socioeconomic states) through the three trimesters of pregnancy in order to identify if, and how, lifestyle, resources, and other factors may influence a pregnant

woman's experience of moving through the MCS and the effects on her consciousness during pregnancy. In addition, it is recommended that this focus group study is replicated with diverse provider/practitioner populations (of varying ages, years of experience, demographics, professions, and service to diverse pregnant women populations, etc.) in order to understand whether or not the data collected in this study was unique to the participating experts or is generalizable. Also recommended is to replicate this focus group study with a diverse group of pregnant women. A study that conducted a focus group with diverse pregnant women and a focus group with diverse group of participating experts would serve to confirm this study's findings and create results that are more generalizable.

Second, in order to better understand the potential for pregnancy to evolve a woman's consciousness, it is suggested that future research explore the neuroplasticity of pregnancy. A baseline understanding of the neuroplasticity of a healthy pregnant woman's brain is recommended. This foundation can then be used to investigate and understand how to promote positive neuroplasticity and the relationship this may have on the evolution of a woman's consciousness during the maternal prenatal period. The well-being of the pregnant woman includes her consciousness and requires care and attention. Therefore, it is of great importance that studies investigate the factors that promote the well-being of women (inclusive of consciousness) who are becoming mothers (Van den Heuvel, Johannes, Henrichs, & Van den Berg, 2015). Furthermore, it is recommended that future research examine if there are specific aspects of maternal consciousness that are conducive to the expeditious evolution of a woman's consciousness during pregnancy.

Third, further research is recommended to better understand the potential similarities and differences between brain state activity during mindfulness meditation for non-pregnant women, and natural pregnant waking brain states. Research to explore the brain activity of pregnant women's brains during and after mindfulness training and practice is also recommended. If research substantiates that healthy pregnant brains have an increase in theta activity while awake, for example, then this could provide evidence that a pregnant woman is inclined toward experiencing meditative states organically. Furthermore, this could provide evidence regarding whether pregnant women are naturally predisposed to experience greater access to consciousness and/or more inclined to benefit from meditation practice. This exploration could provide valuable insight into if and how a woman's consciousness can evolve during pregnancy.

Fourth, future qualitative and quantitative research is recommended to better understand how effective various existing prenatal maternal support methods are in increasing mindfulness and evolving a pregnant woman's consciousness. This research may include using mind mapping (MEG/ EEG) to examine the positive neuroplasticity potential of pregnant brains in order to better understand how prenatal mindfulness meditation programs, such as MBCP and EBMI, impact women's consciousness and direct positive neuroplasticity during pregnancy.

Fifth, research is also recommended to explore whether or not the prenatate's brain state influences the mother's brain state. This might provide insight into how the prenatal dyadic relationship co-regulates and influences maternal brain states. Future questions to explore may include: Is it the prenatal maternal neurobiological, neurochemical adaptations that prompt the maternal brain state and function changes? Could the impact

of the prenaté's body and consciousness contribute to the healthy pregnant woman's brain state and function changes?

Implications for Practice

The MCS theory points to the evolutionary potential of consciousness available in the prenatal-maternal stage of human development and has implications for practice. More specifically, promoting understanding regarding the capacity and right for a pregnant woman to evolve her consciousness has practical implications applicable to: (a) pregnant women, (b) maternity care providers and educators, and (c) macro-level maternity systems.

Practice Implications for Pregnant Women. A call to action to offer prenatal education that includes the MCS theory, as well as the neuroplasticity of pregnancy beginning in the first and/or second trimester of pregnancy, is recommended. Commencing prenatal education during the first trimester could inform and inspire pregnant women to take action that will support the positive potential of the neuroplasticity of their brain, body, and consciousness throughout their entire pregnancy. Currently, due to the reality that most pregnant women receive education—only about birthing—in a third trimester childbirth preparation class, it is recommended that the MCS theory and how it can be applied during the remainder of pregnancy and birth be taught in childbirth preparation courses.

The MCS theory offers a way for pregnant women to conceptualize pregnancy as a transformational period of personal positive potential. This may include redefining “pregnancy brain” from a hindrance to an opportunity to utilize this unique time for positive neuroplasticity. As a pregnant woman understands and takes action to support

her personal growth and body-mind transformation, she positions herself to increase her self-awareness and evolve her consciousness. As her body grows with her prenatal's development, so may her consciousness. Exposure to this concept may encourage pregnant women to access body-mind-consciousness resources that support the positive potential of pregnancy.

Practice Implications for Maternity Care Providers and Educators. There is an opportunity in maternity care practice to redefine healthy outcomes and experiences of childbearing, to integrate psycho-emotional health and well-being, and to include pregnant women's consciousness. It is suggested that providers, such as prenatal maternal educators including childbirth educators, midwives, doulas, clinicians and physicians, receive training on the MCS theory as a way to better understand and support pregnant woman's well-being, personal transformation and potential to evolve consciousness. The MCS theory can be used as a platform to educate maternity care professionals about how pregnancy—a critical period of human development—can be better supported. The MCS theory can be integrated into trainings for educators and providers as a way to increase prenatal professional sagacity. The curriculum would include the importance of psycho-emotional support during pregnancy so that professionals can better help women connect with resources that will promote their felt-sense of safety, resilience, and awareness.

In addition to receiving education on the MCS theory, it is suggested that maternity care professionals are trained about the neuroplasticity of pregnancy in order to become sensitized to the dramatic brain and neurochemical adaptations that occur during this developmental period. Plus, this training can help increase maternity care

professionals' understanding of their possible influence on the positive or negative direction of pregnant women's neuroplasticity.

Furthermore, professional training on the MCS theory can encourage providers toward a more positive reconceptualization of their role and responsibility by inspiring them to consider the positive difference they can make given their influential role during the prenatal period. A continued-education training such as this can emphasize a positive expansion of providers' perceptions of their roles and responsibilities.

It is also recommended that maternity care professionals receive training to reshape their conceptualization of pregnant women. A call to action per the MCS theory is to advance the quality and tone of the patient-provider interactions from one-way, authoritative, to two-way, shared dialogue. Courses on language and manner that can support and empower pregnant women, as opposed to disempower, are recommended for maternity care providers and educators. A shared-decision making model includes mutual listening, speaking with respect and encouragement, and offering suggestions for resources that promote feeling safe and supported.

While attention to consciousness is typically outside the scope of obstetric care, it is reasonable for the standard of care to integrate patient-provider conversation about pregnant brain adaptations and positive neuroplasticity. Consequently, better informed pregnant women could make more educated choices and further explore the application of the MCS theory and consciousness engaging activities via adjunctive care.

System Level Implications

It is recommended that systems are established so that the mainstream allopathic model of prenatal care can integrate and recognize pregnancy as a developmental

milestone for women with the potential to increase awareness and enhance resilience and well-being.

The current culture of maternity care does not address or support the whole woman during childbearing (Wagner, 2006). The predominant medical model is crisis-prevention and intervention-oriented with a focus on predicting and addressing worst-case scenarios, even for healthy low-risk pregnant women. This authoritative and management-centered approach to pregnancy can induce fear, stress, and trauma, and consequently may result in unfavorable outcomes (Declercq et al., 2007; Sakala & Corry, 2008). Change to maternity care systems and protocols is slow and has not adequately improved the conditions for women. This change is necessary to allow for a woman's consciousness to be considered and advanced in tandem with her pregnant body's needs.

Significant system-level obstacles may need to be addressed for this to happen. Therefore, an alternative that may be more feasible is to sustain and further existing efforts aimed at strengthening adjunctive care that addresses prenatal maternal self-awareness. It is recommended that systems are created that support the development of a cooperative relationship between allopathic care providers and adjunctive providers (Reis & Alligood, 2014) in order to better support pregnant women. Mercer & Walker (2006) underscored that while there is some literature on the mental-emotional-psychological transformation women undergo during pregnancy and childbirth there has been little integration of a pregnant woman's psycho-emotional health and well-being within allopathic maternity care practice. According to Attanasio et al., (2014), "understanding the relationship between positive experiences and childbirth care and the role of clinicians in cultivating positive experiences may be particularly important" (p. 1280).

As previously discussed, there has been progress since 2006, as indicated by the research on the PREPP (Werner et al., 2016) and EBMI programs (Chan, 2016).

Additional progress can be seen by the implementation of the MBCP program and its integration of mindfulness training into childbirth education and the research results on MBCP (Duncan et al., 2017).

Although both of these programs demonstrate movement forward in positive, evidence-based prenatal maternal education and care, only a small percentage of pregnant women currently have access. Consideration of ways to build on the PREPP and MBCP research results to further explore how mindfulness training learned and practiced during pregnancy may promote an increase self-awareness and evolve consciousness for pregnant women is recommended.

The quality of care, support, and education provided to pregnant women is a health issue, women's issue, and humanitarian issue. The current dominant maternity care model does not yet consider the positive potential for the neuroplasticity of a woman's brain, body, and mind, and her subsequent opportunity to evolve her consciousness during pregnancy. This study provided insight into the evolutionary potential of women's consciousness during pregnancy, an area that once better understood could provide insight and direction to maternal, prenatal care as a whole.

The findings from this study make way for a scholarly discussion about the dynamic relationship between pregnancy and consciousness. How might society support new mothers' potential for positive neuroplasticity outcomes and increased awareness in service of mothers and children, families, and humanity as a whole? This topic of dialogue is likely to bring researchers, educators and practitioners from disparate fields to

converse on the shared premise that the opportunity to enhance the positive potential of pregnancy for both mother and baby is to also enrich and evolve humankind.

Discussion Conclusion

Time is short. Our world is rapidly changing. Thoughtful dialogue about our society's values, beliefs and child-rearing practices must take place now. The choices we make will have profound impact on the trajectory of our society—and our species. If we choose well, untapped potentials will emerge. If we remain passive and let the momentum of our dissolving social structures sweep us into the next generation, we lose the creativity and productivity of millions of children. And we lose our future. (Perry, 2005)

This study aimed to address the research question, “How can the experience of pregnancy evolve a woman’s consciousness?” The MCS theory emerged from the findings and suggests the process wherein a pregnant women’s consciousness can evolve. This theory adds evidence to better support the understanding of pregnancy as a life-changing and consciousness-promoting event for healthy women becoming mothers. A clear understanding of how women’s consciousness can evolve during the life-changing prenatal event of becoming a mother is yet to be rigorously explored scientifically. At the time of this study, there was an absence of scholarly literature on healthy women’s consciousness during pregnancy, and only a mere hint of a connection with how the neuroplasticity of pregnancy may influence a woman’s concept of self (Alhusen, 2008; Brandon et al., 2009; Glynn & Sandman, 2011; Lyman, 2005). Understanding the concept of self as mother, while very important, is different than maternal consciousness and the advancement of a pregnant woman’s consciousness. This

study's results provide insight into how a woman's awareness can expand during pregnancy and the potential for her consciousness to evolve when she has a subjective, felt-sense of safety and support.

Consciousness during pregnancy is unique in and of itself. The neural correlates (NCC) of consciousness and love and are similar. Healthy pregnant women experience surges of love toward their growing babies in utero. Therefore it is logical to speculate that a healthy pregnant woman may experience greater love, awareness, and consciousness. The synthesized coherence of this study's literature review produced two important insights: (a) pregnancy has unique phenomena, in that it is the only time when two human beings with consciousness are co-existing and co-regulating within a woman's body, and (b) pregnancy is a uniquely dramatic phase of adult neuroplasticity that may create conditions for the potential to increase awareness and evolve consciousness.

The MCS theory and the synthesized coherence presented in the literature review create the foundation for interdisciplinary, scholarly discussion. The literature suggests that the biological event of pregnancy promotes the possibility for a woman to increase her awareness. However, this positive potential available to women has not yet been acknowledged. In addition to bridging this topic into scholarly research, the issue of prenatal maternal consciousness can be seen as a humanitarian issue worthy of cultural discourse that may include questions such as: What are the consequences for society when ignoring consciousness as integral to this life passage for women? How might we be overlooking our nature as human beings to evolve consciousness? If we limit the

potential for consciousness to evolve for pregnant women, then do we limit the positive potential for human beings on this earth?

Encouraged by the results of this small study in conjunction with the synthesized coherence among the interdisciplinary literary fields that were presented, it appears that the potential for a woman's experience of pregnancy to evolve her consciousness is possible. This finding may have far reaching implications for women, children, families, communities, society, and humanity.

The positive potential for the evolution of humanity has been more rigorously investigated through a new trend in scholarly research the past 30 years as exemplified by the literature reviewed in chapter 2. This study coincides with trends in recent research aimed at investigating what is positively possible for the health and well-being of the hearts, minds, and consciousness of human beings in the greater context of advancing humanity (Bayne et al., 2016; Bodhi, 2011; Cahn & Polich, 2006; Condon, Desbordes, Miller, & DeSteno, 2013; Dahl et al., 2015; Davidson, 2012; Desbordes et al., 2015; Killingsworth & Gilbert, 2010; Lutz et al., 2007; Raffone & Srinivasan, 2010; Siegel, 2016; Wagner, 2001; Weng et al., 2013) and evokes several questions for scholarly discussion. For example, what if providing mindful training and consciousness engaging activities for pregnant women could help improve the health and well-being of children—the new members of society and future leaders—and produce more resilient and peaceful people, families, and communities? What if investing in the consciousness of new mothers could help generate a more compassionate, cooperative, and resourceful humanity? If this is even a remote possibility, then scholars, scientists, clinicians, educators, and human beings have a responsibility to protect and support the physical and

mental health of pregnant women, and to protect and promote the consciousness of pregnant mothers.

Humanising birth means understanding that the woman giving birth is a human being, not a machine and not just a container for making babies. Showing women – half of all people – that they are inferior and inadequate by taking away their power to give birth is a tragedy for all society. On the other hand, respecting the woman as an important and valuable human being and making certain that the woman’s experience while giving birth is fulfilling and empowering is not just a nice extra, it is absolutely essential as it makes the woman strong and therefore makes society strong. (Wagner, 2001, p. 25)

Pregnancy is a developmental milestone for every mother and new human being. Every human being begins his/her life inside a pregnant woman. Reis and Alligood (2014) refer to pregnancy as a transformative time in which the “well-being of mothers is critical to optimal birth outcomes” (p. 35). What happens within the body and mind of each pregnant woman influences the development and trajectory of each new mother and human being (Goodman et al., 2014; Grille, 2014; Wagner, 2001).

In light of current research on the brain, mind, and consciousness it is timely that rigorous scientific attention is given to what is involved in the making of mothers for a healthier, more resilient, and less reactive, violent humanity. Alternatively, when the conditions of dysfunctional families are promoted, then society suffers the repercussions of a dysfunctional humanity. In summation, the results of this study suggest that women’s consciousness can evolve during pregnancy through the process of the five-phase MCS. The evolution of pregnant women's consciousness has an interdependent relationship

with the evolution of humanity. This is a call to action to create a new conceptualization of pregnant women and pregnancy via current culture, systems, and practices of maternity care.

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APPENDIXES

APPENDIX A

Focus Group: Moderator's Question Prompts

How Does Maternal Consciousness Evolve?

1. **How can a woman's experience of pregnancy evolve her consciousness?**
2. **What are the essential elements (internal and external) for a pregnant woman to evolve her consciousness?**
 - a. Is having a connection with a greater power necessary for maternal consciousness to evolve? And if so, based on your experience and/or research, what is the impact on maternal consciousness?
3. **Based on your subjective view, when optimal pregnancy occurs, how does that positively impact maternal consciousness?**

Implications of Maternal Consciousness

4. **Does the pregnancy stage of a woman's psychological development play a role in our humanity's evolution?**
 - a. **How does her pregnancy experience inform her view of humanity and the planet?**
5. How does a pregnant woman's state of mind-being inform her experience of pregnancy and motherhood?
6. How does a pregnant woman's state of mind-being affect her relationship with herself, partner, and child?

Relationship with Self

7. What role does a pregnant woman's relationships with herself play in her evolution of maternal consciousness?
 - a. relationship with her body
 - b. inner knowing/maternal intuition
 - c. value of motherhood
 - d. own prenatal and perinatal history
 - e. relationship to her mother
 - f. experience and repair of traumas (perceptible and sub-perceptible)
8. What are the implications of a woman identifying and not identifying herself as a mother during pregnancy on her consciousness?

Dyadic Maternal-Fetal Relationship

9. **How does the dyadic relationship between a pregnant woman and her fetus impact the development of her maternal consciousness?**

10. What are the implications of the quality of a pregnant woman's attention on her inner development and her baby's development?

Relationship with Supporters

11. **Can the evolution of a mother's consciousness happen naturally or is it contingent on external support (prenatal practitioners, family, partner, friends, and community)?**
- a. What kinds of external support are necessary for optimal evolution in maternal consciousness?
 - b. What role does a pregnant woman's relationships with her partner play in her evolution of maternal consciousness?

BIOGRAPHICAL SKETCH

In her earliest professional beginnings, Cecily discovered her affinity and compassion for children while teaching at a preschool in Manhattan and later private creative-expression classes. Her interest and skills in research developed during her early career conducting focus groups as a preschool television researcher and consultant in New York City and Los Angeles.

She was an advocate for children and youth internationally. Cecily presented at the United Nations, universities, schools, and conferences. Toward the close of Cecily's global children's project, two of her featured child activists received the 1999 United Nations' Global Peace Awards as result of her nominations. One of Cecily's most affirming moments was when she received the Dalai Lama's approval for her children's compassion event proposal.

Cecily currently does private therapeutic practice working with women becoming mothers, fathers-in-the-making, and couples on the parenting continuum from preparation for conception, through pregnancy, birth, postpartum, and the early years. Cecily has helped birth empowered mothers around the world who are raising healthy, intelligent children, often with dispositions of delight, kindness, compassion, and resilience.

Essentially, Cecily's devotion to children, mothers, and fathers arose from her transformational experiences with children and pregnant women, and the insights that came in response to her frequent inquiry, "Can we raise compassionate human beings?" A sense of purpose emerged, and she invested in completing a master's degree in prenatal and perinatal psychology and continued on to get her doctorate in transformational education with a specialty in prenatal parenting.